



# Working Together for Responsible Energy



CSR Report 2012  
Business – Society – Environment

4

major exploration discoveries in 2012



€29.4

billion in purchases in 2012



-10%

greenhouse gas emissions at Total (operated sites) between 2010 and 2012



## CSR\* Report 2012

Total's mission is to responsibly enable as many people as possible to access energy in a world of constantly growing demand. In practical terms, this means making corporate social responsibility an integral part of our operational and business excellence goals.

This year, we have embarked on the path to an integrated CSR\* report. We have selected certain integrated performance indicators that are presented throughout the report.

\* Corporate Social Responsibility

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### Integrated Performance

These examples and indicators illustrate how integrating CSR into our business strategy drives performance.



### See you on our Web site

Learn more via these links.



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**Our Stakeholders Tell Us What They Think**

Since 2009, our CSR report has given us the opportunity to answer questions from stakeholders. This year, several of them accepted an invitation to come back and tell us what they think about how we deal with sustainable development issues. The stakeholder panel met on March 26, 2013 and their feedback is presented on pages 38 and 39.



**Cover** | Young girl, Almaty, Kazakhstan.

**Christophe de Margerie,  
Chairman & Chief Executive Officer of Total**

# “Without access to energy, there is no development.”



### Looking back, what's your take on 2012 for Total?

**Christophe de Margerie:** 2012 was a year of transition characterized by contrasting situations in different parts of the globe. We had to address the challenges emerging today to prepare for tomorrow, while also weathering the economic crisis in Europe and expanding in fast-growing markets. Our aim was to ensure long-term profitability through increased production synergies. That's why we brought some of our activities closer together — strengthening ties between Exploration & Production and our midstream gas operations, and combining our refining and petrochemical businesses. We also revamped our marketing operations to more effectively meet our customers' needs.

But a review of 2012 would not be complete without mentioning the bad along with the good. First, the accidents in which 14 Total and contractor employees lost their lives. And then, two major accidents: the gas leak on the Elgin platform in the United Kingdom and the drilling incident on the Ibewa gas field in Nigeria. So assessing and managing risks and strengthening our safety culture in all of our processes are always our top priorities.

### How do you see the energy market evolving in the coming years?

**C. de M.:** Despite a slowdown in global growth, oil demand was up again in 2012, rising 1%. The price of Brent averaged more than \$110 and will very probably remain relatively high. Over the next 15 years, the oil industry as a whole will have to add production capacity of 45 million barrels a day — around half of the world's current production capacity — to offset the natural decline in output from today's fields and meet growing demand. This new capacity will come from a variety of sources, including enhanced oil recovery, the deep offshore, Iraq, oil sands and shale oil development, and fields yet to be discovered. Total is going to play an active role in bringing new oil and gas production on stream. In fact, we're projecting a production potential of 3 billion barrels of oil equivalent per day in 2017.

### You've mostly talked about oil so far. What about gas?

**C. de M.:** Natural gas, particularly liquefied natural gas (LNG), is a major growth driver for Total. Gas offers enormous advantages. For instance, resources are estimated at 130 years of global consumption at current production rates and it emits fewer greenhouse gases than other fossil fuels, for a smaller carbon footprint. We therefore believe that it will rank second in the energy mix in 2030. Total is implementing a number of projects to satisfy growing demand for LNG. Our goal is to lift our production capacity from 13 million metric tons in 2012 to around 17 million metric tons in 2017.

### Would you say that Total is stepping up its involvement in new energies?

**C. de M.:** Definitely. Renewable energies will undoubtedly play a part in tomorrow's energy mix, because they provide an additional source of energy that will be critical in satisfying demand and tackling climate change. At Total, we like to plan ahead. In fact, our R&D program extends beyond 2035. But we're already very involved in solar energy, particularly photovoltaic. Thanks to our SunPower affiliate, we are one of the top three solar operators in the world as measured by revenue. And we're also investing in biotech R&D to enable the production of advanced biofuels from so-called second-generation biomass.

### How can we balance an energy mix focused heavily on fossil fuels with the fight against climate change?

**C. de M.:** For us, it's both a challenge and a responsibility. And we're certainly not standing on the sidelines. On the contrary, we're meeting the objectives we set ourselves several years ago, to reduce the flaring of gas associated with our oil production and enhance the energy efficiency of our facilities and our products and services. Our goal for 2015 is to reduce our



**“We must be able to provide the world with energy that is affordable, suited to future applications, and capable of helping us meet environmental challenges more effectively.”**



greenhouse gas emissions by around 15% compared with 2008 levels. We're also preparing for what is called the “carbon constraint.” For several years now, when calculating the cost of our projects, we have included a carbon cost of €25 per metric ton emitted. It is unfortunate — and worrying — that international negotiations on climate change have now reached a stalemate. After seeing the extent of the changes that have occurred, the world's leaders cannot simply sit back and do nothing. They must act now to remedy the situation. They could start by creating a global mechanism and stable framework for carbon prices. This would at least give businesses the visibility we need.

### Total is involved in programs that address energy and fuel poverty. Is this really part of your job description?

**C. de M.:** We can't call ourselves a global energy company and simply ignore the fact that two-thirds of the world's population has no access to modern forms of energy. We strongly support the fight against energy and fuel poverty; Total has been involved in this since 2010, both in OECD countries and in the developing world. Our Total Access to Energy program provides solutions that are tailored to each situation. In OECD countries, we identify households experiencing fuel poverty and help them carry out home renovation work to reduce their energy bills. And for developing nations, we made a commitment at the Rio+20 Conference to provide reliable, affordable lighting to five million people by 2015 thanks to our Awango by Total solar lamps. The lineup has already been rolled out in Burkina Faso, Cambodia, Cameroon, Haiti, Indonesia, Kenya, the Republic of the Congo and Senegal. I believe that it is part of our role to take on board society's difficulties and meet its aspirations at this time of significant change. The same can be said in relation to our commitments to security and human rights. I'm very proud of our record in these areas and more than willing to accept the costs involved in carrying out these initiatives. Because they are an integral part of our corporate social responsibility process, which is deeply embedded in Total's DNA. —



**“Renewable energies will be critical in satisfying demand and tackling climate change.”**



**“Corporate social responsibility is deeply embedded in Total's DNA.”**

# A New Global Energy Map

Globalized, highly competitive and fast-changing, the energy industry is being directly impacted by a myriad of political, economic and technological factors that are driving a sweeping transformation of global energy flows.

## A Shifting Environment

In 2012, Total's business environment was shaped by uncertainty arising from a number of events, including the euro zone crisis, the slowdown in global economic growth, political unrest and natural disasters. Taken in combination with stakeholders who are increasingly vocal when it comes to key issues affecting society, these events and trends are spurring questions — especially in OECD countries — about financial regulation and whether energy models should change.

### A Challenging Economy

Both consumer spending and growth slowed in 2012, in response to the sovereign debt crisis and market concerns about whether the euro zone will hold. Since the 2008 financial crisis, most OECD countries have sought tighter regulation and governance, in a world seen as increasingly interdependent and volatile. A number of major financial regulations have been adopted or are under discussion, both in the United States with the July 2010 Dodd-Frank Act and in the European Union with the Capital Requirements Directive (CRD IV), the Markets in Financial Instruments Directive (MiFID) and the Accounting Directive, among others.

### Political Instability Lingers in Certain Regions

The residual effects of political crises in the Middle East, the uprising in Syria and the terrorist groups moving around the Sahara region — witness the Mali crisis — are feeding persistent tensions that raise the threat level for the people and assets of foreign companies operating there.

### A Need for Global Governance

At the same time, higher energy prices, the recession, discussions on reducing greenhouse gas emissions, and natural and industrial disasters are prompting many countries to rethink their energy mix. Although there is no real international cooperation on the issue, consideration is often being given to the role that renewable energies in particular can play, as the solar industry tries to ride out the slump. This is the case in several European countries.

## Changing Production Balances

### There is no shortage of resources, but they may no longer come from the traditional regions.

According to the International Energy Agency, the shale oil boom will make **the United States the world's leading oil producer in 2017.**

**And in a change in direction,** oil and gas exports from Africa and the Middle East to Asia will increase.



### A more diversified energy mix is part of the transition.

We believe that natural gas will become the second biggest source of energy in 2030, driven by **abundant unconventional resources.** Natural gas also emits less carbon than other fossil fuels.

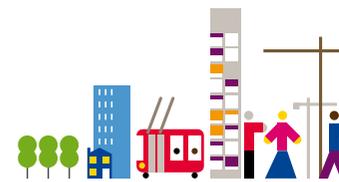
And because **renewable energies are maturing,** they will account for 18% of the energy mix at that time.



## Growing Demand Is Unevenly Distributed

### Despite the economic slowdown, demand continues to grow, led by emerging economies.

The IEA is projecting that **to 2035** energy consumption will grow by: **35%** worldwide. **65%** in non-OECD countries.



### Demand is tilting toward safer and/or cleaner energies.

**The Fukushima disaster** has spurred some countries, such as Germany, to exit nuclear power and restart their coal-fired plants.

**The intermittent nature of renewable energies** requires energy storage solutions.



## Total, a Global Leader

### Total's Ranking Among Private Sector Oil and Gas Companies

Market Capitalization at December 31, 2012 (\$ billion)

ExxonMobil	395
Shell	223
Chevron	212
BP	133
Total	123

Oil and Gas Production in 2012 (thousand barrels of oil equivalent per day)

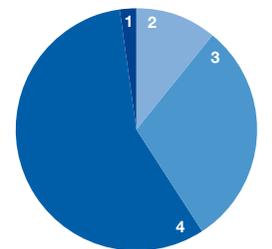
ExxonMobil	4,239
BP	3,331
Shell	3,262
Chevron	2,610
Total	2,300

### Global Production

(2011 figures)

Total ranks fifth among international oil companies, but only accounts for 2% of global oil and gas production — the overwhelming majority of output is controlled by national companies.

- 1 | Total
- 2 | Other international oil companies
- 3 | Independents
- 4 | National oil companies



1  
**Energy Is Vital and Drives Progress**  
**Challenge: Make energy accessible to as many people as possible**

**Without access to energy, there is no economic development.**

But nearly two-thirds of people today do not have access to modern forms of energy.



**1.3 billion**

people worldwide do not have access to energy.  
 (Source: IEA)

**\$18 billion**

spent each year by the bottom of the pyramid on lighting and on charging small devices.  
 (Source: IFC)

**Total Access to Energy focuses on:**

- Photovoltaic solar energy in non-OECD countries.
- Local use of associated gas.
- Alleviating fuel poverty in OECD countries.



2  
**Energy Is a Precious Resource**  
**Challenge: Using energy wisely**

**As a responsible corporate citizen, we must manage the energy performance of our production base.**

We have pledged to enhance the energy efficiency of our facilities by 1.5% a year. Our main drivers are improved plant design, operational excellence and R&D.



**Narrowing the efficiency gap between primary energy and its end use.**

For example, gas offers an efficiency of 80% when used to heat water, versus 30% for electricity. To address this, our Eco-Déclic solutions for the residential sector help people choose the energy best suited to their needs.



**Recommending innovative solutions to our customers.**

The Total Ecosolutions program included 37 eco-efficient products and services at end-2012. They offer a significantly reduced environmental footprint — lower energy and fuel use, for example — compared to the market standard.

