

Case 15 Eni SpA: The Corporate Strategy of an International Energy Major



By May 2012, Paolo Scaroni had been CEO of the Italian energy giant Eni for seven years. His strategy had deviated little from that of his predecessor, Vittorio Mincato (CEO from 1998 to 2005). It comprised two major thrusts:

- a commitment to organic growth strategy with a particular emphasis on oil and gas exploration and production (E&P);
- a vertically integrated approach to Eni's natural gas business through linking Eni's gas fields in north and west Africa and gas supplied from its alliance partner, Gazprom, to its downstream gas business in Europe by pipelines (and, more recently, liquefied natural gas).

The strategy had achieved some notable successes. Since 2000, Eni had grown its petroleum output and reserves by more than most of the other majors, revenues had increased almost fourfold, return on capital employed had averaged 14.8% over the period, and in terms of market capitalization Eni was Europe's tenth-most-valuable company.

In his strategy presentation on March 15, 2012, Scaroni committed Eni to a continuation of this strategy:

- During 2012–2015, capital investment would rise to €15 billion annually, of which 75% would go to E&P. The target was for petroleum production to grow by more than 3% each year during 2012–2015.
- Eni would continue to grow its natural gas business. The majority of Eni's increased petroleum output would be natural gas; downstream, Eni would grow its sales of gas to European business and retail customers by 18% and 28% respectively; Eni would continue to invest in pipelines, including the proposed South Stream pipeline (a joint venture with Gazprom, EDF, and Wintershall) from Russia to Austria and Italy.

However, in pursuing this strategy, Scaroni recognized that Eni would face some strong headwinds. Expanding upstream production was becoming increasingly challenging: exploration was moving to technically challenging frontier regions such as the

Arctic and ocean floors, resource nationalism and political instability was a constant threat in producer countries, and competition in the upstream sector continued to grow.

Eni's vertically integrated gas strategy faced more immediate threats. Pipelines played a critical role in linking gas production to consumers. Eni's ownership of domestic gas transportation had long been under attack from the European Commission. In 2012, the new Italian government under Mario Monti made it clear that Eni would have to relinquish its 52% ownership of Snam Rete Gas, the gas network owner. The European Commission had also pressured Eni to sell its ownership stakes in several international pipelines on the basis that it had limited competition in the Italian gas market by restricting third-party access.

Eni's strategy of vertical integration in gas was also threatened by shareholder activism. Eni's share price had long been at a discount to its peers' (as measured by most valuation ratios). Knight Vinke, who owned 1% of Eni's equity, valued Eni's shares at €21 (they had traded in a range of €11.83 to €18.72 in the 12 months to May 2012) and believed that the best way for Eni to release value would be to spin off its downstream gas business entirely.

Other investors considered that Eni's refining and marketing, and chemicals businesses were better candidates for divestment. Both were declining businesses that were only marginally profitable.

Finally, Eni's strategy attracted the ire of environmental groups disappointed by the company's lack of investment in renewable energy sources and concerned over the environmental consequences of individual projects—most notably Eni's tar sands project in Congo.

The History of Eni

Mattei and the Creation of Eni, 1926–1962¹

In 1926, Italian Prime Minister Benito Mussolini established Agip (Azienda Generali Italiana Petroli) as a state-owned oil company.² At the end of the Second World War, Enrico Mattei, a former partisan, was appointed head of Agip and instructed to dismantle this relic of fascist economic intervention. Contrary to instructions, Mattei renewed Agip's exploration efforts and, in 1948, discovered a substantial gas field in northern Italy's Po Valley. In 1949, Mattei also took over the management of SNAM, the Italian gas distribution company. On February 10, 1953, the government merged Agip, SNAM, and other state-owned energy activities to form Ente Nazionale Idrocarburi (Eni) with the task of "promoting and undertaking initiatives of national interest in the fields of hydrocarbons and natural gases." Mattei was appointed its first chairman and chief executive. Eni's 36 subsidiaries extended well beyond oil and gas to include engineering services, chemicals, soap, and real estate.

Mattei's vision was for Eni to become an integrated, international oil and gas company that would ensure the independence of Italy's energy supplies and make a substantial contribution to Italy's postwar regeneration. In doing so he became a national hero: "He embodied great visions for postwar Italy—antifascism, the resurrection and rebuilding of the nation, and the emergence of the 'new man' who had made it himself, without the old boy network."³

Eni's international growth reflected Mattei's daring and resourcefulness. The international oil majors, which Mattei referred to as the "Seven Sisters" because of their

collusive tendencies, had tied up most of the world's known sources of oil in the Middle East and Latin America. The production-sharing agreement that Mattei signed with the Shah of Iran in 1957 marked the beginning of a fundamental shift of power from the oil majors to producer governments and established Eni as the *enfant terrible* of the oil business. The Iranian agreement was revolutionary. It created a jointly owned exploration and production company headed by an Iranian chairman and with the proceeds shared between Eni and the Iranian National Oil Company. This "Mattei formula" was replicated in Libya, Egypt, Tunisia, and Algeria during 1958–1960. Mattei also concluded a barter deal for crude oil from the Soviet Union: by 1960, Italy was the biggest customer for Soviet oil after China.

All the time Mattei was building political support within Italy. To meet the political needs of government and individual politicians, Eni became involved in acquiring struggling companies. By 1962, Eni was "engaged in industries as various as motels, highways, chemicals, soap, fertilizers, synthetic rubber, machinery, instruments, textiles, electrical generation and distribution, contract research, engineering and construction, publishing, nuclear power, steel pipe, cement, investment banking, and even education, to mention only a few."⁴

Eni under State Control, 1962–1992⁵

Mattei died in a plane crash on October 27, 1962 at the age of 56. He left a sprawling corporate empire whose strategy had been Mattei's own vision and whose integrating force had been Mattei's charisma and personal authority. Mattei had been president not just of Eni but also of its main operating companies.⁶ Without his leadership, power shifted to the politicians and Eni became an instrument of government economic, industrial, and employment policies.⁷ After 1975, the chairman of Eni lost direct control of its operating companies: their chief executives were appointed by government on the basis of political considerations. Nevertheless, Eni continued to expand its oil and gas interests. Major initiatives included the 1969 agreement to purchase natural gas from the Soviet Union (which involved Eni building a pipeline from the Austrian/Czechoslovak border to Italy), the Trans-Med Pipeline from Algeria and Tunisia to Italy, and offshore projects in West Africa. Financial performance remained weak: Eni earned significant profits only during 1988–1990 (Figure 1).

The Bernabè Era: Privatization and Transformation, 1992–1998

Pressured by the European Commission and the new European Monetary Union to cut the public-sector deficit and reduce state intervention in industry, in June 1992, reformist Prime Minister Giuliano Amato announced the first steps in granting Eni greater autonomy. Eni became a joint-stock company and its relations with government were transferred to the Treasury. At the same time, Franco Bernabè, a 44-year-old economist with almost no line-management experience, was appointed CEO.

Bernabè possessed a clear vision of Eni's future as a privatized, integrated energy company, shorn of its various diversified businesses.⁸ The corruption scandal that swept Italy in 1993 gave Bernabè the opportunity to launch a radical transformation of Eni. During March 1993, Eni's chairman, Gabriele Cagliari, and several senior Eni board members and executives were arrested on corruption charges.⁹ By the

summer of 1993, Bernabè had comprehensively restructured the management of Eni and its subsidiaries with the replacement of some 250 board members.¹⁰

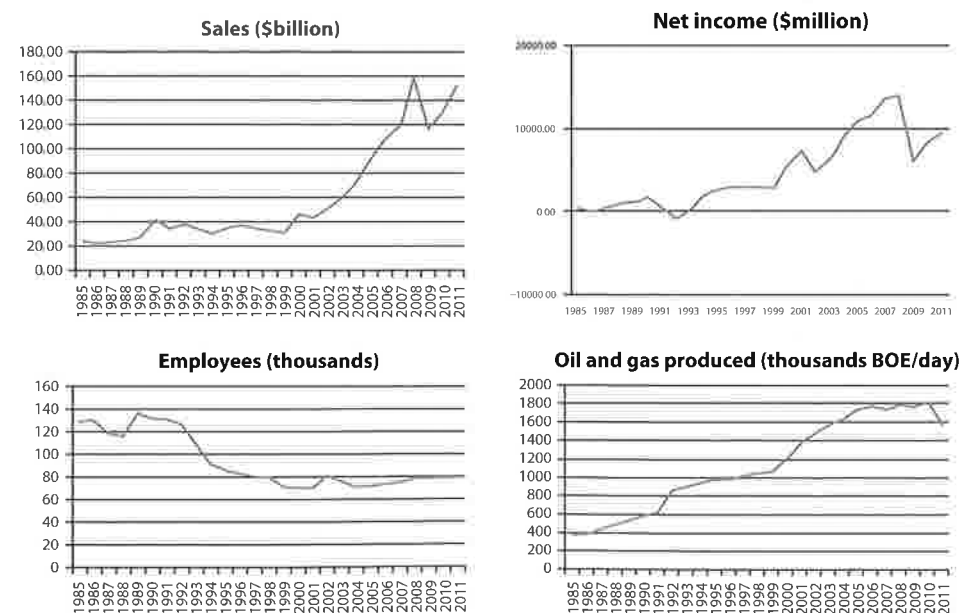
Bernabè's corporate strategy was "to reduce Eni from being a loose conglomerate to concentrate on its core activity of energy."¹¹ The sale of Nuovo Pignone (a turbine manufacturer) was followed by halving capacity at EniChem, Eni's troubled chemicals business. During 1993, Bernabè's first whole year as chief executive, 73 Eni businesses were closed or sold and employment was cut by 15,000. Cost savings and asset sales resulted in a profit of almost \$2 billion in 1994.¹²

Following Eni's initial public offering, its shares commenced trading in Milan, London, and New York on November 21, 1995. After more than 40 years of looking to politicians in Rome for guidance, Eni's top management had to adjust to a new set of masters: the global investment community.