3  
**Total, Facilitating the Energy Transition**

**All energy resources will be called on to meet demand led by emerging economies and the BRICS\* countries.**

Only by being profitable can Total pave the way for the energy mix of the future, factoring in such challenges as access to resources, climate change, environmental protection and geopolitical considerations. That will entail significant R&D.

\*Brazil, Russia, India, China, South Africa

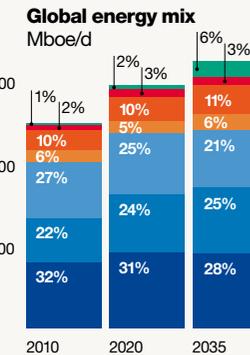
**65%**

growth in energy demand in emerging economies by 2035.  
 (Source: IEA)



**The energy mix is changing, a process known as the energy transition.**

- Solar, wind power, other
- Hydropower
- Biomass
- Nuclear
- Coal
- Natural Gas
- Oil



(Source: Total)

**This gradual process will depend on four key factors:**

- The physical availability of energy sources.
- Their financial competitiveness.
- The technical maturity of production and use.
- Their social acceptability.



**To help meet the needs of the planet's potential 8.6 billion people in 2035, Total must:**

**Diversify the energy mix.**

It's not a question of simply replacing one energy with another, but of investing to produce a diversified energy mix for today and tomorrow.



**Continue to fulfill our role as an oil and gas producer, to supply markets.**

Production and consumption must factor in environmental requirements and optimize the use of resources.



**Advance the renewable energy supply.**

**Total has made SunPower the cornerstone of our solar energy activities.**

The company designs, manufactures and installs high-performance solar panels that have a conversion efficiency of 24%, versus an average of 16 to 17% for competitors.

**Total is exploring a number of biochemical pathways to convert biomass**

into various molecules that can be used for transportation fuels and chemicals.

# CSR Embedded in Our Strategy

Interview with **Manoelle Lepoutre, Executive Vice President, Sustainable Development & Environment**

## Given that Total's operations are fundamentally incompatible with environmental protection, what are your ambitions in this area?

**Manoelle Lepoutre:** We should stop pitting industrial and financial performance against environmental performance. People have to start looking at the bigger picture. The fact is, social and environmental factors must be taken into account in the quest for economic development. That's why we have embarked on the path to an integrated CSR report this year. Our operations relate directly to our mission, which is to give people around the world access to energy so that they can meet their food, health care, heating, transportation and other essential needs. We know that energy production is an industrial activity with unavoidable impacts on society and the environment, and we work hard to continuously assess, reduce, remedy and offset its social and environmental footprint. Because our industrial processes are complex and inherently risky, we have very high standards in terms of risk management, preparedness and response to emergency situations, such as spills. All of our environmental initiatives are part of a continuous improvement process in which we set specific objectives and make sure we allocate the resources to achieve them. I should add that Total intends to be a key player in the energy transition process. Our teams are actively working in this area, investing in renewable energies, particularly solar and biotech.

## Total's healthy profits are still met with general disapproval and even outright condemnation in France.

**M. L.:** Well, the energy transition we were just talking about is going to be a slow process, requiring significant technological innovation and substantial investment. So Total's financial solidity is actually quite reassuring; it means we'll be able to contribute to progress in this area. Because it's not a question of simply replacing one energy with another. We need to produce a variety of energies suited to different applications and make a gradual transition to a lower carbon energy mix.



**“People need to start looking at the bigger picture. The fact is, social and environmental factors must be taken into account in all of Total's industrial and business processes.”**



## Main Objectives

Main Indicators	Main Objectives	2012 Performance	Our Comments
<b>Safety</b>			
Total recordable injury rate (TRIR)	Less than 2 in 2013	1.8 A 16.5% improvement from 2011	● Exceeded objective
<b>Social</b>			
Non-French senior executives	30% in 2015	25%	● On course to achieve the objective
Women senior executives	18% in 2015	16%	
Employees entitled to permanent and temporary disability coverage	92% in 2012	86%	● Scope broadened

I'd also like to point out an obvious fact, but one worth repeating: a business needs to be profitable to be able to reinvest, particularly in R&D. And in my understanding, a company's long-term financial viability is, in itself, one of the challenges of sustainable development. Once again, that doesn't mean we can ignore the impact our operations have on society and the environment. In fact, it's my job to ensure that social and environmental factors are integrated into all of Total's industrial and business processes. And we're making measurable progress. We've set a multitude of social and environmental objectives, such as improving our energy efficiency by 1.5% a year to 2017, that can be tracked by dedicated indicators.



**“Our commitment to sustainable development is a condition of our social license to operate and our long-term viability.”**

## Isn't sustainable development just a way of buying the company a better image?

**M. L.:** It's not a question of image, but rather of quality and excellence. It's also about fulfilling our responsibilities to employees, suppliers, neighboring communities and host countries. To achieve this, stakeholder consultation, dialogue and engagement are essential. Our commitment to sustainable development is a condition of our social license to operate and also, increasingly, a competitive advantage. Whichever way you look at it, sustainable development is critical to our long-term viability and therefore our capacity to create value wherever we do business: by generating direct and indirect jobs, by stimulating social and economic development, and by facilitating access to energy. In short, Total's future depends on our ability to balance social engagement with business objectives. —



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	Ongoing Objectives	2012 Performance	Our Comments	Objectives Approved by the Executive Committee <sup>5</sup>
<b>Environment</b>				
<b>Natural Resources</b>				
<b>Gas flaring</b>	Cut by 50% between 2005 and 2014	Down 28% from 2005	● Flaring related to the start-up of Usan slowed our progress	Objective maintained
<b>Energy efficiency</b>				
— E&P	10% improvement in 2012 versus 2007	6% improvement <sup>1</sup>	● 2012 performance down due to production disruptions	} 1.5% a year improvement in Total's overall energy efficiency between 2012 and 2017
— Petrochemicals	10% improvement in 2012 <sup>1</sup>	2% improvement <sup>1</sup>	● Objective partially met	
— Refining	5% improvement in 2012 <sup>1</sup>	1% decrease <sup>1</sup>	● Objective not achieved, due in part to underutilization of industrial capacity	
<b>Across-the-Board Challenges</b>				
<b>Greenhouse Gases</b>	Reduce greenhouse gas emissions by 15% between 2008 and 2015	Down 19% from 2008	● Attributable to a sharp drop in flaring in 2011	Objective maintained
<b>Eco-Innovation</b>	—	—	—	50 products in the Total Ecosolutions lineup in 2015
<b>Biodiversity</b>	—	—	—	Have a Biodiversity Action Plan at all industrial sites <sup>2</sup> in IUCN I to IV or Ramsar protected areas in 2014
<b>Emissions, Discharges and Releases</b>				
<b>Air (SO<sub>2</sub> emissions)</b>	—	—	—	Reduce our SO <sub>2</sub> emissions by 20% between 2012 and 2017
<b>Water (hydrocarbon discharges to water by E&amp;P)</b>				
— Offshore	< 30 mg/l	28 mg/l	● Objective achieved	Reduce the hydrocarbon content (expressed in tons) of our onshore and inshore discharges by 40% between 2011 and 2017
— Inshore	< 10 mg/l	18 mg/l	● Capital expenditure planned for an initial decrease in 2014 Objectives set for 2017	
<b>ISO 14001 Management Systems</b>	100% of environmentally sensitive sites <sup>3</sup> certified	98%	● Floods in the Niger Delta resulted in an audit being postponed	All production sites <sup>4</sup> certified by 2017

1. Versus 2007. 2. Excluding exploration wells, seismic data acquisition, marketing and storage. 3. We have 60 environmentally sensitive sites that account for 90% of our greenhouse gas, nitrogen oxide (NOx) and sulfur dioxide (SO<sub>2</sub>) emissions and water withdrawals. 4. More than 10,000 tons/year of carbon dioxide equivalent. 5. In early 2013.

# Our Shared Values and Business Principles

**Safety, risk management, corporate governance, ethics, security, human resources, social responsibility, environmental protection and innovation are all part of Total's DNA. Our commitments in these areas are critical to the acceptability and long-term viability of our operations. And we're using them to drive continuous improvement and create opportunities.**

## Safety and Risk Management

Our activities present a wide variety of risks related to production, refining and processing, transportation of flammable products, and the workplace. We must manage these risks, which have a high potential impact, as effectively as possible. In practical terms, this means complying with safety rules and guidelines, maintaining risk awareness, and ensuring strict supervision. Sharing these principles and the corresponding standards and actions across the organization is the best way to ensure the highest level of safety.

The 14 lives lost during 2012 and the accidents in the North Sea and Nigeria contrast starkly with our record safety performance in 2011 and taught us a lesson that will stay with us for a very long time.

These events remind us just how important it is to follow rules and procedures to the letter, particularly our Golden Rules. Based on return on experience, these 12 rules are critical to more effective risk management in our operations. They cover the situations most frequently encountered at our industrial facilities and in our transportation and marketing activities. According to our statistics, in more than 90% of severe and high-severity-potential accidents and near misses, at least one of these rules had been broken. To drive home the importance of vigilance, discipline and personal commitment, a major internal safety awareness campaign began in April 2013.

It is important that all employees look out for potential hazards and take the necessary action to warn others. Embodied by the slogan "Step Up, Step In," this was the theme of our fifth World Day for Safety



## Safety

**is more than a priority; it's a value shared by everyone at Total.**

Total Recordable Injury Rate (TRIR - number of accidents recorded per million hours worked):

2012	1.8
2011	2.2
2010	2.6

## Safety, a New Criterion for Bonuses, Incentives and Profit Sharing

The new agreement signed on June 29, 2012 related to our Oil France scope and three R&C companies: Total Raffinage Chimie, Total Raffinage France and Total Petrochemicals France.



01



02

Ⓢ ⓘ

01 | Workers on the Pazflor FPSO at the shipyard on Geoje Island, South Korea.

02 | Source of the Nile, Jinja, Uganda.

at Work on April 26, 2012. As part of our safety culture, employees are strongly encouraged to report anomalies and near misses. We see this information as an essential link in the continuous improvement cycle and an excellent indicator of how well the safety culture is anchored in each of our units. And because management plays a key role in nurturing this safety culture, we also organize HSE Leadership courses for our 300 most senior managers.

## Governance in Our Decision-Making Processes

Total's corporate governance process is based on a culture of consensus, with policies developed through collaboration and cascaded down to the local level via corporate guidelines and directives. An example is the pollution control guideline, which sets out the minimum requirements for developing, implementing, testing, updating and auditing contingency plans. As part of the initiatives undertaken to improve our governance processes, sustainable development criteria have been integrated into our purchasing policy. We call this approach sustainable purchasing. In practical terms, it means that after contractors are shortlisted on the basis of health and safety performance criteria, we then take into account business criteria, such as quality, cost and lead times. Our purchasing teams also consider environmental criteria, such as resource protection and waste management, and social criteria, such as respect for fundamental rights at work and balanced relationships with our suppliers.

## Ethics

Our ethics commitment is expressed in the business principles we apply in our relationships with all stakeholders in our host countries. Our Code of Conduct is deployed across our scope of operations. Total is present in more than 130 countries around the globe, including "high-risk" countries. As a result, we constantly strive to guarantee equal treatment for all of our employees worldwide; implement our Code of Conduct in our relationships with our partners; ensure that our suppliers and contractors uphold human rights; maintain dialogue with host communities; and support their social and economic development. After applying the Voluntary Principles on Security and Human Rights (VPSHR) for a number of years, Total became a participant in the process in March 2012. VPSHR encourages participating NGOs and businesses to develop constructive dialogue with both participating and non-participating governments, which have the primary responsibility to promote and protect human rights. The aim is to help extractive industry operators uphold human rights when using public or private security providers. Oil and gas development generates substantial revenues for producing countries, but often the amounts involved are not fully disclosed and the benefits are not equally distributed. Because financial transparency is crucial in this regard, we are an active member of the Extractive Industries Transparency Initiative (EITI), which promotes publication of payments to States to further good governance.

Ⓢ ⓘ To learn more: [www.voluntaryprinciples.org](http://www.voluntaryprinciples.org)  
[eti.org](http://eti.org)

## Protecting the Environment and Safeguarding Biodiversity

From the impact assessment carried out at the start of every project right through to the site reclamation phase, we implement a proactive policy of measuring, managing and mitigating our activities' environmental impact. One of our priorities is reducing greenhouse gas (GHG) emissions to combat climate change. To achieve this, we have set specific targets in such areas as reducing flaring, cutting emissions and enhancing energy efficiency. Every year, we track and publish the results. By 2015, these initiatives should have enabled us to reduce the greenhouse gas emissions generated by our operated activities by 15% compared to 2008 levels. →



**The Total Foundation** has been involved in the areas of community support, public health, culture and marine biodiversity for more than 20 years. It has an endowment of €50 million per five-year period.



**In 2012, more than 35,000 employees** completed our anti-corruption e-learning program.



## Our Emissions

**Gas flaring,** in million cu.m./day

10.8	10.0	14.5
2012	2011	2010

**Direct GHG emissions** from operated sites, in MTCO<sub>2</sub>e

47	46	52
2012	2011	2010

When our projects concern a sensitive environment, we also conduct specific assessments and actively engage in dialogue with stakeholders. TIGF's Artère de l'Adour pipeline project in southwestern France gave us the opportunity to implement our first biodiversity action plan, which was primarily based on assessments and stakeholder dialogue (see page 24).

**Corporate Social Responsibility and Local Content**

Creating shared value is the key to our corporate social responsibility commitment. That's why we dedicate resources to strengthening our local integration by establishing and maintaining dialogue with our stakeholders and contributing to their economic and social development. Wherever we operate, we invite local service providers to participate in the construction of our projects and our policy is to help them, when necessary, achieve the highest standards in quality, safety and working conditions. We also give our financial backing to programs that empower local communities to drive their own development.

To support our teams in the field, we provide a range of tools, including SRM+. This stakeholder relationship management tool helps to identify the views of external stakeholders, through meetings and discussions with local communities, and develop an action plan that meets their expectations and helps to strengthen our social license to operate.

**Diversity and Equal Opportunity**

Total created a Diversity Council in 2004 to ensure equal opportunity for all employees throughout their careers. Chaired by a member of the Executive Committee, the Council makes sure that we continue to carry out initiatives to promote gender equality, local development and a more international workforce, right up to the highest levels of management. More than 130 nationalities are represented in our workforce today and 72% of the managers hired in 2012 were non-French nationals. Promoting diversity goes hand in hand with fighting all forms of discrimination, including by hiring and retaining the disabled. —



⊖  
~130  
**SRM+ assessments**  
had been carried out at end-2012.

€316  
**million was spent on community development initiatives**  
in 2012, in such areas as employment, economic development, public health, education and access to energy.

€12  
**million in loans granted**  
to 360 small businesses since 2010 through Total Développement Régional.

Ⓜ  
[www.total.com](http://www.total.com)



**Percentage of women**

Permanent contract hires	2012	2011	2010
	32%	29%	31%
Total workforce	30%	30%	29%
	2012	2011	2010
Senior executives	16%	15%	13%
	2012	2011	2010

⊕  
**Some Examples of Our Guidance**

Charter/Code	Policy	Some Directives and Guidelines
<b>Ethics</b>		
<ul style="list-style-type: none"> <li>Code of Conduct</li> <li>Ethics Charter</li> <li>Financial Code of Ethics</li> </ul>	<ul style="list-style-type: none"> <li>Integrity Policy and Program</li> <li>Prevention of Violation of Competition Law and Compliance Program</li> <li>Prevention of Corruption and Compliance Program</li> </ul>	<ul style="list-style-type: none"> <li>Guidelines to Be Followed in Case of Fraud Incidents</li> <li>Anti-Corruption Compliance</li> </ul>
<b>Industrial Safety</b>		
<ul style="list-style-type: none"> <li>Safety Health Environment Quality Charter</li> </ul>		<ul style="list-style-type: none"> <li>HSE Management Systems</li> <li>Technological Risk Analysis</li> <li>Safety Critical Operations</li> </ul>
<b>Occupational Health &amp; Safety</b>		
<ul style="list-style-type: none"> <li>Safety Health Environment Quality Charter</li> </ul>	<ul style="list-style-type: none"> <li>Total Group Health Policy</li> </ul>	<ul style="list-style-type: none"> <li>Minimum Compliance Requirements for Products Offered for Sale</li> <li>Directive on Industrial Hygiene and Occupational Health</li> </ul>
<b>Environment</b>		
<ul style="list-style-type: none"> <li>Safety Health Environment Quality Charter</li> </ul>	<ul style="list-style-type: none"> <li>Biodiversity</li> <li>Soil and Site Remediation</li> </ul>	<ul style="list-style-type: none"> <li>Waste Management</li> <li>Preparedness for Response to Accidental Surface Water Pollution</li> <li>Energy Efficiency Improvements at Industrial Facilities</li> </ul>
<b>Social Business and Community Engagement</b>		
<ul style="list-style-type: none"> <li>Safety Health Environment Quality Charter</li> <li>Charter of Principles and Guidelines Regarding Indigenous and Tribal Peoples</li> </ul>	<ul style="list-style-type: none"> <li>Societal Policy</li> </ul>	<ul style="list-style-type: none"> <li>Societal Directive</li> </ul>
<b>Security</b>		
<ul style="list-style-type: none"> <li>Safety Health Environment Quality Charter</li> <li>Security Charter</li> </ul>	<ul style="list-style-type: none"> <li>Security Policy</li> </ul>	<ul style="list-style-type: none"> <li>Security Plan and Security Levels</li> <li>Voluntary Principles on Security and Human Rights</li> <li>Protection of Sites</li> </ul>

⊕  
**Our Inclusion in the Main Environmental, Social and Governance (ESG) Indexes**

<p><b>DJSI</b> Total has been continuously included in the DJSI World Index since 2004 and the DJSI Europe Index since 2005. These indexes are published by Swiss asset manager RobecoSAM.</p> 	<p><b>FTSE4Good</b> Total has been a constituent company of the FTSE4Good Index since 2001. The index is managed by global index provider FTSE Group.</p> 	<p><b>ASPI</b> Total has been continuously included in French rating agency Vigeo's ASPI Index since 2004.</p> 	<p><b>Oekom</b> In 2012, Total ranked second out of 26 companies — and was the top-ranked international oil company — in the energy industry analysis conducted by Oekom Research, a German sustainable investment rating agency. We achieved a rating of "B-" and "Prime Status" (recommended as a socially responsible investment).</p> 
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# Innovation

**Anticipating and adapting to change and taking advantage of new opportunities are critical to our long-term viability. That's why we nurture a culture of innovation. And each and every one of our R&D projects incorporates CSR.**

To facilitate technological, social and environmental innovation, we have chosen to introduce processes that stimulate innovative ideas and accelerate commercial scale-up, so that we can bring new solutions to market quickly. We also emphasize partnerships and information sharing to create win-win situations. This approach is applied to our processes, products, services and businesses.

## Process Innovation Driving Breakthroughs in the Upstream Segment

Because every site is different, we view each new Exploration & Production project as a prototype that should incorporate innovative technology. For instance, to improve the energy efficiency of production from the CLOV cluster in Angola, the oil and water will be separated on the seabed, not the platform. Environmental impact assessments are also integral components of our processes.

## Product and Service Innovation with Total Ecosolutions

Created for the benefit of both our customers and the environment, our internal Total Ecosolutions program has picked up momentum and now also serves as an innovation driver for our R&D and marketing teams. The program provides our customers with innovative solutions that deliver a better environmental performance than the market standard, helping them to reduce their energy use. In one example, the new Total Quartz Ineo First 0W30 fuel economy engine oil for cars reduces fuel consumption by an average 3.33%.

⊖ **€805**  
million spent  
on R&D at Total in 2012.

⊕ **Total Ecosolutions**  
**2015 objective: 50 labeled products and services**  
A total of 37 products and services from our various activities had been awarded the label at end-2012 and their sale during the year offset 740,000 metric tons equivalent of carbon dioxide emissions across their life cycle.



01 | Family using an Awango by Total solar lamp in Java, Indonesia.  
02 | Oil drums, Vietnam.

## Total Energy Ventures and Open Innovation

Total Energy Ventures supports the growth of companies with innovative technologies or business models working in areas that help meet the challenges associated with the energy transition and enable us to continuously improve our practices. We usually acquire minority interests in these start-ups, to accelerate their development and bring their innovations to commercial scale-up. One company supported in 2012 was NanoH<sub>2</sub>O, which has developed highly efficient membranes that improve seawater desalination efficiency and significantly reduce the associated energy costs (see photo). Another is LightSail Energy, which offers an energy storage technology that involves compressing air. It deploys a new thermodynamic concept that sharply enhances energy efficiency, lowering the cost of this type of technology.



In the same vein, in late 2011 we partnered with French railway operator SNCF and mobile telephone operator Orange to create Ecomobilité Ventures, Europe's first private equity fund dedicated to innovation in sustainable mobility. The fund announced in October 2012 that it had acquired its first three equity interests, in peer-to-peer car sharing platform OuiCar, the start-up that invented the electric ez-Wheel, and Move About, which offers an EV car sharing service for businesses.

## Business Innovation: Awango by Total, the Total Access to Energy Program's Commercial Brand

The Awango by Total lineup offers innovative, reliable solar solutions at affordable prices to make life easier for low-income, off-grid households. The products, which can be used for lighting and to charge mobile phones, come with a one- to two-year warranty and customer service. The distribution networks are adapted to each country — the solutions are being marketed through Total's service station networks, young reseller networks, and agricultural cooperatives. German development cooperation agency GIZ is providing assistance by measuring the program's social impact, educating communities about renewable energies, training the sales force and developing local recycling systems. —

## ⊕ Partnership with the French Environment and Energy Management Agency (ADEME)

In partnership with the French agency, we have undertaken to manage and finance an R&D program one of whose aims is to reduce the 28 million tons of oil equivalent per year of energy used across France's entire manufacturing sector by 20% between now and 2020. Another is to facilitate the emergence of reliable technologies in small and medium-sized businesses. Thirty-five projects have been financed since the program was launched.