The new creed of shareholder value creation encouraged further refocusing: "Eni's strategy is to focus on businesses and geographical areas where, through size, technology, or cost structure, it has a leading market position. To this end, Eni intends to implement dynamic management of its portfolio through acquisitions, joint ventures, and divestments. Eni also intends to outsource non-strategic activities."¹³ Capital investment became increasingly concentrated upon upstream activities. In refining and marketing, and petrochemicals, costs were reduced and assets sold.

The results were striking (see Figure 1). Between 1992 and 1998, Eni halved its debt, turned a loss into a substantial profit, and reduced employment by 46,000. In 1998, Bernabè was appointed to lead another newly privatized giant: Telecom Italia.

FIGURE 1 The Development of Eni, 1985–2011



Note:

BOE: barrels of oil-equivalent.

Source: Eni annual reports for various years.

The Mincato Era: 1998–2005: “Disciplined Growth”

Vittorio Mincato was a veteran line manager whose 42 years at Eni had included 15 years as chairman of EniChem, where he had led comprehensive turnaround and restructuring. In the 1999 annual report, Mincato outlined the strategy he intended to pursue:

The four-year plan approved at the end of 1999 derives from a new strategic vision that features, on one side, an aggressive growth option in upstream activities and, on the other, a customer-oriented approach in the energy markets.

For the upstream sector we devised a plan calling for 50% growth in hydrocarbon production by 2003. Such an objective will be made up of two components. The first is represented by ordinary growth . . . the second component of growth is related to mergers and acquisitions. . .

In the natural gas sector, Eni has been active at three levels. First, it followed an internationalization strategy in downstream activities with the aim of selling at least 10 billion cubic meters of natural gas per year by 2003 in foreign growth markets. . . Second, with the creation of EniPower, Eni started to restructure its activities in the electricity sector, an area which represents a necessary step to strengthen its position in the gas chain, in view of the fact that most of the growth in demand for natural gas in Europe will come from the expansion of combined cycle electricity production.

To support the opening up of the natural gas market in Italy, we started to restructure our activities at Snam, separating . . . transport activities from supply and sale.

The scope of the changes affecting our industry will require on our part the achievement of strong efficiency improvements. For this reason, plans to cut costs have been revised, raising to €1 billion (an increase of €250 million) the amount of savings that Eni plans to achieve through cost cutting by 2003 . . . while costs will be cut across all sectors, strong measures will be taken in the Petrochemical sector—whose weight in terms of net capital will decline to 7% by 2003.¹⁴

By the time he retired in 2005, Mincato had won plaudits from investors and industry leaders both for the clarity of Eni’s strategy and the effectiveness of its execution. Upstream, Eni extended its exploration activities in Kazakhstan (where Eni took over operatorship of the huge Kashagan oilfield), West Africa, Iran, and the Gulf of Mexico. While the other oil majors were engaged in mega-mergers, Eni limited itself to medium-sized acquisitions: British Borneo in May 2000 (€1.3 billion), LASMO in December 2000 (€4.1 billion), and Fortum’s Norwegian oil and gas assets in November 2002 (\$1.1 billion).

Major pipeline projects included the Blue Stream pipeline to move gas from Russia to Turkey under the Black Sea and the Greenstream pipeline from Libya to Italy. Both were built by Eni’s affiliate Saipem.

Eni extended its downstream gas business by acquiring 50% of Spain’s Union Fenosa Gas, 50% of GVS in Germany, and 33% of Galp Energia in Portugal. Eni also entered the gas markets of Hungary, Greece, and Croatia. Within Italy, Eni began investing heavily in power generation.

In refining and marketing and in chemicals, Eni pursued rationalization and cost reduction. Eni’s chemical business was consolidated into a separate company, Polimeri Europa.

Internally, Mincato sought to make Eni a more integrated corporation. Between 2000 and 2004, Mincato transformed Eni from a holding company into a multidivisional corporation. The main subsidiary companies, which had operated with their own boards of directors and chief executives, were reorganized into three divisions: exploration and production, gas and power, and refining and marketing. A key aspect of integration was a company-wide human resources strategy that emphasized training, appraisal, and career planning over traditional “personnel” activities.

To forge a clearer identity and image for Eni, the slogan “Eni’s Way” was adopted as the company’s tag line in advertising and corporate communication. The key themes that “Eni’s Way” embraced were technological strength, originality, spirit of adventure, and social and environmental responsibility.

Strategy under Scaroni, 2005–2012

Prior to his appointment as CEO of Eni, Paolo Scaroni had been CEO of Enel, Italy’s largest electricity supplier, and CEO of Pilkington, the British glass company. He was a graduate of Bocconi University and held an MBA from Columbia University. His appointment was greeted with dismay by *The Economist*:

Corporate governance [in Italy] continues to suffer big reverses, none bigger than the ousting last week by the government of Vittorio Mincato, the boss of Eni, the world’s sixth-largest oil and gas company. Not only was this talented and apolitical manager replaced by somebody who knows nothing of the industry (Paolo Scaroni, boss of Enel, Italy’s electrical utility); but also that ignorance is now shared by Eni’s entire board.¹⁵

Early skepticism was allayed by Scaroni’s effectiveness as a communicator, especially with the investment community, and as an international dealmaker. From the outset, Scaroni made it clear that he would not deviate substantially from Mincato’s “disciplined growth” strategy. In an interview with the *Financial Times*, he committed Eni to a ten-year strategy of turning Eni into one of the world’s oil and gas majors: “We will use our unique features to build a long-term growth strategy . . . We want to use the dimensions of our company and the dimensions of our country as a positive.” Like Mincato, he emphasized organic growth: “I do not see a climate for acquisitions today . . . In the game of cash, we are not the richest.”¹⁶

Upstream Growth

Under Scaroni, Eni’s capital expenditure more than doubled with about 70% going into E&P. Major upstream initiatives included:

- Kazakhstan: Eni’s giant Kashagan oilfield with upward of 15 billion barrels of oil was the world’s biggest oil find in 30 years. Eni held a 16.81% stake and was the field’s operator. It was Eni’s biggest upstream project and Scaroni’s biggest headache. The project suffered from recurrent cost overruns (the estimated development cost rose from an initial \$57 billion to \$156 billion), delays (start-up was pushed back from 2005 to end-2012), and accusations of environmental violations from the Kazak government. The Kazak government

blamed Eni's mismanagement of the project; Eni pointed to the technical, geological, and logistical complexities of the project and the world shortage of engineers, geologists, and technicians. In January 2009, a joint operating company replaced Eni as the developer of the field.

- In Russia, Eni built upon its historical relationship as one of the biggest customers of Soviet gas, to broaden its relationship with Gazprom. This involved Eni acquiring equity stakes in four Russian oil companies, a joint venture with Gazprom to build South Stream, a contract signed in 2012 to import gas from Gazprom, and E&P projects in the Samburgskoye and Urengoskoye fields.
- In Congo, Eni negotiated an agreement with the Republic of Congo that some observers hailed as a model for future oil company relations with host governments. The May 2008 agreement involved Eni investing \$3 billion in a variety of projects. In addition to onshore and offshore E&P projects, Eni would build two power plants that would use associated gas from Eni's M'Boundi oilfield. The project included distribution infrastructure and would provide 80% of Congo's electricity needs. In addition, Eni would develop a palm oil plantation to produce biofuels. The Eni Foundation planned to fund local health clinics and a program of vaccination of children.
- In Libya, Eni built on its status as Libya's longest partner in oil production and biggest buyer of Libyan oil by extending its concession for a further 25 years and agreeing with the Libyan government to sell it a 10% equity stake in Eni.¹⁷ By May 2012, Libyan production was getting back to normal following the overthrow of the Gaddafi regime.
- Eni extended its E&P activities into new areas. In some cases these were the result of acquisitions. These included: Maurel and Prom's assets in Congo for \$1.4 billion (February 2007), a Gulf of Mexico oilfield from Dominion Resources for \$4.8 billion (April 2007), Burren Energy PLC with its gas fields in Turkmenistan and India for €2.36 billion (January 2008), and First Calgary Petroleum Ltd with upstream assets in Algeria for €0.7 billion (November 2008). Australia, East Timor, Indonesia, and Pakistan were also growth areas for Eni. However, these developments paled into insignificance when compared to Eni's discoveries of two major gas fields off Mozambique. The size of these fields was estimated at between 47 and 52 trillion cubic feet of gas (equivalent to 8.1 to 9.0 billion barrels of oil).
- As Eni's gas fields extended well beyond its core Mediterranean region, so it looked increasingly to LNG as a means of monetizing these reserves. LNG allowed Eni to extend geographically both its production and marketing of gas: downstream it planned to expand sales of gas both to Asia and the US. By 2012, Eni held equity interests in LNG trains in Egypt, Libya, Nigeria, Angola, Oman, Trinidad, Indonesia, and Australia; and in regasification plants in Italy, Spain, Portugal, and the US. It was planning an LNG plant in Mozambique to exploit its newly discovered gas fields there.

Tables 1 and 2 show Eni's geographical distribution of production and reserves. Eni's geographical distribution of its upstream activities contrasted sharply with that of most other petroleum majors'. Their major sources of hydrocarbons were North America and the Middle East. Eni's focus on Africa and the former Soviet

TABLE 1 Eni's hydrocarbon production and reserves by region

| | Italy | North Sea | North Africa | West Africa | Rest of world | World |
|--|-------|-----------|--------------|-------------|---------------|-------|
| Production (thousands of BOE/day) | | | | | | |
| 2011 | 186 | 216 | 438 | 370 | 371 | 1,581 |
| 2010 | 183 | 222 | 602 | 400 | 408 | 1,815 |
| 2009 | 169 | 247 | 573 | 360 | 420 | 1,769 |
| 2008 | 199 | 237 | 645 | 335 | 381 | 1,797 |
| 2007 | 212 | 261 | 594 | 327 | 342 | 1,736 |
| 2006 | 238 | 282 | 555 | 372 | 323 | 1,770 |
| 2005 | 261 | 283 | 480 | 343 | 370 | 1,737 |
| 2004 | 271 | 308 | 380 | 316 | 349 | 1,624 |
| 2003 | 300 | 345 | 351 | 260 | 306 | 1,562 |
| 2002 | 316 | 308 | 354 | 238 | 256 | 1,472 |
| 2001 | 308 | 288 | 317 | 233 | 223 | 1,369 |
| 2000 | 333 | 168 | 306 | 225 | 155 | 1,187 |
| Reserves (millions of BOE) | | | | | | |
| 2011 | 703 | 590 | 1,922 | 1,141 | 1,853 | 6,209 |

Note:

BOE: barrels of oil-equivalent.

Source: Eni annual reports for various years.

TABLE 2 Eni's major hydrocarbon producing countries 2011 and 2000 (thousands of BOE/day)

| | 2011 | 2000 |
|------------|------|------|
| Egypt | 236 | 180 |
| Italy | 186 | 308 |
| Nigeria | 160 | 98 |
| Norway | 131 | 84 |
| Libya | 112 | 87 |
| Congo | 108 | 69 |
| Kazakhstan | 106 | 42 |
| Angola | 98 | 64 |
| US | 98 | 46 |
| UK | 80 | 202 |
| Algeria | 72 | 35 |
| Pakistan | 58 | 4 |

Note:

BOE: barrels of oil equivalent.

Union reflected, first, its comparative youth and, second, its capacity to build cordial relations in countries that were conventionally viewed as difficult places to do business. According to Steve LeVine: "Italy's Eni continues to pioneer a successful path to survival in Big Oil's treacherous new world—get in bed, don't compete with the world's state-owned oil companies . . . Where its brethren bicker with Hugo Chavez and Vladimir Putin, Eni has found a comfortable embrace."¹⁸

Doing business with the autocratic and unrepresentative governments of Libya, Algeria, Nigeria, Angola, Kazakhstan, and Russia resulted in Eni being accused of being opportunistic and unprincipled. Scaroni's response was matter-of-fact: "We deal with countries that have gas. If Switzerland had gas, we would deal with Switzerland." At the root of Eni's flexible, innovative approach to relationships with producer countries was acceptance of the fact that the balance of power has shifted in favor of the producer countries: "The fact is, the oil is theirs . . . If you are looked at as a partner, you are allowed to exploit their oil; if not, you are pushed aside."¹⁹

Downstream: Building the European Gas Business

In possessing a large downstream gas business, Eni was unique among the majors. While all the majors were vertically integrated in oil, gas distribution had historically been in the hands of specialist companies: state-owned monopolies such as British Gas and Gaz de France in Europe or regulated local utilities in the US.

Scaroni was keen to maintain Eni's strong position in the European gas market, where he believed that Eni's vertical integration offered it a key competitive advantage:

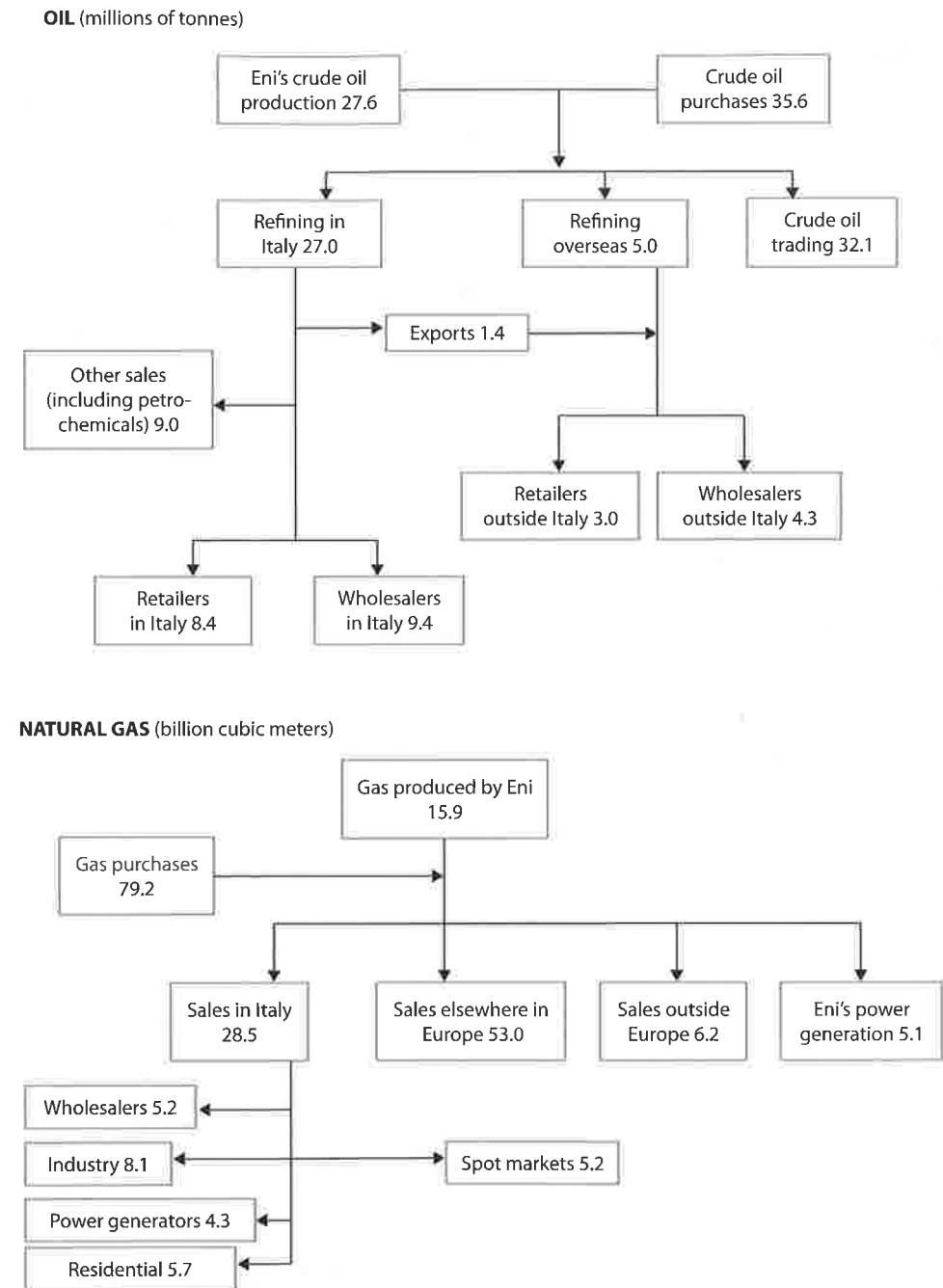
Eni has a very distinctive way of dealing with the gas in Europe. We are both upstream with our E&P division, and downstream in distribution, transport and sales. Just to give you an idea of how integrated these two divisions are, 35% of our equity gas is sold through our Gas & Power division, so we are already where most of our competitors in the midstream and downstream business of gas would like to be: integrated upstream, and generating our sales from our own equity gas . . . Then of course we have a wide portfolio of sourcing of gas, which goes from Algeria to Libya, Poland, Norway, and of course, Russia . . . There is no other player that has such a privileged position in the European market—I hope we will demonstrate to you that for each segment of our business—and we have exciting opportunities for growth.²⁰

Marco Alvera, in charge of gas supplies, listed these advantages:

Our gas, be it equity or contracted, comes from ten different countries. This gives us considerable diversity and security of supply. Second, we can leverage on a growing integrated LNG business. Third, we have attractive contractual structures and terms. Fourth, we have access to a very large set of transportation and storage assets across Europe from north to south and east to west. Finally, we have significant commercial flexibility that allows us to vary, on a daily basis, the amounts of gas produced or drawn from each of our contracts.²¹

As a result of the pipeline and storage system through which Eni brought gas to Italy from the North Sea, from Russia and from North Africa, it could easily supply other countries of Europe. Moreover, its long history had given it profound knowledge of the industry and a set of relationships which, in the case of Gazprom, has existed for almost half a century. "Summing up," said Alvera, "I would say that no other operator in the European gas market can claim to have the same scale and asset backed flexibility as Eni's Gas and Power division. Enhancing our optimization capabilities, as we continue our transition from former state monopoly in Italy to a true European leader in the gas market, will push us even further into a league of our own."