## ⊕ The Awango by Total Solar Lineup

● 2011  
Project launched in four pilot countries: Cameroon, Indonesia, Kenya and the Republic of the Congo

**End-2011:**  
48,000 solar lamps and kits sold

● 2012  
Project deployed in four new countries: Burkina Faso, Cambodia, Haiti and Senegal

**November 2012:**  
Launch of the Awango by Total brand at the Lighting Africa Conference.

**End-2012:**  
168,000 solar lamps and kits sold

● 2013  
Deployment continues in six new countries, including Bangladesh, Nigeria and Uganda

● 2015  
"We're aiming to sell one million solar lamps by 2015, which will improve the living standards of around five million people."  
**Christophe de Margerie, Chairman & CEO of Total**

# Total Creates Value for Stakeholders

See CSR Analysts section on [www.total.com](http://www.total.com)



\*Consolidated scope.  
 \*\*Subject to approval by shareholders at the Annual Meeting.

# Exploration & Production

To keep up with growing energy demand, our teams are constantly exploring new areas, both onshore and offshore. And along the way, they tackle the latest technological challenges and address emerging issues related to safety, ethics, environmental protection and stakeholder relationships.



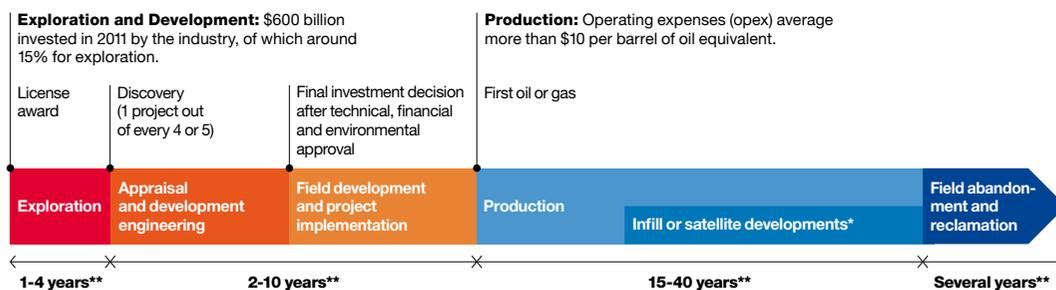
⊖

**~\$20<sub>B</sub>**  
invested in exploring and developing our fields in 2012.

Exploration budget  
**15%**  
increase per year since 2009, for a budget of €2.8 billion in 2013.



## Exploration and Production, Long-Term Activities



\*During operation, infill or satellite developments can enhance recovery rates. \*\*For information only.

### Oil and Gas Projects: New Developments

Oil and natural gas will continue to play a key role in the global energy mix; they are easy to store and transport and, for many applications, there are still no viable alternatives. So it is important that we produce sufficient quantities to satisfy demand and contain the increase in energy prices. That's why Total strives to get the most out of the available resources, while limiting the environmental impact of their development and constantly seeking greater value-added for our stakeholders. To achieve this, we are enhancing recovery from our fields, including the most mature, and stepping up our exploration activities.

### Unconventional Resources: Technology and Production

Tapping unconventional resources is one way of keeping up with energy demand and growing the world's oil and gas reserves. However, their production requires special precautions and innovative technology.

**Oil Sands** – A number of environmental issues need to be addressed, including the impact on water resources, greenhouse gas emissions, and land and ecosystem reclamation. For several years now, Total has been actively participating in collaborative research programs initiated by the Canadian oil sands industry, which spends more than CAD20 million each year on research. We are a founding member of Canada's Oil Sands Innovation Alliance (COSIA), an initiative launched in 2012 by 12 oil sands producers — now 14 — to accelerate the pace of improvement in the industry's environmental performance.

Ⓜ To learn more: [www.total.com](http://www.total.com) — [www.total-ep-canada.com](http://www.total-ep-canada.com)

**Shale Gas** – If exploration confirms the presence of this resource in Europe, we strongly believe that shale gas could one day play a part in the region's energy mix. Our R&D teams are working hard to develop suitable technological solutions to the environmental challenges associated with shale gas production. They include optimizing water management and reducing the land footprint of surface infrastructure. Together with local legislation, our Safety, Health, Environment and Quality (SHEQ) Charter and our Societal Policy provide a clear framework for our operations in all of the countries where we have shale gas interests, which include Argentina, Australia, Denmark and Poland.

Ⓜ To learn more: [www.total.com](http://www.total.com)

### A Challenging Year for Safety

We experienced two major accidents in 2012, on our Elgin and Ibewa fields. No one was hurt and they had no major impact on the environment.

**Elgin, offshore in the British North Sea** – On March 25, 2012, a gas leak was detected on the Elgin wellhead platform in the North Sea, around 240 kilometers east of Aberdeen. Total immediately initiated our emergency response plan, activated crisis management teams in Aberdeen and Paris, and shut in production on the Elgin and West Franklin fields. The 238 employees working on the platform were safely evacuated to mainland Scotland. The leak involved natural gas (primarily methane) and condensate, which created a sheen on the water's surface. The environmental impact was negligible; the hydrocarbons evaporated naturally or dispersed in the water within a few days. Throughout the gas leak, samples were analyzed at the initiative of both Total and the U.K. authorities to monitor the impact on the air, water surface, water column and seabed. The analyses indicated that there was no significant impact on the marine environment, the local fish population or the quality of the air. The leak was stopped on May 15, 2012, after mud was injected into the well. An investigation was conducted and its findings shared with the industry and the U.K. Health and Safety Executive. →



### Arctic

We are focusing our attention on onshore oil fields and offshore gas projects and have no intention at this time of conducting oil exploration operations in the ice pack.



### 200,000 indirect jobs created in the United States

In Ohio, where Total teamed up with producer Chesapeake Energy in December 2011, jobs created by shale gas development could number 60,000 in 2014, versus 2,275 in 2011. The shale gas industry is expected to generate 200,000 indirect jobs.

Gas prices have fallen by around 75%, and the electric utilities that have substituted natural gas for coal have reduced their carbon emissions by 50%.

**Ibewa, onshore in Nigeria** – On March 20, 2012, a producing gas well was damaged while a new well was being drilled on the Ibewa field in Nigeria. Fortunately, no one was injured. Production from the Obite gas plant was stopped and the wells were shut down. Total teams immediately set to work to identify potential risks to communities and limit the environmental impact, and a safety perimeter was established around the area concerned. Drinking water and air quality were sampled daily, both onsite and in the surrounding area. At the few points where hydrocarbons were actually detected, the levels were below exposure limits. The subsurface flow of gas was stopped on May 13, 2012, following a snubbing operation in which heavy fluid was pumped into the well through small-diameter pipe.

**Occupational accidents** – Regrettably, four fatal accidents occurred in 2012 in Exploration & Production’s operated scope of activities. As required by our safety procedures, the accidents were investigated in the affiliates concerned. The already strict application of our safety management system was further tightened, especially with regard to the way work is organized and supervised.

To help improve safety performance, we continue to develop a variety of tools and resources. One of the most useful resources available is Total’s Golden Rules for Safety at Work, which cover all of the most common situations encountered at our sites. Compliance is mandatory for both Total and contractor employees. We also invest heavily in training, to continually enhance the skills of all the people working at our sites. Lastly, to improve the integrity of our assets, we deploy an ongoing process of analyses and audits that results in a list of actions that each site must implement.



**01** | *Polarcus Nadia* survey vessel near the Yadana platform, Total E&P Myanmar.  
**02** | Employee on the Kharyaga field in Russia.

**03** | Rice paddy, Bali, Indonesia.

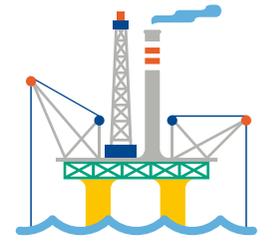
**Minimizing Our Environmental Footprint**

In Exploration & Production, detailed specifications govern how baselines are established and various rules and guidelines determine how environmental impact assessments are carried out. That means air emissions and discharges and releases into water and soil are identified and measured according to type.

**Reducing flaring** has been a priority commitment at Total since 2000, when we decided not to undertake any new developments involving continuous flaring in our operated projects. This rule has been applied to all our recent projects, including Akpo in Nigeria and Pazflor in Angola. In 2006, we pledged to reduce flaring at our existing facilities by 50% between 2005 and 2014.

**Protecting biodiversity** is integrated into our Environmental Management System (EMS). Since 2011, all Total units have access to a geographic information system detailing the location of protected areas worldwide. Part of the Proteus project, the system is linked to a database that is regularly updated by the United Nations Environment Programme-World Conservation Monitoring Centre (UNEP-WCMC). We recently renewed our partnership with UNEP-WCMC for another three years.

In one example of our commitment, we pledged to strictly limit operations to the northern section of the Block III oil exploration license awarded by the Democratic Republic of the Congo — in other words, the planned exploration program will be conducted entirely outside Virunga National Park. We are regularly in contact with various NGOs and with all other project stakeholders, and are performing environmental and social impact assessments prior to undertaking any exploration work. →



**In 2012, flaring accounted for**

**23% of Total's direct greenhouse gas emissions** and 48% of Exploration & Production's direct greenhouse gas emissions.

⊖ **50%**

Total has undertaken to reduce flaring by 50% between 2005 and 2014, excluding volumes related to bringing new fields on stream.



⊕ **Protecting mangrove forests**

**Total launched a vast mangrove replanting program** in the Mahakam Delta in Indonesia in 2000. To date, close to 11 million seeds have been planted over an area of 2,600 hectares. Local communities are taking part in the program, which extends along the riverbanks and close to shrimp ponds. The goal is to replant a million mangroves each year.

### Local Content to Drive the Development of Our Host Communities

Taking the community into account has become a mission-critical practice for extractive industry operators. At Total, we undertake initiatives that aim to foster the human and socioeconomic development of local communities in the areas where we do business. To ensure that our initiatives are part of an effective, long-term solution, we are now shifting from a “handout” mentality to a more sustainable approach based on initiatives in three main areas — corporate citizenship, human and social development, and local economic development.

To leverage our experience and support our teams in the field as they apply this approach, we organize training sessions and topic-specific workshops several times a year. We also provide them with purpose-designed tools such as SRM+, which facilitates stakeholder relationship management, and MOST (Management of Societal Themes), which enables users to manage, coordinate and monitor community initiatives on a day-to-day basis to improve their effectiveness. MOST provides an overview of the initiatives under way, facilitates the financial management of projects via a clear, structured reporting process and enables us to assess the real impact of our initiatives through quantitative and qualitative indicators. We have been gradually rolling out the process across our affiliates since 2011.

On every project, our stakeholders expect us to contribute to employment and development. We target these objectives via two main avenues:

- Increasing local content to the extent compatible with our operational requirements, particularly by offering training and support programs to small businesses and key players in the local economy. This is what we have done in Angola, for example, where 70% of our affiliate’s workforce is local; in Nigeria, where the figure is 76%; and in Indonesia, where it is 95%.
- Fostering the economic diversification of host communities and countries by supporting local initiatives.

This is the idea behind our Small Business Initiative, which grew gradually out of the small business support initiatives conducted by Total and the expertise of Total Développement Régional. In 2012, the initiative produced a practical guide and other tools to help our affiliates and sites integrate local businesses in our value chain and/or to stimulate the local economy. —

### Our Social License to Operate, Improving Financial Performance

Consistently establishing dialogue before we start operations can often improve our social license to operate, saving both time and money in the process. For example, as part of an offshore seismic survey in Bangladesh, we conducted an information campaign in coastal villages to explain where the survey vessel would be, and when. As a result, there was no interference from fishing activities and the \$2 million budgeted to cover the cost of potential stoppages was not needed.