FIGURE 2 Eni's vertical chains in oil and gas

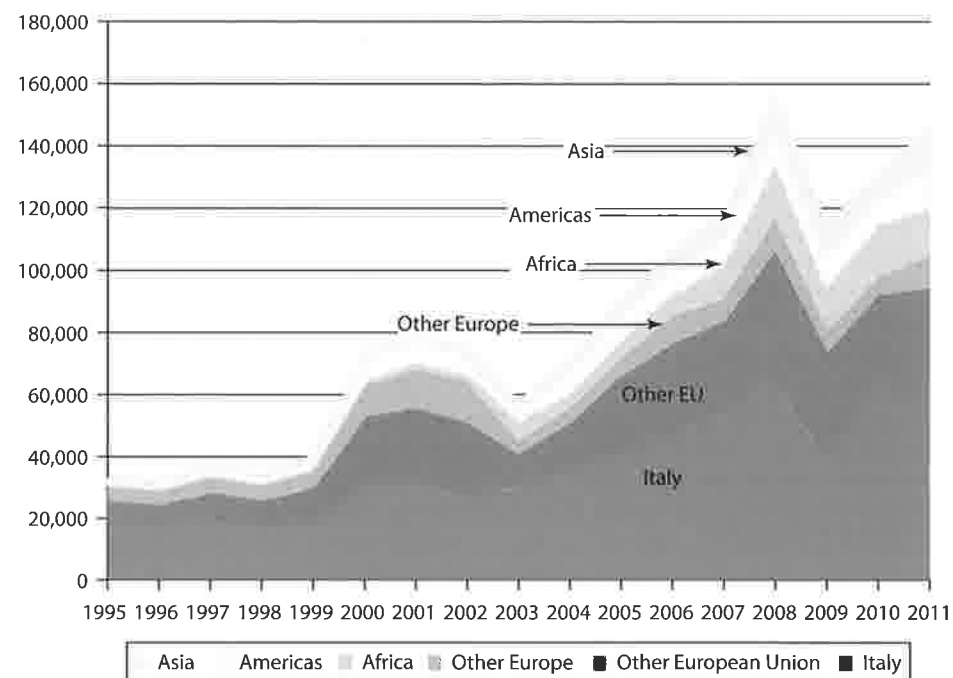


The European Commission had other ideas. European directives on competition in natural gas required Eni to limit its share of the Italian downstream gas market to 50% and vest its gas storage and gas transportation assets into separate, regulated companies. Eni had transferred its Italian gas transportation network to a separate company, Snam Rete Gas, which it listed on the Milan stock exchange in December 2001. In 2008, Eni sold its gas storage company, Stogit and its gas distribution company, Italgas, to Snam Rete Gas for a total of €4.8 billion. However, Eni still retained 52% ownership in Snam; in 2012, the Italian government decreed that Eni should sell its stake by September 2013. Eni was also required to sell ownership stakes in several international pipelines.

Downstream oil was a different story. Unlike most other oil and gas majors, the refining and marketing of oil products was a comparatively minor part of Eni's downstream business, accounting for a mere 6.4% of Eni's fixed assets. Refining and marketing were heavily focused on Italy, where Eni held 31% of the market for fuels. Under Scaroni, Eni continued to shrink its refining capacity, reduce its number of retail outlets, and narrow its geographical scope (it sold its downstream businesses in Spain and Portugal). Despite cost cutting and technical upgrading, the depressed state of the downstream market meant that Eni's refining and marketing sector lost money in 2009, 2010, and 2011.

Eni's vertical chains for oil and gas are shown in Figure 2. Note that, despite Eni's commitment to international expansion in both upstream and downstream gas, Italy still accounted for almost one-third of Eni's total revenues in 2011 (Figure 3).

FIGURE 3 Eni's sales by geographic area (\$million)



Source: Eni Fact Books, various years.

The Petroleum Sector in 2012

The petroleum sector comprises two major segments: upstream and downstream. Upstream is concerned with the exploration and production of oil and gas; in the downstream segment, gas and oil have separate value chains. In oil the primary activities are refining and marketing (where marketing includes both wholesale and retail distribution of fuels). In gas the primary downstream activities are distribution and marketing. Linking upstream and downstream are mid-stream activities comprising the transportation of oil and gas (pipeline and marine) and trading.

The Companies

The petroleum sector featured three main types of company:

- The *oil and gas majors* were characterized by their age, size, international scope, and vertical integration. They were among the oldest and largest companies in the industry. Between 1998 and 2002, a wave of mergers and acquisitions resulted in the emergence of an elite group of "super majors" comprising ExxonMobil, BP, Royal Dutch Shell, ChevronTexaco, ConocoPhillips, and Total (Table 3). The extent of economic benefits from

TABLE 3 Major mergers and acquisitions among the petroleum majors^a

| Major oil companies, 1995 | Revenues, 1995 (\$billion) | Date merged | Major oil companies, 2011 | Revenues, 2011 (\$billion) |
|---------------------------|----------------------------|-------------|---------------------------|----------------------------|
| Exxon | 124 | 1999 | Exxon Mobil Corp. | 433.5 |
| Mobil | 75 | | | |
| Royal Dutch Petroleum | 110 | 2004 | Royal Dutch Shell | 470.2 |
| Shell Transport & Trading | | | | |
| Enterprise Oil | 1 | 2002 | BP | 375.5 |
| British Petroleum | 56 | | | |
| Amoco | 28 | 1998 | Chevron | 236.6 |
| Arco | 16 | 2000 | | |
| Chevron | 31 | 2001 | Total | 216.2 |
| Texaco | 36 | | | |
| Total | 28 | | | |
| PetroFina | n.a. | 1999 | ConocoPhillips | 230.7 |
| Elf Aquitaine | n.a. | 2000 | | |
| Conoco | 15 | 2002 | | |
| Philips Petroleum | 13 | | | |
| Tosco | n.a. | 2001 | | |
| Eni | 36 | | Eni | 143.2 |
| Repsol | 21 | | Repsol YPF | 72.8 |
| YPF | 5 | 1999 | | |

Note:

^aOnly includes acquisitions of companies with revenues exceeding \$1 billion.

these mergers and acquisitions remains disputed. The costs of developing oil and gas fields and building LNG (liquefied natural gas) facilities were huge, but typically these were undertaken as joint ventures, not by single firms. A large portfolio of upstream projects allowed the cost of infrastructure to be spread and risks to be pooled. However, there was little evidence that scale economies offered significant advantages to “super majors” over mere “majors.” The majors differed in their chemical activities. Some of the majors were major petrochemical producers (e.g., ExxonMobil, Royal Dutch Shell, and Total). Others had divested most of their chemical activities (e.g., BP and Chevron).

- The *national oil companies (NOCs)* were the state-owned enterprises (mostly monopolies) created by producer governments to manage their countries’ petroleum reserves. In terms of production and reserves, the NOCs dominated the ranks of the leading petroleum companies in 2012 (Table 4). Most were created

TABLE 4 The world’s top-30 petroleum companies by size of reserves

| Company | State ownership | Reserves (million BOE) |
|---|-----------------|------------------------|
| National Iranian Oil Company (Iran) | 100% | 315,757 |
| Saudi Arabian Oil Company (Saudi Arabia) | 100% | 307,143 |
| Petróleos de Venezuela SA (Venezuela) | 100% | 241,744 |
| Qatar General Petroleum Corporation (Qatar) | 100% | 178,508 |
| Iraq National Oil Company (Iraq) | 100% | 135,503 |
| Abu Dhabi National Oil Company (UAE) | 100% | 128,439 |
| Kuwait Petroleum Corporation (Kuwait) | 100% | 112,269 |
| Nigerian National Petroleum Corporation (Nigeria) | 100% | 69,145 |
| National Oil Company (Libya) | 100% | 55,767 |
| Sonatrach (Algeria) | 100% | 39,379 |
| AO Gazprom (Russia) | 50% | 29,261 |
| AO Rosneft (Russia) | 75% | 22,885 |
| PetroChina Co. Ltd. (China) | 87% | 22,475 |
| BP Corporation (United Kingdom) | 0% | 17,829 |
| Egyptian General Petroleum Corporation (Egypt) | 100% | 17,597 |
| Exxon Mobil Corporation (United States) | 0% | 17,420 |
| Petróleos Mexicanos (Mexico) | 100% | 13,319 |
| AO Lukoil (Russia) | 0% | 13,029 |
| Royal Dutch/Shell (Netherlands) | 0% | 12,585 |
| Petróleo Brasileiro SA (Brazil) | 37% | 12,531 |
| Sonangol (Angola) | 100% | 11,370 |
| Chevron Corporation (United States) | 0% | 10,648 |
| Petroleum Development Oman LLC (Oman) | 100% | 10,628 |
| Total (France) | 5% | 10,395 |
| ConocoPhillips (United States) | 0% | 6,733 |
| Eni (Italy) | 30% | 6,680 |
| Petróleos de Ecuador (Ecuador) | 90% | 6,558 |
| Petronas (Malaysia) | 100% | 5,986 |
| Statoil (Norway) | 67% | 5,195 |
| Suncor Energy Inc. (Canada) | 0% | 4,920 |

Note:

BOE: barrels of oil equivalent.

Source: “OGJ 200/100,” *Oil & Gas Journal*, October 1, 2011.

between the mid-1960s and the early 1980s by nationalizing the oil assets of the majors. During 2000–2012, the relationship between the majors and the NOCs shifted substantially. Rising crude prices and growing nationalism among oil producing countries resulted in the increasing desire of the NOCs for greater control over their countries’ hydrocarbon resources and bigger shares of production and revenues. In Venezuela, Bolivia, and Russia, foreign oil companies were forced to transfer upstream assets to the national government or to local companies. Elsewhere higher taxes were imposed and participation agreements renegotiated. Increasingly, the NOCs have become direct competitors of the majors. Some, such as Petrobras and CNOOC, became important international players. Others, such as Saudi Aramco, Kuwait Petroleum, and PDVSA, established large downstream (and petrochemical) businesses, which depressed margins in refining and bulk chemicals. With the help of oil service companies, such as Halliburton and Schlumberger, the NOCs had access to modern technologies and became less dependent upon the majors.

- *Independents:* At all vertical levels, specialist companies played an important role. In exploration and production, companies such as Devon Energy, Anadarko, Cairn Resources, and Woodside Petroleum were important players, especially in exploring frontier regions. Their operational and financial success contradicted the arguments of the majors that huge size was an essential requirement in the petroleum industry. In refining, independent refiners such as Valero in the US grew as the majors sold off downstream assets. (Appendix 3 lists the world’s largest oil and gas companies with publicly traded shares.)

Vertical Integration Strategies

A key feature of the strategies of majors had been vertical integration throughout the value chain from exploration through to retailing gasoline and other refined products. The rationale for vertical integration had been the need for security of supply and of market outlets. However, in the case of oil, the development of a global infrastructure of transportation and storage, competitive markets for both crude and refined products, and the presence of specialist companies at every stage of the value chain had reduced (if not eliminated) the advantages of vertical integration. While most majors remained vertically integrated, few had close operational linkages between their oilfields and refineries, and all had withdrawn from some stages of the value chain, for example outsourcing oilfield services and marine transportation. ConocoPhillips went further: in 2011, it spun off its downstream businesses into a separate company, Phillips 66 Company:

We have recognized that it is no longer a strategic advantage to have a complex, integrated business model. Two independent businesses, focused on specific portions of the energy industry, have greater potential to outperform competition and create differentiated value.²²

In gas the situation was different. The physical difficulties of transporting and storing gas meant that monetizing gas reserves required dedicated investments in transportation, liquefaction, and storage to link production to consumption. The lack of an integrated global market in gas was indicated by the geographical price

differences that were much wider than in oil. In oil, the London trader Brent and New York trader Texas West Intermediate tended to be within 10% of one another. In May 2012, US gas prices had fallen to \$2 for one million BTUs (British thermal unit), the comparable price in Europe was \$6 to \$8, and in Asia up to \$16.²³ Forward integration by the petroleum majors into downstream gas was mainly through directly supplying large industrial customers or through alliances and long-term contracts with gas marketing companies. Vertical integration along the gas chain had also encouraged most of the majors to invest in electricity generation.

For all the majors, gas had emerged as a key strategic priority. Once regarded as a worthless impediment that was flared, the world demand for gas was growing twice as fast as the demand for oil. In 2011, gas consumption (in terms of oil equivalency) was 85% that of oil. While the 20th century was the “age of oil,” the first half of the twenty-first century was predicted to be the “era of gas” by some petroleum industry experts.

Technology and Knowledge Management

The quest for reserves had taken the petroleum majors to the Arctic and the depths of the ocean. It had encouraged companies to develop enhanced recovery techniques in order to extend the lives of mature fields. It resulted in the production of synthetic crudes from sulfur-heavy petroleum, from coal, and from tar sands and oil shale. Gas-to-liquids technologies were being deployed to produce gasoline from natural gas.

The result was increased dependence upon technology. Nevertheless, investments in R & D by the majors were modest (less than 0.3% of revenues in recent years). Increasingly, the majors outsourced technology-intensive activities to other companies. Upstream, the technological leaders in directional drilling, 4-D seismic modeling, and “intelligent oilfield” management were the oil service companies, Schlumberger in particular.

However, the knowledge requirements of the petroleum business extended beyond technology. The technical, logistical, political, and financial complexities of the business meant that a critical driver of competitive advantage was the ability to learn from experience and transfer that learning throughout the company. By the early years of the new century, all the leading oil and gas companies had adopted some form of knowledge management to increase the efficiency of their knowledge capture, storage, and utilization. Many of the new knowledge management systems relied heavily on web-based technology, distributed computing, and digital wireless communication to enhance the speed and quality of decision making.

Exploration and Production The oil price rise of 2002–2012 (from \$22 in 2002 to over \$100 during the early part of 2012) had reinforced the industry’s conventional wisdom that upstream provides the primary source of profit for the energy industry. For all the petroleum majors, their upstream divisions were their most profitable businesses: during 2006–2011, ExxonMobil, Royal Dutch Shell, BP, Chevron, Total, and Eni each earned a rate of return on capital in E&P that was at least double what they earned in refining and marketing. Although upstream activities accounted for only one-fifth of their revenues, they contributed about three-quarters of overall profits during 2004–2011. Table 5 shows rates of return by business for US petroleum companies.

TABLE 5 US petroleum companies return on investment by line of business, 1980–2009 (%)

| | 1980–1984 | 1985–1989 | 1990–1994 | 1995–1999 | 2000–2003 | 2004–2007 | 2008–2009 |
|--------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| US oil and gas production | 15.4 | 4.0 | 5.8 | 10.1 | 14.4 | 19.00 | 7.1 |
| US refining and marketing | 5.1 | 8.0 | 2.7 | 5.7 | 7.9 | 22.3 | (2.1) |
| Foreign oil and gas production | 19.3 | 12.2 | 9.1 | 12.4 | 12.9 | 21.5 | 13.7 |
| Foreign refining and marketing | 10.4 | 6.8 | 10.1 | 7.0 | 6.2 | 19.7 | 9.3 |
| Downstream gas | n.a. | n.a. | n.a. | n.a. | 7.3 | 8.2 | 7.4 |

Note:

n.a.: not available.

Figures in parentheses denote a loss.

Source: Energy Information Administration, performance profiles of major energy producers, US Department of Energy (various years).

The profitability of E&P depends critically upon the price of oil, which is determined primarily by the relationship between demand and production capacity. During 2000–2012, increasing demand from India and China was the major impetus behind rising oil prices (Figure 4). At the same time, output was constrained by political factors. Economic sanctions on Iran, internal disruption in Libya, Egypt, Iraq, and Nigeria, resource nationalism, and underinvestment in Venezuela, Russia,

FIGURE 4 Oil prices: West Texas intermediate crude per barrel, 1982–2012 (\$)