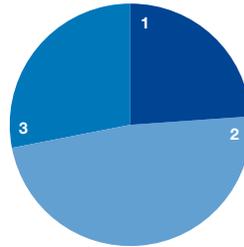


### Myanmar

Addressing the International Labour Organization in Geneva on June 14, 2012, Aung San Suu Kyi said that Total was a responsible investor and that she did not want us to leave Myanmar.



€295 million in community development spending in 2012 (for 100% Exploration & Production operatorship)



- 1 | Corporate citizenship/ Local culture/Good community relations **24%**
- 2 | Human and social development **48%**
- 3 | Local economic development **28%**



**868** community development initiatives in E&P in 2012

# Gas & Power

**Gas is set to play an increasingly important role in the global energy mix, particularly because it can help reduce carbon emissions when used as a substitute for coal in power plants. Total is adapting to stay ahead of the trend.**

According to our projections, natural gas will surpass coal to become the world’s second leading source of energy by 2030. Gas offers a number of advantages, in terms of operating costs, carbon emissions and availability, with reserves estimated at more than 130 years at current production rates. It can also be used alongside renewable energies to help offset their intermittence.

### LNG, an Energy of the Future in Which Total Has a Solid Presence

Liquefied natural gas (LNG) is one of Total’s most promising growth drivers. Our strength lies in our presence across the entire LNG value chain, from gas production through to sales to industrial end-customers. To meet growing demand, we are developing new projects and strengthening integration among our activities.

**In the United States,** Total became one of the first international oil companies to enter the U.S. gas export market when we signed two sale and purchase agreements for LNG from the Sabine Pass terminal in Louisiana. Work is currently under way to transform the regasification terminal into a facility also capable of liquefying U.S.-sourced natural gas for export by LNG carrier to high-demand markets in Asia and Europe.

**In Australia,** the INPEX-operated Ichthys project in the Browse Basin will produce 8.4 million metric tons a year of liquefied natural gas, starting in 2017. The project is the subject of an intensive stakeholder consultation and consensus-building process. For example, a major communication campaign was carried out to explain to the general public how dredging operations will be conducted in Darwin Harbour to create an access channel for LNG carriers. Various initiatives are also being undertaken to support local economic development, particularly for Aboriginal communities. An example is the Larrakia Trade Training Centre in Darwin, which helps locals learn a trade or refresh their professional skills by offering courses in a variety of technical subjects, including electrotechnology, carpentry, metal fabrication and motor mechanics. —



### Managing Energy Use with the AMR Solution

Total Gas & Power UK’s Automated Meter Reading (AMR) solution — which has been awarded the Total Ecosolutions label — provides customers with detailed readings and enables them to identify energy saving opportunities. Thanks to this service, Total Gas & Power UK’s customer portfolio has grown significantly: demand for AMR-enabled meters has outpaced demand for conventional meters fivefold in the last two years.

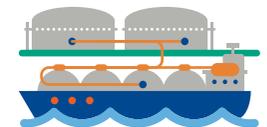


**In the United States, the shale gas boom** reduced carbon emissions by 450 million tons between 2006 and 2011, primarily by providing a substitute for coal in power plants. (Source: IEA)



**5%** per year forecast growth in LNG demand between 2010 and 2030.

**11.4 Mt** of LNG produced (Total’s equity production) in 2012.



### 2012 Facts & Figures

**5 regasification terminals** in which Total has reserved capacity.

**Total has interests in 12 liquefaction plants,** of which 9 in operation and 3 under construction.

**LNG trading volume** 7.24 million metric tons.

**LNG shipping** Through our interests in various liquefaction plants, we charter more than 70 of the world’s 390 or so LNG carriers.

# Gas & Power TIGF

Based in Pau, wholly owned Total affiliate Transport et Infrastructures Gaz France (TIGF) manages a network of 5,000 kilometers of pipelines in 15 departments in southwestern France, as well as two underground storage facilities.

## Consensus-Building for the Artère de l'Adour Pipeline Project

As part of a project to meet the need for gas interconnectors between France and Spain, a community consultation process identified and addressed the concerns of local stakeholders. TIGF adopted a two-pronged approach based on assessments and stakeholder dialogue. This voluntary process was designed to give stakeholders the opportunity to learn more about the project and express their concerns, while also enabling TIGF to select the route that would have the smallest footprint and to determine how the project should be managed and monitored. In March 2012, meetings were held with around 20 opinion leaders, bringing to light their expectations and resulting in a decision to organize four information and consultation days with local communities. A dedicated Web site was also created.

## Sale of TIGF

Recent changes to the European Union gas market and its regulations led to the realization that Total is no longer the company best suited to ensuring TIGF's future development. We therefore began looking for a potential buyer with the necessary capabilities. An agreement was reached between Total's Employee Relations Department and the organizations representing TIGF employees on January 23, 2013. In our search for a buyer, we looked closely at the various candidates' commitment to maintaining jobs, benefits and the company's headquarters in Pau in southwestern France.

In February 2013, Total entered into exclusive negotiations with a consortium comprising Italy's Snam, Singapore investment fund GIC and French electric utility EDF. —



## Project

The Artère de l'Adour project presented the perfect opportunity for TIGF to showcase its environmental best practices, which are based on the "avoid, reduce and offset" approach. As a result, the selected route avoids a number of environmentally sensitive areas and protected species' habitats. In addition, special techniques will be used to clear trees, cross waterways, restore banks and reclaim the land, in order to reduce the impact of the work scheduled for mid-2014.



[www.artere-adour-tigf.fr](http://www.artere-adour-tigf.fr)  
(in French only)



01



02



01 | TIGF meeting in Billère, near Pau, in southwestern France.

02 | Pipeline construction between Ambès and Tauriac in southwestern France.

# Shipping

Transporting crude oil and refined products by sea requires an extremely high level of vigilance. That's why Total implements a very strict vessel vetting process.

As a major charterer of tankers, we apply strict selection criteria. Our voluntary vetting process goes beyond the requirements of national legislation and international conventions, taking into account:

- Recommendations issued by industry organizations.
- Stringent safety standards.
- The alignment of onboard operating procedures with industry best practices.
- Crew experience.

## A Dedicated Department to Ensure Compliance with our Strict Vetting Criteria

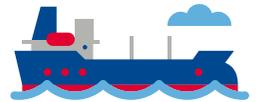
Tankers undergo regular physical inspections and the results are shared with all members of the Oil Companies International Marine Forum (OCIMF) through the Ship Inspection REport (SIRE) database. Before approving any charter voyage, our vetting teams check all of the necessary documentation to assess the quality of the vessel and the experience of the officers on board. OCIMF members perform these inspections using a standard report format and methodology. The SIRE report therefore provides each company's vetting department with the up-to-date information it needs to apply its own internal criteria. —



01 | The *Stena Suede*, a Suezmax crude oil tanker built at the Samsung (SSH) shipyard in South Korea in 2011.



01



## Shipping in 2012\*

Around  
**3,000**  
voyages

Charters with  
**300**  
ship owners

**115**  
million tons  
of crude oil and  
petroleum products  
transported



## Medium- and long-term charters by Total

- 51 tankers
- Average age: 5 years
- No single-hulled vessels

\*Scope: Shipping Department.

# Refining & Chemicals Activity

Our refining and petrochemical business lines require similar technical capabilities and are facing the same challenges: they both need to improve their economic performance in mature markets, primarily in Europe and the United States, and expand in growth markets in Asia and the Middle East. That's why, in early 2012, we combined these two activities into a single organization.



Changes in 2012 for Refining & Chemicals

**22%**  
improvement in TRIR

**22%**  
decrease in SO<sub>2</sub> emissions



**In 2012:**

- Interests in 20 refineries, of which nine operated by Total (Group scope).
- 20.9 million tons per year of petrochemical production capacity worldwide, of which 6.7 million tons per year of polymers.
- 1.8 million barrels per day of refinery throughput.



The new organization was designed to capture synergies, improve our safety and environmental performance, optimize the availability and energy efficiency of our plants, and enable us to more effectively respond to market trends. Merging these two activities also gave rise to some major challenges, particularly in the areas of jobs, skills management and training.

**Adjusting Our Production Base in Europe**

We decided to align our production base with the shift away from gasoline to diesel by leveraging our capacity for innovation and focusing the majority of our investments on our integrated facilities, such as our Antwerp and Normandy platforms, to make them even more efficient. Our goal is to enable all of our sites to achieve a level of excellence — in terms of safety, availability and environmental performance — that would ensure their continued productivity and viability over the long term.

**Improving Environmental Performance to Enhance Industrial Efficiency and Vice Versa**

Bringing the Normandy refinery and the Gonfreville petrochemical plant, located just a few hundred meters apart, under the same umbrella is allowing us to optimize energy, utility and feedstock streams and improve overall logistics.

In the area of energy, for example, by considering both facilities when addressing priority issues like load shedding during steam shortages, we have managed to enhance the operating efficiency of the entire platform. Shutdown and start-up operations and steam distribution are also coordinated more effectively. The capital spending projects at the Normandy platform should ultimately lead to a 10% improvement in energy efficiency and a 30% decrease in carbon emissions.

The changes have also improved management of feedstock streams, particularly hydrogen, which will now be used in the refinery's desulfurization process.

**An Employment Initiative Coordinated with Local Stakeholders**

As part of our planned optimization of operations in the Le Havre region in France, we introduced the Total Emploi Local initiative in cooperation with 300 local businesses with the capacity to respond to calls for tenders. The initiative was developed with the region's key socioeconomic stakeholders, including the Chamber of Commerce and Industry (CCI), local training organizations and job centers, and various municipalities. It enabled us to identify the skills required, give local professionals access to employment opportunities and, where necessary, to train and support long-term jobseekers to provide additional manpower to the project teams. An onsite job center and a dedicated Web site ([www.totalemploilocal.fr](http://www.totalemploilocal.fr) - in French only) made it easier for jobseekers to contact the businesses chosen to work on the project. →



**Safety, an Absolute Priority**

In 2012, the Normandy refinery carried out two major turnarounds to perform maintenance and upgrading operations. The work kept 800 Total employees and 3,500 outside service providers occupied for more than five months. A dedicated onsite HSE unit coordinated safety at the worksites. Based on well-established rules and return on experience, the HSE teams introduced new practices that paid off: the total recordable injury rate during the turnarounds was 50% lower than during the period prior to work commencing.



**Normandy Platform**

Gasoline production cut by **1 million metric tons a year**

Diesel production lifted by **500,000 metric tons a year**

Capital expenditure of more than **€1 billion**



**Hydrogen Recovery**

Each ton of hydrogen recovered during styrene manufacturing translates into a 33% decrease in carbon emissions. It is also 16% cheaper than hydrogen produced through reforming (excluding fixed costs comprising the initial investment to build the unit, payroll and maintenance).



**1,138**

**jobs created** in the Le Havre region thanks to the Total Emploi Local initiative, including 582 under permanent contracts.



**Consolidating Our Industrial Base in North America**

In 2008, we embarked on an upgrade of our Port Arthur refinery that has expanded its ability to process heavier, sour crudes and increased its output of ultra low sulfur distillates. From April 2013, the steam cracker — in which we have a 40% interest — will produce up to 35% of its ethylene from ethane and 35% from butane, capitalizing on advantaged market conditions in the United States.