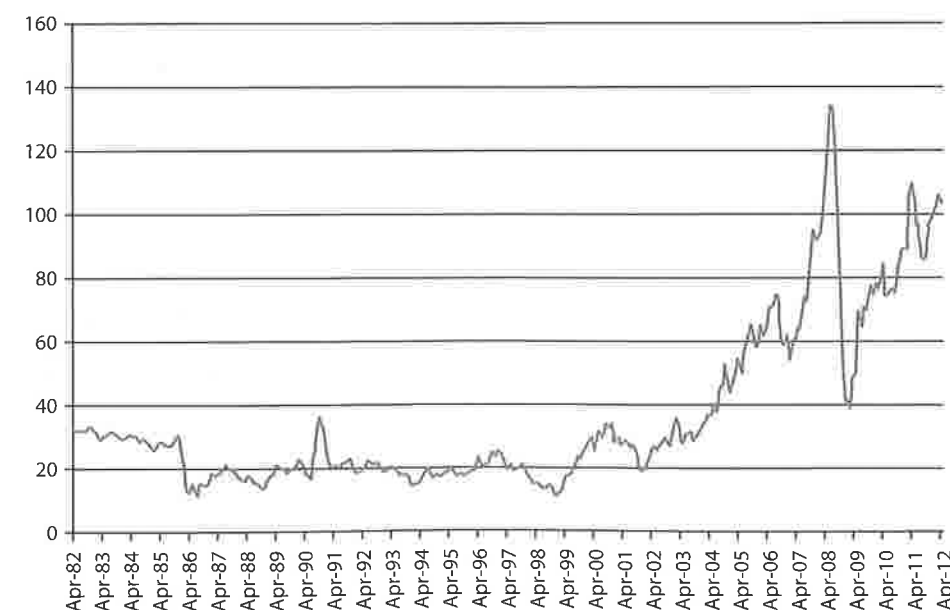


TABLE 6 Oil and gas production and reserves by country

| | Oil production (thousand barrels/day) | | | Gas production (billion m ³ /day) | | | Oil reserves (bn barrels) | Gas reserves (tn m ³) |
|--------------|--|--------|-------|---|-------|------|------------------------------|--------------------------------------|
| | 2010 | 2007 | 1991 | 2010 | 2007 | 1991 | 2010 | 2010 |
| Saudi Arabia | 10,007 | 10,413 | 8,820 | 83.9 | 75.9 | 35 | 264.5 | 8.0 |
| Russia | 10,270 | 9,978 | 9,326 | 588.9 | 607.4 | 600 | 77.4 | 44.8 |
| US | 7,513 | 6,879 | 9,076 | 611.0 | 545.9 | 510 | 30.9 | 7.7 |
| Iran | 4,245 | 4,404 | 3,500 | 138.5 | 111.9 | 26 | 137.0 | 29.6 |
| China | 4,071 | 3,743 | 2,828 | 96.8 | 69.3 | 15 | 14.8 | 2.8 |
| Canada | 3,336 | 3,309 | 1,980 | 159.8 | 183.7 | 105 | 32.1 | 1.7 |
| Mexico | 2,958 | 3,477 | 3,126 | 55.3 | 46.2 | 28 | 11.4 | 0.5 |
| UAE | 2,849 | 2,915 | 2,639 | 51.0 | 49.2 | 24 | 97.8 | 6.0 |
| Kuwait | 2,508 | 2,626 | 185 | 11.6 | 12.6 | 1 | 101.5 | 1.8 |
| Venezuela | 2,471 | 2,613 | 2,501 | 28.5 | 28.5 | 22 | 211.2 | 5.5 |
| Iraq | 2,460 | 2,145 | 279 | 1.3 | 1.5 | n.a. | 115 | 3.2 |
| Nigeria | 2,402 | 2,356 | 1,890 | 33.6 | 28.4 | 4 | 37.2 | 5.3 |
| Norway | 2,137 | 2,556 | 1,923 | 106.4 | 89.7 | 27 | 6.7 | 2.0 |
| Algeria | 1,809 | 2,000 | 1,351 | 80.4 | 83.2 | 53 | 12.2 | 4.5 |
| UK | 1,339 | 1,636 | 1,919 | 57.1 | 72.4 | 51 | 2.8 | 0.3 |

Notes:

Bn: billion,
tn: trillion.

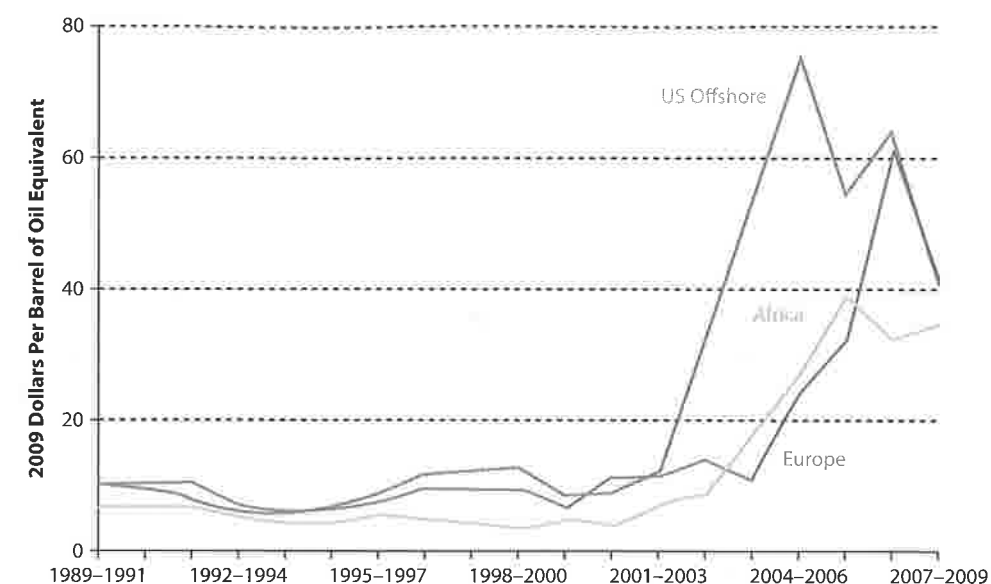
Source: BP Statistical Review of World Energy, 2008 and 2011. Reproduced by permission of BP p.l.c.

and Mexico all limited the flow of oil to world markets. When increased supply or lack of demand causes the oil market to soften, prices are supported by production quotas imposed by the Organization of Petroleum Exporting Countries (OPEC) and by Saudi Arabia, which acts as a "swing producer"—adjusting its output to stabilize world prices. The tendency for petroleum rich countries to have autocratic, often oppressive, regimes created the potential for political instability (Table 6).

High oil prices combined with restricted access to existing reserves caused the companies to move increasingly to deep-water exploration and nonconventional oils (tar sands, oil shale) causing finding costs to escalate (Figure 5).

The desire to control rising upstream costs encouraged the oil and gas companies to outsource more and more of their E&P activities. Drilling, seismic surveys, rig design, platform construction, and oilfield maintenance were increasingly undertaken by oilfield service companies. As these oilfield service companies developed their expertise and their proprietary technologies, and grew through mergers and acquisitions, so sector leaders such as Schlumberger, Baker Hughes, Halliburton, and Diamond Offshore Drilling emerged as powerful players within the petroleum industry.

The attractive rates of return earned in the upstream sector meant that capital investment by the integrated majors became increasingly focused upon the upstream sector. Between 2000 and 2008, the leading majors invested between three and four times as much upstream as downstream (Table 7). During previous decades, capital investment was split more evenly between upstream and downstream.

FIGURE 5 US petroleum companies' finding costs per barrel of oil equivalent**Notes:**

Costs are a quotient of costs and reserve additions for each three-year period.
BOE: Barrels of oil equivalent.

Source: US Energy Information Administration, Form EIA-28 (Financial Reporting System).

TABLE 7 Capital expenditures among the majors, 2003–2011

| | Average annual capital expenditure (\$billion) | | Capital expenditure on E&P as % of the total | |
|-------------------|--|-----------|--|-----------|
| | 2003–2007 | 2008–2011 | 2003–2007 | 2008–2011 |
| ExxonMobil | 17.0 | 30.5 | 78.2 | 82.6 |
| Royal Dutch/Shell | 16.4 | 26.6 | 68.0 | 78.2 |
| BP | 17.9 | 24.9 | 69.3 | 79.1 |
| Total | 12.2 | 23.9 | 72.3 | 65.2 |
| Chevron | 10.8 | 21.9 | 77.0 | 90.2 |
| Conoco Phillips | 11.4 | 11.3 | 57.9 | 86.7 |
| Eni | 9.6 | 16.1 | 65.7 | 69.8 |

Source: Company annual reports.

Refining and Marketing In oil, downstream businesses included refining and the wholesale and retail marketing and distribution of refined oil products. The main refined products in order of importance were: gasoline, diesel fuel, aviation fuel, heating oil, liquefied petroleum gas (LPG), and petrochemical feedstocks (e.g., naphtha). As already noted, downstream has been less profitable than upstream: in their refining and marketing businesses, the majors typically earned rates of return that barely covered their costs of capital. As a result, all the majors divested refining

and marketing assets and concentrated their capital expenditures on their upstream businesses (Table 7).

The main problem in refining was excess capacity. Demand for refined products was declining in Europe and North America and new refining capacity was coming on stream in the Middle East and Asia as a result of downstream investments by NOCs. In retailing, profitability was also dismal due to excess capacity and new entry by supermarket chains into gasoline distribution (especially in France and the UK).

Downstream Gas and Power Among the petroleum majors, Eni was unusual in being established on natural gas rather than oil. For most of the majors, oil had been their dominant interest and, as a result, few had pursued the same strategy of vertical integration that they had in oil. In most countries, gas distribution had been undertaken by state-owned or state-regulated utilities. The rising demand for natural gas caused all the majors to reorient their upstream activities toward gas, while privatization and deregulation of downstream gas gave them the opportunity to increase their presence in gas marketing and distribution. Similarly with the deregulation of electricity markets: the petroleum majors could enter power generation directly or supply natural gas to independent power producers.

However, the downstream markets for gas and power did not offer the petroleum rates of return comparable with their upstream businesses.

Chemicals The petrochemical sector displayed many of the same structural features as oil refining: capital-intensive processes producing commodity products, many competitors, and a continual tendency for excess capacity (much of it resulting from new investment by Asian and Middle Eastern producers) to drive down prices and margins. Competitive advantage in chemicals depended upon scale economies, technological advantages (such as patented products and processes), and low costs of feedstock. Among the oil and gas majors there were two distinct views about chemicals. Some, like Eni, saw chemicals as a fundamentally unattractive industry and believed that chemical plants were better run by chemical companies. Others (including ExxonMobil, Shell, and Total) viewed chemicals as part of their core business and believed that integration between refining and petrochemicals offered them a cost advantage.