**Expanding in the Middle East and Asia**

Expansion in fast-growing markets is a cornerstone of Refining & Chemicals' strategy and the reason why we are undertaking ambitious, integrated projects with top-tier partners in these regions. Our goal is to establish a recognized, sustainable presence in the Middle East and Asia. We began building our biggest integrated refining and petrochemical platform in Jubail, **Saudi Arabia** in 2009, in partnership with Saudi Aramco. Thanks to sophisticated full conversion technology, the ultra-efficient facility will be able to process crudes with a high sulfur content and a large proportion of heavy residue, to primarily supply markets in Asia and the Middle East. The project will also generate significant value-added for the local economy, creating some 1,200 direct jobs in Saudi Arabia and five to six times as many indirect jobs. Since 2011, the Saudi Aramco Total Refining and Petrochemical Company (SATORP) joint venture has hired 25 young Saudi engineers and provided them with classroom training at the IFP School in France as well as hands-on experience at Total refineries in Belgium, France, Germany and the Netherlands.

**In China**, we now have 3,400 employees in our refining and chemical activities. In the northern part of the country, we hold a 22.4% interest in the PetroChina-operated WEPEC refinery in Dalian, which can process 10 million tons of crude oil a year. And in the south, we produce 200,000 tons of polystyrene a year at our plant in Foshan. We have also started building a new polystyrene plant in Ningbo, near Shanghai. Products from all of our petrochemical plants worldwide are marketed in China via our offices in Beijing, Guangzhou, Hong Kong and Shanghai.

⊖  
**4 million**  
hours worked  
with no injuries  
at the Foshan plant  
in China on May 29, 2012.



02

⊖ ⊕  
01 | 02 | Workers at the Total Petrochemicals plant in Singapore.

**Human Resources, Critical to Refining & Chemicals**

Because each individual career has to be built step by step and because the various units need a framework to effectively allocate capabilities, a new guideline was issued during the year on career and skills management. Training is a key aspect of the process, enabling us to keep up with the changes in our job families and enhance the skills of our employees.

**An Integrated HSE Management System**

Modeled on Exploration & Production's HSE Maestro, R&C Maestro has now been adopted as Refining & Chemicals' new safety management system. More comprehensive than its predecessor, R&C Maestro incorporates core HSE management principles from recognized international guidance, while strengthening the health, environment and process safety requirements. It is currently being fine-tuned through pilot audits to validate its implementation and see how well the sites have adopted the new guidance. The decision to use an internal team of auditors will help drive measurable gains. The new system will be tested over the next few months at the Grandpuits refinery, followed by the Feyzin facility, and will be gradually rolled out to end-2015.

**The Need for a Revised, Stable Regulatory Framework**

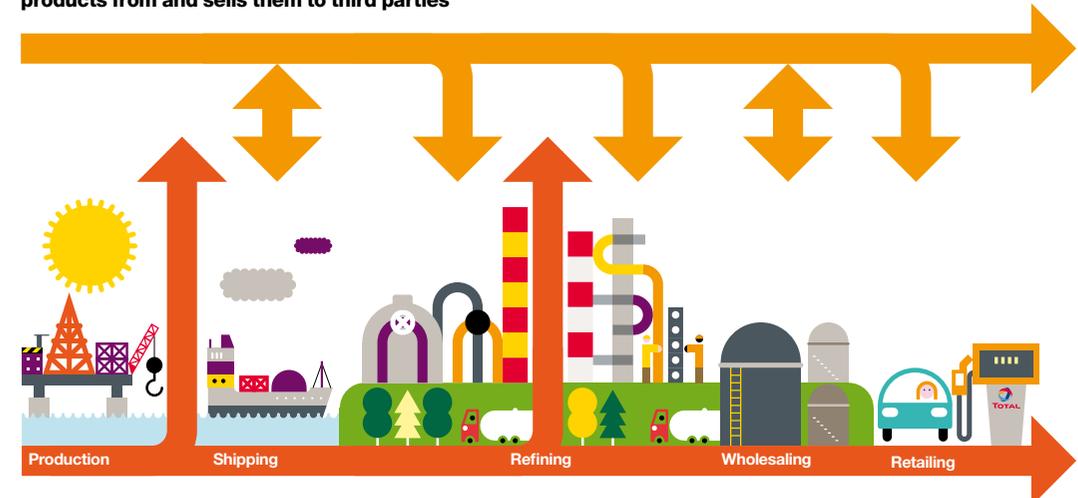
At Total, we believe that refining has a future in Europe if aligned with market demand, particularly if we encourage synergies with petrochemicals. But we need a regulatory environment that allows us to be sustainably competitive. —

⊕  
**Repurposing the Flandres Refinery**  
**The OLEUM Training Center in Dunkirk Takes Off**  
**In 2012:**  
— 4,000 days of training provided.  
— More than 5,000 room nights reserved in the region's hotels.  
**Goals for 2013:**  
— 3,000 days of training for operators.  
— 4,000 days of technical training, including 2,500 in Dunkirk.  
— More than 500 days of training with our local partners, in cooperation with the Chamber of Commerce and Industry.

⊕  
**Physical Trading**  
**Optimizing the Supply Chain**

Total's Trading & Shipping teams are responsible for managing the movement of our crude oil and petroleum products worldwide. All of the operations carried out by Trading & Shipping are conducted in compliance with strict internal control procedures and within clearly defined trading limits. With 4.5 million barrels a day of crude oil and refined products traded in physical markets in 2012, Total continues to be a leading operator in the international oil market.

**To optimize the supply chain, Trading buys petroleum products from and sells them to third parties\***



\*Other oil companies, marketers, independent traders.

# Refining & Chemicals Products

**Refining & Chemicals polymer and specialty chemical business lines focus on developing ever more efficient, lighter and more recyclable materials, mitigating intrusions and environmental impact during the manufacturing process, and making the lives of end consumers easier. The team's motto is "sustainable innovation."**

## Fast-Growing Markets

### A Vast Array of Products Used Every Day

Through its R&D, our polymers business develops more efficient, easier-to-use products — disposable to permanent and complex to simple — that are tailored to user expectations. They help to reduce greenhouse gas emissions in applications ranging from transportation to insulation.

### Lighter Cars and Lower Emissions

Several of our units are working with automakers to develop lighter, safer, more fuel efficient cars that are more environmentally responsible. As part of this process, we develop polypropylene used in dashboards and bumpers and polyethylene used in fuel tanks, for example. Our affiliates Hutchinson and CCP Composites contribute their expertise in composites and polycarbonates, used to manufacture body panels and windows and in passenger compartments. Today, plastics account for 15% of total vehicle weight, a figure that is expected to rise to 25% by 2020, making cars even lighter.

### Excell-R®, a Next-Generation Polystyrene That Improves Energy Efficiency

With thermal insulation properties that are significantly superior to conventional white expanded polystyrene (EPS), Excell-R® delivers more efficient building insulation.



## Refining & Chemicals

- 19 Total Ecosolutions products.
- A top ten polyethylene, polypropylene and polystyrene manufacturer.



02



**01** | Workers at the Bostik plant in Guangzhou, China.  
**02** | Quality control of anti-vibration parts and packaging at the Hutchinson plant in Suzhou, China.

## Specialty Chemicals Affiliates Innovating to Deliver Optimized Products and Customer Benefits

Since 2009, our specialty chemical activities have been consolidated in three companies. Each is a global leader in its field: **Hutchinson**, for elastomer processing and products; **Atotech** for electronics and surface finishing; and **Bostik**, for adhesives. Differentiation through technology is the core component of their respective strategies.

### Hutchinson: Safer, More Comfortable Transportation

The new flexible exhaust coupler is suitable for various vehicle models and delivers a smoother, quieter ride. Its acoustic properties eliminate the need for large, expensive mufflers.

In addition, a new Total Ecosolutions-labeled high-temperature elastomer improves mechanical performance and offers better protection in the event of fire. And another plus — it requires smaller amounts of raw materials.

### Atotech, Innovative Technologies to Reduce Environmental Footprint

UNIPLATE is a new technology for manufacturing printed circuit boards (PCBs) that uses 50% less rinse water and chemicals. With 50 million square meters of PCBs produced each year, this solution ultimately saves 300 tons of copper, 150 tons of sodium hydroxide and 315 tons of formaldehyde, reducing carbon emissions by nearly 2,000 tons.

EDEN (Electro Dialysis for Electroless Nickel) is an innovative process for coating parts for the automotive and electronics industries. Over three years, nickel use is reduced by nearly 70% and sodium hypophosphite use by 75%. That works out to a savings of 219 tons of carbon dioxide per process. Both solutions have been awarded the Total Ecosolutions label.

### Bostik, Cutting-Edge Technologies for Adhesives and Sealants

Bostik's technologies meet the requirements of the construction, transportation, personal care and packaging industries. For example, our affiliate has developed a fire-retardant sealant with exceptional bonding properties for railway vehicles. The first product of its type in the market, it anticipates future European Union regulatory requirements.

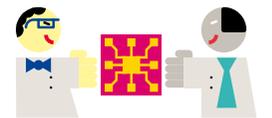
In 2011, Bostik also introduced the Pegasus program, to strengthen our development of sustainable innovative solutions and bring them to market faster. In 2013, innovations less than three years old will account for 10% of total sales, versus 8.3% in 2010. —



## China

### Cementing Our Presence

- Hutchinson: 2 plants, in Wuhan and Suzhou.
- Bostik: 2 plants, a third under construction; a new R&D center for Asia under construction in Shanghai.
- Atotech: 1 production plant; 5 sales offices; 13 service laboratories, including 2 tech centers; 30% of Atotech's global revenue.



## ZeroCreep™

Savings when ZeroCreep™ adhesive is used to bond elastic, compared to the market standard:



**63%**  
less water used

**60%**  
less energy used

**53%**  
reduction in greenhouse gas emissions



## Bostik's ZeroCreep™ Adhesive, Dual Environmental Advantages for a Total Ecosolutions Product

Used to bond the elastic sealing edge on disposable diapers, Bostik's ZeroCreep™ adhesive reduces the amount of material required by at least 50% compared to the market standard. That in turn helps to cut water and energy consumption and greenhouse gas emissions generated during diaper manufacturing. Sales have doubled in five years, a clear sign that Bostik's customers appreciate both the savings in adhesives and the improved bonding performance.

# Marketing & Services

Total's Marketing & Services teams design and market products made primarily from petroleum and provide the services associated with them. Our goal is to deliver effective, innovative solutions that actively bring a responsible energy future closer. We want to better pinpoint the expectations of both retail and business customers and anticipate consumption trends.



## New T-AIR Service Station Design

The new Total T-AIR service station design offers a selection of recycled and recyclable materials, optimized lighting, a lighter, more fluid look, selective waste sorting, greater visibility of messages and services, and a user-friendly layout that makes it easier for customers to find their way around.

- 150 T-AIR stations worldwide at end-2012 and nearly 900 by end-2013.
- Concept to be rolled out in France in 2013.



⊖  
**~15,000**  
service stations,  
with over 5,000 in  
60 non-OECD countries.