The Outlook for Eni in 2012

Two decades of steady development under three CEOs—Bernabè, Mincato, and Scaroni—had transformed Eni from an inefficient, state-owned conglomerate into a highly profitable, international energy company with a strong identity and clear strategic direction.

At the heart of Eni's strategy was its commitment to steady organic growth of its upstream business. The restoration of Eni's production in Libya and its huge gas discoveries off Mozambique, underpinned Scaroni's confidence in this strategy. The cornerstones of Eni's upstream strategy would be its commitment to close, collaborative relationships with the governments and NOCs of producer countries and its own technical excellence. With regard to the latter, Eni's close relationship with the oilfield services company Saipem (in which it held a 42% equity stake) provided it

with in-house technical capabilities that other oil majors could not match. Eni had continued to develop its technical and operating capabilities because of its preference for operating its joint venture oil and gas fields. To the extent that producer governments were interested in the transfer of technical expertise to their own national oil companies, Eni believed that its technical strengths would make it a preferred partner for producer countries. Technical strengths also allowed Eni to increasingly focus its attention on large (and typically technically complex) oil and gas fields.

Saipem's technical capabilities were also a key element in Eni's vertically integrated gas strategy. Eni's trans-Mediterranean pipelines had been critical in allowing Eni to develop its gas resources in North Africa and maintain its dominance of the Italian gas market. As it was increasingly forced to look elsewhere to expand its gas sales, pipelines would continue to play a role. As a result of the Blue Stream pipeline, Turkey had become a major gas market for Eni.

Downstream oil and chemicals represented challenges for Eni. Both were low-profit industries. However, in refining and marketing, Eni held a strong strategic position: with over 30% of the Italian market Eni was well positioned to exploit economies of scale and economies of distributing density.

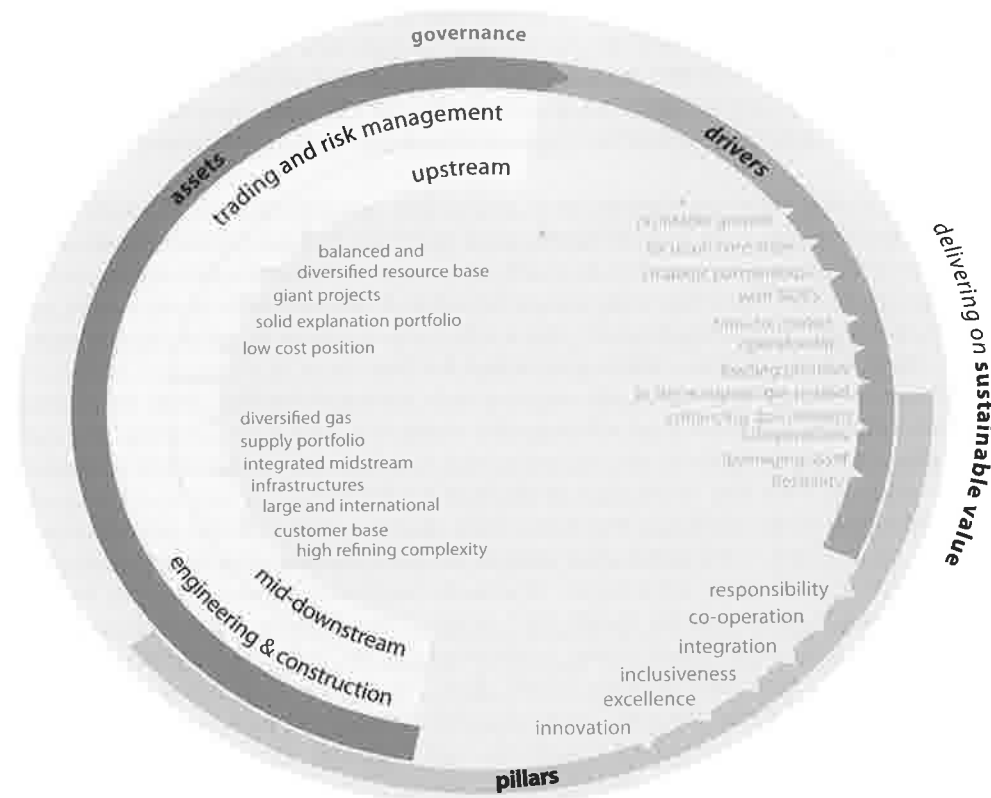
The situation in chemicals was more difficult. Not only was the petrochemical sector an intensely competitive, low-margin business but also Eni lacked scale and distinctive technological advantages. Chemicals had been a loss maker for Eni for many years. However, at his March 2012 strategy presentation, Scaroni announced a change of strategy. After trying, unsuccessfully, to sell the business, Scaroni announced a turnaround strategy based upon "Regaining competitiveness within the chemicals business" through "refocusing the chemicals portfolio on added-value products," expansion outside of Europe through licensing, alliances, and joint ventures, and efficiency improvements to reduce costs. One element of the new strategy was an agreement with Novamont SpA to convert Eni's Porto Torres chemical plant into a bio-based chemical complex to produce bio-plastics, bio-lubricants, and bio-additives from vegetable raw materials.

Over time, Eni had become more explicit in articulating its strategy—especially in explaining how it was positioning itself within its markets to build competitive advantage based upon its distinctive assets and capabilities. In 2012, it presented an integrated view of its strategy, corporate governance, and business principles which it described as "Eni's Business Model" (Figure 6).²⁴ Key components of this model were:

- major elements of Eni's strategy in its different business areas e.g., its emphasis on "diversified supply portfolio" and "integrated midstream infrastructure" in its gas business;
- the "drivers" of its competitive advantage, including its emphasis on "profitable growth," "strategic partnerships with NOCs," and seeking "operatorship";
- the "pillars" which define its approach to doing business, such as "integration," "inclusiveness," and "innovation."

However, the successful implementation of this strategy would depend on several factors. The disruption that the Arab Spring had created for Eni was a clear indicator

FIGURE 6 Eni's business model



Source: Eni Fact Book, 2011, p. 11.

of the oil majors' vulnerability to political turmoil. Would Eni's efforts to build collaboration with the governments and petroleum companies of Russia and Venezuela fall victim to political uncertainties in these countries? Would the growing role of NOCs in the world petroleum industry mean that Eni, along with the other Western majors, would be reduced to an increasingly marginal role?

And would Eni be successful in persuading the investment community of the wisdom of its strategy? Despite its huge discoveries off Mozambique, Eni's market valuation still lagged several of its peers on the basis of conventional valuation ratios (Table 8).

Finally, fulfilling Eni's potential would require developing the coordination and responsiveness that it often talked about, but probably had yet to fully achieve. Despite Eni's transformation from a loose-knit holding company to a more tightly integrated divisional corporation, it still faced internal challenges to the successful execution of its strategy. Many insiders doubted whether Eni had yet established the degree of close, flexible coordination across organizational boundaries that would be needed for its strategic partnerships with governments and NOCs, its time-to-market capabilities, and asset flexibility to really work.

TABLE 8 Valuation multiples for petroleum majors, May 2011

| | Price/earnings ratio | Price/book ratio | Price/sales ratio | Price/cash flow |
|-----------------------|----------------------|------------------|-------------------|-----------------|
| Exxon Mobil Corp. | 10.10 | 2.48 | 0.91 | 7.1 |
| British Petroleum PLC | 5.16 | 1.07 | 0.33 | 3.6 |
| ChevronTexaco Corp. | 7.48 | 1.59 | 0.79 | 5.1 |
| Total SA | 6.82 | 2.26 | 0.32 | 4.0 |
| Royal Dutch Shell PLC | 6.90 | 1.22 | 0.43 | 4.9 |
| Eni SpA | 7.56 | 1.14 | 0.52 | 4.0 |
| Repsol YPF SA | 7.30 | 0.68 | 0.26 | 5.2 |
| ConocoPhillips | 5.90 | 1.02 | 0.31 | 3.4 |

Sources: Hoover's Online; Financial Times.

A final internal challenge was internationalization. For all Eni's emphasis on international growth, it remained a very Italian company. Its board of directors and its 13-person top management team were both comprised exclusively of Italians.

Appendix 1: Eni SpA: Financial Highlights, 2006–2011

| (\$billion except where indicated) | 2008 | 2009 | 2010 | 2011 |
|---|-------|-------|-------|-------|
| Exchange rate (\$/€) | 1.473 | 1.394 | 1.326 | 1.393 |
| Net sales from operations | 159.3 | 116.0 | 130.6 | 152.7 |
| Operating profit | 27.5 | 16.8 | 21.4 | 24.3 |
| Adjusted operating profit | 32.1 | 18.3 | 22.9 | 25.0 |
| Net profit | 13.0 | 6.1 | 8.4 | 9.6 |
| Adjusted net profit | 15.0 | 7.3 | 9.1 | 9.7 |
| Net cash from operating activities | 32.1 | 15.5 | 19.5 | 20.0 |
| Capital expenditures | 21.4 | 19.1 | 18.4 | 18.7 |
| Investments | 6.3 | 3.2 | 0.5 | 0.5 |
| Cash dividends | 7.2 | 5.8 | 4.8 | 5.1 |
| R & D expenditures | 0.32 | 0.29 | 0.29 | 0.27 |
| Total assets at year-end | 171.7 | 168.8 | 174.8 | 199.1 |
| Shareholders' equity (including minority interests) | 71.5 | 69.8 | 73.9 | 84.1 |
| Net borrowings | 27.1 | 32.1 | 34.6 | 39.0 |
| Net capital employed | 98.5 | 101.9 | 108.5 | 123.2 |
| Share price at year end | 24.66 | 24.8 | 21.6 | 22.3 |
| Market capitalization (\$billion) | 89.26 | 89.9 | 78.5 | 80.8 |
| ROACE | 15.7% | 9.2% | 10.7% | 9.9% |

Appendix 2: Eni's Operating Performance, 2004–2011

| | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|-------|-------|-------|-------|--------|--------|-------|-------|
| Proved hydrocarbon reserves (m BOE) | 7218 | 6837 | 6436 | 6370 | 6600 | 6571 | 6843 | 7086 |
| Reserve life index (years) | 12.1 | 10.8 | 10.0 | 10.0 | 10.0 | 10.2 | 10.3 | 12.3 |
| Hydrocarbon production (k BOE/day) | 1624 | 1737 | 1770 | 1736 | 1797 | 1769 | 1815 | 1581 |
| Worldwide gas sales (bn m ³) | 87.03 | 94.21 | 98.10 | 98.96 | 104.23 | 103.72 | 97.06 | 96.76 |
| Electricity sold (TWH) | 16.95 | 27.56 | 31.03 | 33.19 | 29.93 | 33.96 | 39.54 | 40.28 |
| Refinery throughput (m tonnes) | 37.69 | 38.79 | 38.04 | 37.15 | 35.84 | 34.55 | 34.8 | 31.96 |
| Refinery capacity (k barrels/day) | 504 | 524 | 534 | 544 | 544 | 747 | 757 | 767 |
| Sales of refined products (m tonnes) | 53.54 | 51.63 | 51.13 | 50.14 | 50.68 | | | |
| Retail sales (m tonnes) | 14.40 | 13.72 | 12.48 | 12.65 | 12.67 | 12.02 | 11.73 | 11.37 |
| Number of service stations | 9140 | 6282 | 6294 | 6441 | 5956 | 5986 | 6167 | 6287 |
| Av. service station throughput (k liters/year) | 1970 | 1926 | 2470 | 2486 | 2502 | 2477 | 2353 | 2206 |
| Engineering and services: orders acquired (€m) | 5784 | 8395 | 11172 | 11845 | 13860 | 9917 | 12935 | 12505 |
| Order backlog (€m) | 8521 | 10122 | 13191 | 15390 | 19105 | 18730 | 20505 | 20417 |

Notes:

BOE: barrels of oil equivalent.

m: million.

k: thousand.

bn: billion.

TWH: terawatt-hour.

bn m³: billion cubic meters.

Appendix 3: Top-40 Oil and Gas Companies among the Forbes Global 2000, April 2011

| Forbes' Rank | Company | Country | Sales (\$billion) | Profits (\$billion) | Assets (\$billion) | Market value (\$billion) |
|--------------|-------------------------------|--------------|-------------------|---------------------|--------------------|--------------------------|
| 1 | ExxonMobil | US | 433.5 | 41.1 | 331.1 | 407.4 |
| 4 | Royal Dutch Shell | Netherlands | 470.2 | 30.9 | 340.5 | 227.6 |
| 7 | PetroChina | China | 310.1 | 20.6 | 304.7 | 294.7 |
| 10 | Petrobras | Brazil | 145.9 | 20.1 | 319.4 | 180.0 |
| 11 | BP | UK | 375.5 | 25.7 | 292.5 | 147.4 |
| 12 | Chevron | US | 236.6 | 26.9 | 209.5 | 218.0 |
| 15 | Gazprom | Russia | 117.6 | 31.7 | 302.6 | 159.8 |
| 18 | Total | France | 216.2 | 15.9 | 213.0 | 132.4 |
| 24 | Sinopec-China Petroleum | China | 391.4 | 11.6 | 179.8 | 104.2 |
| 27 | ConocoPhillips | US | 230.9 | 12.4 | 153.2 | 98.8 |
| 29 | Eni | Italy | 143.2 | 8.9 | 178.7 | 97.6 |
| 41 | Statoil | Norway | 111.6 | 13.1 | 127.8 | 89.0 |
| 47 | GDF Suez | France | 117.5 | 5.2 | 275.2 | 58.3 |
| 68 | Lukoil | Russia | 111.4 | 10.4 | 90.6 | 55.3 |
| 71 | Rosneft | Russia | 59.2 | 11.3 | 106.0 | 79.6 |
| 73 | EDF | France | 84.6 | 3.9 | 297.5 | 45.7 |
| 124 | Reliance Industries | India | 59.5 | 4.3 | 69.0 | 50.4 |
| 126 | China Shenhua Energy | China | 33.1 | 7.3 | 63.6 | 84.2 |
| 128 | Schlumberger | Netherlands | 39.5 | 5.0 | 55.2 | 102.4 |
| 134 | Suncor Energy Inc. | Canada | 39.1 | 4.2 | 73.4 | 51.8 |
| 137 | Ecopetrol | Colombia | 35.6 | 8.4 | 47.6 | 119.7 |
| 140 | Repsol YPF | Spain | 72.8 | 2.8 | 88.8 | 30.1 |
| 145 | Occidental Petroleum | US | 24.1 | 6.8 | 60.0 | 81.6 |
| 146 | Conic | Hong Kong | 27.1 | 8.0 | 49.7 | 96.3 |
| 149 | TNK-BP Holding | Russia | 60.2 | 9.0 | 37.1 | 51.6 |
| 166 | BG Group | UK | 20.3 | 4.1 | 60.8 | 83.2 |
| 167 | PTT PCL | Thailand | 76.9 | 3.3 | 43.8 | 32.9 |
| 171 | Oil & Natural Gas | India | 26.3 | 5.0 | 51.0 | 46.6 |
| 176 | JX Holdings | US | 115.9 | 3.8 | 74.1 | 15.8 |
| 198 | Apache | US | 16.9 | 4.6 | 52.1 | 41.9 |
| 200 | Surgutneftegas | Russia | 20.3 | 4.3 | 46.6 | 39.9 |
| 237 | Valero Energy | US | 126 | 2.1 | 42.8 | 15.5 |
| 268 | Hess | US | 37.9 | 1.7 | 39.1 | 21.3 |
| 271 | Canadian Natural Resources | Canada | 13.5 | 2.6 | 46.4 | 38.8 |
| 273 | Gas Natural Group | Spain | 27.3 | 1.7 | 59.1 | 16.5 |
| 275 | NextEra Energy | US | 15.3 | 1.9 | 57.2 | 25.0 |
| 276 | Duke Energy | US | 14.5 | 1.7 | 62.5 | 28.1 |
| 279 | Husky Energy | Canada | 22.9 | 2.2 | 31.8 | 25.1 |
| 283 | Sasol | South Africa | 21.0 | 2.9 | 26.1 | 32.2 |
| 285 | Indian Oil | India | 63.7 | 1.8 | 43.4 | 13.2 |

Notes

1. We refer throughout the case to "Eni." For most of its history, the company's full name was Ente Nazionale Idrocarburi but it was known by the acronym ENI. In August 1992, the company's name was changed to Eni SpA.
2. Recognizing the strategic importance of oil, other European governments created national oil companies: the British government had purchased a controlling interest in BP in 1914; France established the Compagnie Française des Pétroles (Total) in 1924.
3. D. Yergin, *The Prize*, Simon & Shuster, New York, 1992, p. 23.
4. D. Yergin, *The Prize*, Simon & Shuster, New York, 1992, p. 23.
5. Section sourced from company report, "L'Eni di Fronte a un Bivio," Eni SpA, 2002.
6. D. Votaw, *The Six-Legged Dog: Mattei and ENI: A Study in Power* (University of California Press, Berkeley, CA, 1964), p. 71.
7. "L'Eni di Fronte a un Bivio," Eni SpA, 2002, p. 5.
8. *Franco Bernabè at Eni* (Harvard Business School Case 9-498-034, April 7, 1998).
9. Chairman Gabriele Cagliariari later committed suicide in prison.
10. "L'Eni di Fronte a un Bivio," Eni SpA, 2002, p. 11.
11. "Eni Savors the Taste of Freedom," *Financial Times*, June 9, 1994.
12. ENI SpA, Securities and Exchange Commission, Form 20F, 1996.
13. Securities and Exchange Commission, *ENI SpA, 20-F for 1996*, p. 3.
14. "Letter to Shareholders," Eni, Annual Report, 1999, pp. 4–5.
15. "Italy: The Real Sick Man of Europe," *Economist*, May 19, 2005.
16. "Eni's New Chief Intends to Become a Big Player," *Financial Times*, September 22, 2005.
17. "Rome's Colonial Past Key to Libya's Eni Stake," *Financial Times*, December 9, 2008.
18. See <http://oilandglory.com/labels/ENI.html>, accessed October 19, 2009.
19. "How Italy's ENI Vastly Boosted Oil Output," *Business Week*, April 20, 2009.
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