## A Global Presence Catering to Local Needs

Marketing & Services teams are present in more than 130 countries worldwide, delivering close-to-the-customer services and contributing to local development. In line with our strategy of fostering diversity and creating a more international workforce, we support the hiring, training and promotion of local talent at all levels of the organization.

**In Asia**, which accounts for a third of our lubricant sales, we opened a new techcenter in Mumbai, India, to tailor products to local requirements. Our teams contribute their expertise in characterizing the region's base stock, formulating lubricants specifically for two-wheelers, and developing cost-competitive formulas for automotive oils and fluids. They also provide technical support related to special fluids, fuel additives, and asphalt and bitumen. To ensure consistency and compatibility in the expertise provided, all of the engineers in Mumbai have received training at the Solaize Research Center in France.

**In France**, Total has responded to consumer demand by launching Total access, a new service station concept combining low prices and premium Total-branded fuels and services. The number of outlets in the network exceeded 300 at end-2012 and is set to increase to 600 by 2014. Total is widely recognized for the quality of our services. Our "De Vous à Nous" consumer information center in France, for example, was named Best Customer Service of the Year in the Driver Services category four years in a row by market research institute BVA.

## Products, Services and Solutions Combining Technical and Environmental Performance

The number of initiatives implemented by governments to curb greenhouse gas emissions has been growing constantly since 2006. At Total, we see this as an opportunity to develop products and services that enhance energy efficiency and promote multi-energy solutions. The **Total Ecosolutions** program has continuously expanded since its launch in 2009. At end-2012, 11 products and six services offered by Marketing & Services had been awarded the label, which recognizes a reduction in resource or energy use and/or environmental impact. One example of a product that has been awarded the Total Ecosolutions label is the EDC range of drilling fluids manufactured at our plant in Oudalle, France. Because they are produced by subjecting a diesel fraction to a deep catalytic hydrogenation process, these drilling fluids have an extremely low aromatic content. Used in the manufacture of drilling mud, they offer a very significant improvement in environmental performance compared with other fluids in the market.

⊕  
**Total has launched an innovative program to address fuel poverty in France by:**

- Providing financial support for the *Habiter Mieux* housing improvement program, which aims to reduce heating-related energy use in 300,000 French households coping with fuel poverty by helping with insulation and heating system upgrades.
- Partnering with Voiture & co to develop transportation services that enable people to find or keep jobs.

⊖  
**3 million**  
people stop  
by Total service  
stations every day.

⊕  
**We sell our lubricants and other specialty products in more than 150 countries.**

⊕  
**Total Ecosolutions-labeled rollover car wash with water recycling system:**

- 77% reduction in the amount of potable water used.
- 100% of Total's car wash network in France equipped with water recycling systems by end-2017.

⊕  
[www.total.com](http://www.total.com)

⊖  
**~20**  
electric vehicle  
charging stations  
in Belgium, France, Germany and the Netherlands.

Total is also participating in research on the vehicles of tomorrow and their environmental impact. And we are actively involved in **developing new fuel solutions**, including second-generation biofuels and hydrogen. Hydrogen retailing trials are continuing in Germany as part of the Clean Energy Partnership, of which Total is a member. A new demonstration station was opened in Berlin in 2012 and another is scheduled to open near the city's new airport. The H2 Mobility study on the development of a network of hydrogen fueling stations by 2015-2020 has been completed. The feasibility of larger-scale deployment is now being examined.

In Africa and the Middle East, mining companies, cement makers and other businesses in areas where the power grid is inadequate or even non-existent often use diesel generators to secure their supply. But solar energy may be a viable alternative in several countries.

To give the region's businesses access to a reliable, sustainable energy source that will help to reduce greenhouse gas emissions, Marketing & Services' New Energies and Africa/Middle East Divisions are working together to develop multi-energy options that incorporate SunPower solutions.

**Road Safety, a Constant Priority**

Each day, thousands of trucks carrying our products travel along highways and roads worldwide. Improving road safety is understandably a priority for Total, and we are strongly committed to leveraging our experience to develop real-world solutions tailored to local needs. That's why we participate in such partnerships as the United Nations Road Safety Collaboration via the Global Road Safety Initiative and the Global Road Safety Partnership initiated by the World Bank.

A variety of programs have been implemented over the years to improve our road safety performance: PATROM in Africa and the Middle East, POSTALC in Latin America and the Caribbean, and AP-TRIP in the Asia-Pacific region. They include driver training, vehicle checks and the installation of onboard event data recorders. Transportation management system (TMS) audits are regularly conducted on these programs, which are now being harmonized. The reporting and analysis of transportation-related near misses is also the subject of close scrutiny and tailored action plans.



**Energy Efficiency Certificates in France**

**Total France's compliance with energy efficiency certificate requirements has led to:**

- Around 100 direct and indirect jobs being created.
- 100,000 energy efficiency operations annually, involving insulation solutions and furnace upgrades.
- An enhanced customer relationship that can stimulate new solutions.
- Participation in car pooling initiatives involving 150,000 drivers.
- Actions that encourage 40,000 Total employees to cut their energy use at home.



01



02

- 01 | Workers on the Balhaf jetty in Yemen.
- 02 | Truck in a rapeseed field, Duisburg, Germany.

Despite a record 30% improvement in the business's total recordable injury rate in 2012, six fatal accidents occurred during the year, affecting all of our host regions, and five of them were transportation-related. Since 2012, the 10 affiliates most exposed to transportation risks have been the target of specific road safety improvement and monitoring measures. We also continue to deploy **awareness and training initiatives** aimed at drivers and the general public. In Africa, for example, our five driver training centers in Cameroon, Ghana, Madagascar, Nigeria and Zimbabwe are open to drivers from trucking companies working with our affiliates and drivers from other businesses. In partnership with relevant associations and authorities, we conduct campaigns to raise awareness of road hazards among pedestrians. The On the Road to Safety program, for example, is being deployed in 45 countries. The goal is to educate 200,000 children about road safety each year over a three-year period. Unaware of the potential hazards of petroleum products, local communities are often tempted to recover the fuel from overturned tank trucks, which can lead to tragedy. Total Cameroun came up with an attention-catching initiative to spread the word, a Safety Caravan that crisscrosses Cameroon several times a year, reaching 200,000 people. The idea has now been replicated in Ghana, Kenya and Uganda too.—



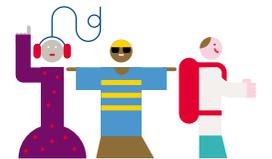
**Young Driver Awareness Campaign**

In France, a young driver awareness campaign has been conducted in middle and high schools every year since 1995 to educate 14- to 18-year-olds about traffic regulations and responsible driving practices.

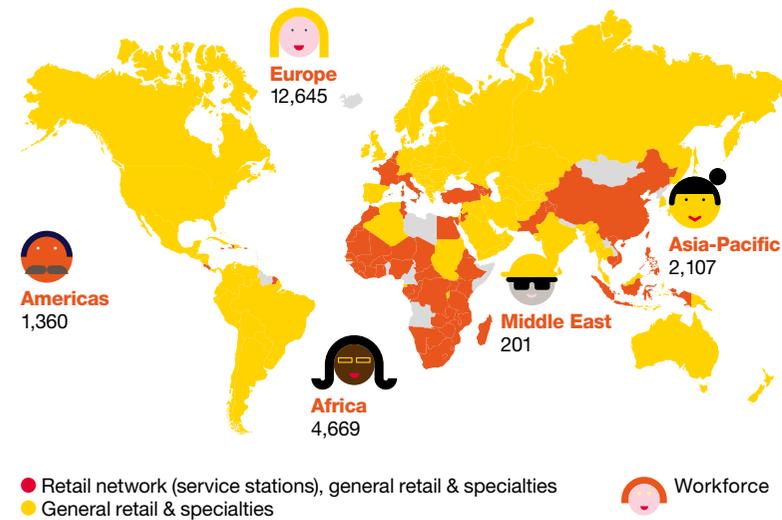


**120,000 teenagers have been educated about road safety**

via Total's partnership with the French police, insurer Groupama and carmaker Renault.



**Our Positions in 2012**



**Marketing & Services in 2012**

- Women represented:**
- 38.1% of the total workforce.
  - 39.6% of new hires.
  - 26.2% of managers.
- Non-French nationals represented:**
- 57.2% of the workforce.
  - 57.4% of managers.
  - 81.2% of new hires.

# New Energies

**Renewable energies will be essential for meeting global energy demand in the future. To accelerate their technical and economic maturity, Total is investing in several areas. Our development priorities are solar and biotechnology-focused biomass conversion.**

## Growth in Solar Despite a Challenging Market

Competition from China and cuts in subsidies triggered by the economic crisis wiped out many of the world's solar panel manufacturers, particularly in Europe. But of all the renewable energies, solar nonetheless attracts the lion's share of global investments. According to U.S. business intelligence provider GlobalData, it accounted for close to 50% of the total in 2011, versus 34% for wind power. At Total, we firmly believe that solar energy has a bright future. And we're in the process of proving it.

## Sustainable Solar Projects

Profitability and technical performance are directly linked. The Maxeon™ monocrystalline cells used in the panels produced by Total affiliate SunPower offer unparalleled efficiency, even in cloudy, shady and dusty conditions and at extreme temperatures. An integrated operator, SunPower designs, manufactures and installs solar energy systems, allowing it to offer customers a range of cost-competitive solutions.

The first phases of the 250-megawatt **California Valley Solar Ranch** (CVSR) are already operational and the entire project is scheduled for completion by end-2013. The 800,000 SunPower panels installed over 607 hectares will cover just 30% of the site. The remaining 70%, or just over 1,400 hectares, will be managed as a protected nature area to preserve the wildlife and plant species in the valley. A water conservation program will round out the plan.

Early in 2013, SunPower signed an agreement to sell the **Antelope Valley Solar Projects** (ASVP) in California to a subsidiary of Warren Buffett's



## Top 3

**Thanks to SunPower,** Total is one of the top three solar companies worldwide, generating revenue of \$2.6 billion in 2012.



## Antelope Valley Solar Projects

- Nearly 650 jobs created during the construction phase.
- Around 400,000 homes powered.
- 775,000 tons of carbon emissions offset per year, approximately equivalent to annual emissions from 150,000 vehicles.



## SunPower® solar panels are eco-designed

They are simple to dismantle and their components (primarily glass and aluminum) can easily be handled by recycling systems. To actively support the recycling of photovoltaic modules, SunPower is also a member of non-profit organization PV Cycle.



**01** | Solar panel installation at the California Valley Solar Ranch in the United States.

MidAmerican Renewables, effectively greenlighting the development. With a generating capacity of 579 megawatts, AVSP will be the largest photovoltaic solar power development in the world. The SunPower® Oasis® power blocks that will be installed over an area of around 1,300 hectares can produce up to 25% more energy than conventional photovoltaic power plant systems. Construction began in first-quarter 2013 and is expected to be completed by end-2015.

## New SunPower Manufacturing Plant in Northeastern France

During the year, Total and SunPower announced the commissioning of a second solar panel assembly plant in France. Located in Porcelet in the Moselle region, the new plant has a production line with an annual capacity of 44 megawatt-peak. It will produce nearly 150,000 high-efficiency solar panels a year for the European market in residential and commercial rooftop systems and solar farms. The plant's proximity to customers in France, Italy, Germany and Belgium ramps up our ability to compete in a highly aggressive market.

## Shams 1 Inaugurated in the United Arab Emirates in March 2013

Built by a consortium comprising Total, Abengoa Solar and Masdar, Shams 1 — from *Al Shams*, Arabic for "sun" — is a hybrid power plant combining solar energy and gas. This means that the transfer fluid used to generate steam and power can still be heated under conditions of significantly reduced sunlight. Comprised of 260,000 collectors assembled into parabolic trough concentrators, Shams 1 covers an area of 250 hectares and is one of the largest concentrated solar power plants in the world.

## Biochemical Conversion, a Technological Revolution in Which Total Intends to Play a Key Role

Biochemical methods harness microorganisms (yeast strains or bacteria) to convert biomass to various molecules that can be used to produce fuels and chemicals. Total is involved in several R&D programs in this area, and a number of innovations are now close to commercial scale-up. For each, the life cycle assessment method serves as a valuable tool for evaluating a product's environmental impact, enabling us to select the resources used in accordance with appropriate environmental, social and economic criteria. We also make sure that our use of local resources does not compete with basic food needs.

## Amyris, A Breakthrough Technology Already Brought to Maturity

Since 2010, Total has been partnered with Amyris, a U.S. company specializing in biotechnology, to develop and market biodiesel, bio-jet fuel and specialty chemicals. Amyris has an unmatched bioengineering platform that it uses to develop microorganisms that can convert sugar derived from biomass into various molecules, including the ones used in refining and chemical production. The company's first commercial-scale facility — the Brotas plant in Brazil — began producing farnesene in early 2013.

## Our Medium-Term Priority: Finding a Way to Use Lignocellulose, the Non-Edible Part of Plants

Total is testing various ways of producing biofuels and molecules for the chemical industry from farming and forest waste, with Coskata and the Futurol and BioTfuel projects, and from pulp waste via the BioDME project. Ultimately, Amyris too will use lignocellulose. We are also conducting exploratory research on microalgae, which offer a number of advantages: they do not require arable land; they produce very high yields; and they can convert light and carbon dioxide directly into molecules of interest. —



# 80

**of our employees work on solar and biotech,** collaborating with the 400 researchers employed by our partners in Brazil, France and the United States.



## Shams 1

- 1,300 jobs created during construction.
- 100 operations and maintenance jobs created.
- Around 20,000 homes powered.
- 175,000 tons of carbon emissions offset.



## Novogy

**In December 2011, Total acquired an interest in Novogy, a start-up that grew out of MIT.**

Our partner engineers yeast strains that use renewable feedstock to produce fatty acids that will be processed into biosourced diesel, jet fuel and specialty chemicals.



# Our Stakeholders Tell Us What They Think

Our stakeholders have asked questions about issues that concern them in each of our CSR reports since 2009. This year, they agreed to share their immediate impressions of our new report format. Here, the main lessons learned.



01



02



03



04



See the CSR Analysts section on [www.total.com](http://www.total.com)

The integrated reporting process was welcomed by everyone, with the report being seen as clear and informative. The presentation by business segment and activity illustrates Total's missions and activities, making it easier to understand how business and CSR are intertwined. However, some stakeholders would have preferred the report to be organized by region; others, by major challenge. For instance, why wasn't water management addressed specifically?

## Suggested Improvements

The choice and materiality of the issues and challenges addressed were not sufficiently explained before the report was prepared. It was felt that they could have been discussed not just with internal stakeholders, as was the case for the report, but also with external stakeholders, in line with current best practice. More detail could have been provided on two topics:

- The policy for managing risks, including those related to contractors and, more broadly, employees of companies that work with Total, such as joint venture partners.
- The on-the-ground organization to ensure that human rights are upheld in countries where Total operates. Even though it is more difficult to measure a company's human rights footprint than its environmental footprint for example, that does not mean it should not be done.

This is an area where Total could take the lead.

Other areas of improvement were also mentioned, such as presenting detailed plans for reducing flaring by region.

## Positive Aspects

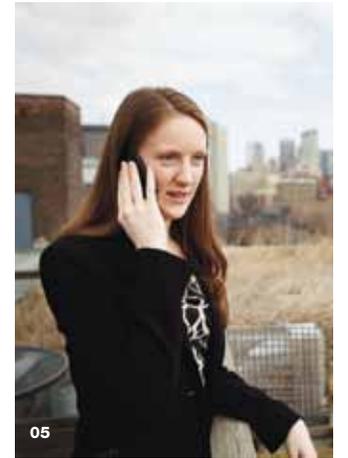
- The opening message from Chairman & Chief Executive Officer Christophe de Margerie, which demonstrates that Total's CSR commitment is championed and embraced at the highest levels of the company. In addition, sensitive and controversial topics are addressed directly.
- Challenges are put into context, making them easier to understand.
- The continuous improvement process talked about in the interview with Manuelle Lepoutre.
- The discussion of Total's shared values, which have a real impact on operations. However, it would be useful to indicate their cross-reference with leading international CSR standards, such as those issued by the OECD or the United Nations.
- The "Total Creates Value for Stakeholders" diagram.
- The sections on Total's business segments and lines, which make it easier to understand the value chain and Total's CSR risks and challenges.
- The innovative "Our Commitments" page; however, there should be some way of tracking these commitments to stakeholders from one year to the next.

## In Brief

Total's first steps toward an integrated CSR report demonstrate that the company is aware of its responsibilities, which are commensurate with its international reach and stem directly from its role as an energy company. In future, Total must continue to ensure it allocates sufficient resources to pursue its initiatives and improve its performance. —

## Paris – March 26, 2013

Diran Fawibe — Dayna Linley-Jones — Ivan Pearson  
Michel Poati Tchicaya — Christine Renaud



05

①

### Left to right:

**01 | 02** Present in Paris: Ivan Pearson, Project Manager at Bellona Europa, an environmental NGO specialized in energy and climate change, based in Belgium; Christine Renaud, Secretary of Total's European Works Council, which comprises 96 members representing the European workforce, and member of the Council's Liaison Office, based in France.

**03** | Via video link from the Republic of the Congo: Michel Poati Tchicaya, head of a district in Djeno, where a Total oil terminal is located.

**04** | Via video link from Nigeria: Dr. Diran Fawibe, Chairman & Chief Executive Officer of International Energy Services Limited (IESL), a major player in the Nigerian oil and gas industry.

**05** | Via conference call from Canada, Dayna Linley-Jones: Global Energy Sector Lead at Sustanalytix, a leading global provider of environmental research and analysis.

## Our Commitments

### Stakeholders

### Commitments

#### Investors, Individual Shareholders



- Deliver exemplary financial and corporate social responsibility performance.
- Engage in dialogue, provide information, facilitate the exercise of their rights and build sustainable relationships.

#### Employees



- Promote equal opportunity, a more international workforce and diversity at all levels of the company.
- Create and maintain a good working environment, through respect, non-discrimination and appropriate health and safety conditions.
- Promote personal and career development through offering training, managing competencies, assessing performance, implementing return on experience, providing information and building a consensus.

#### Suppliers Service Providers Contractors



- Deploy our Fundamental Corporate Responsibility Principles for Purchasing and cascade our responsible purchasing policy.
- Promote local content in all of our host countries.
- Select industrial and business partners who comply with our safety, health, environment, ethics and quality policies.

#### Customers



- Forge partnerships for and with our customers to offer them a highly visible lineup of up-to-date, innovative products and services.
- Listen to our customers, notably through our customer service centers.
- Offer eco-efficient products and services through our Total Ecosolutions program.

#### Host Countries Politicians Governments



- Not to interfere in the political processes of our host countries.
- Build long-term relationships in the public sphere.
- Transparently and effectively participate in the main organizations dealing with energy-related issues.
- Uphold the rules of free competition and reject corruption in all forms.

#### Neighbors Local Communities



- Deploy our Societal Policy and Directive, adopted in 2012, to apply our community engagement standards across the company.
- Establish permanent organizations to engage with neighboring communities.
- Consistently use our stakeholder relationship management tool, SRM+, to help site and affiliate managers implement community development initiatives in liaison with local communities.
- Help to drive local economic development.

#### Media



- Be honest, transparent and educational.
- Publicly pledge to participate in discussions of issues to which we can make an informed contribution.
- Communicate responsibly, as set out in our Guide to Responsible Communication.

#### NGOs



- Appoint a dedicated contact for NGOs in the Public Affairs Division.
- Form local partnerships in our host countries, through dialogue.

#### International Organizations



- Participate actively in the initiatives of the Global Compact (LEAD platform), IPIECA, the Extractive Industries Transparency Initiative (EITI), the Voluntary Principles on Security and Human Rights (VPSHR) and the Women's Empowerment Principles (WEP).
- Help to advance global governance.

To learn more,  
go to [www.total.com](http://www.total.com)



#### CSR Specialists and Analysts

Click on the CSR Analysts section to find the more detailed information previously provided in the CSR report (indicators, IPIECA/GRI, method, etc.), along with enriched content.

#### NGOs

Visit the dedicated section on our CSR challenges.

#### Investors and Shareholders

Click on the dedicated section or read the 2012 Registration Document.

#### Journalists

Our Media section contains a wealth of useful content.

#### Students

Visit the Careers section to find out how to join Total.

#### General Public

Visit [www.total.com](http://www.total.com) for more information or to read Total at a Glance 2012-2013 (Publications section and the Total Publications iPad app).



We welcome your feedback. Just click on **Contact in the CSR Analysts section.**



#### Environmental Impact

More than 27,500 copies of last year's publication were printed. Using recycled paper reduced our environmental impact. The savings\* were:

- 7,211** kilograms of waste paper
- 781** kilograms of carbon dioxide
- 188,293** liters of water
- 11,720** kilograms of wood

Source: Arjowiggins Graphic's environmental calculator. The carbon footprint was assessed by FactorX using the Bilan Carbone® method developed by the French Environment and Energy Management Agency (ADEME). Calculations are based on a comparison between the recycled paper used and a virgin fiber paper corresponding to the latest European BREF data available for virgin fiber paper. The results are based on technical data and subject to modification.



Printed with vegetable ink on Igloo Offset paper, produced from recycled FSC-certified pulp, reducing pressure on the world's forests. The Ecolabel-certified paper was produced in an ISO 14001- and FSC-certified paper mill. The printer is certified as complying with Imprim'Vert®, the French printing industry's environmental initiative. FSC no. C006774. The Print Time to Market® concept adopted means that only copies actually distributed are printed, meaning we do not have to discard unused copies at end-of-life. With EcoFolio, Total is encouraging paper recycling. Sort your trash, protect the environment. [www.ecofolio.fr](http://www.ecofolio.fr)

#### Illustrations

Illustrations: Peter Grundy, Alberto Antoniazzi. Photos: Total photo library, Agence REA, O. Roller, O. Ripoll, M. Roussel, S. Gladieu, L. Pascal, L. Zylberman, E. Follet, M. Labelle, G. Okuka, M. Dufour, T. Gonzalez, S. Lavoué, J. Schulzki, Stena Bulk, Shams, ©Courtesy of SunPower Corp., Technical Service Engineer for NanoH<sub>2</sub>O.

#### Design and Production

M&C SAATCHI.CORPORATE Editorial Services: Corine Delahaye Consulting Services: Utopies Photoengraving: Compos Juliot Printing: Advence May 2013



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