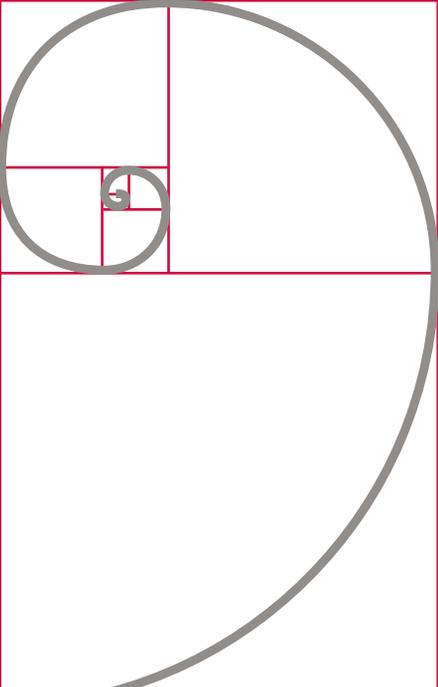




# RESPONSIBLE. BY DESIGN.



2012 SUSTAINABILITY REPORT



**TABLE OF CONTENTS**

02 Letter from Our Chairman and Chief Executive Officer

---

05 Core Values/ Sustainability Commitments

---

07 Operational Highlights

---

10 Corporate Governance

---

16 Providing a Safe Work Environment

---

24 Respecting the Environment

---

28 A Discussion on Hydraulic Fracturing Stimulation

---

36 Caring for Our People

---

42 Bettering People's Lives

---

45 About this Report

---

46 Performance Data

---

48 IPIECA/API/OGP and GRI Index

**SPOTLIGHT ON  
CORE OPERATING AREAS**

**08 DJ Basin**



**34 Eastern Mediterranean**



**14 Marcellus Shale**

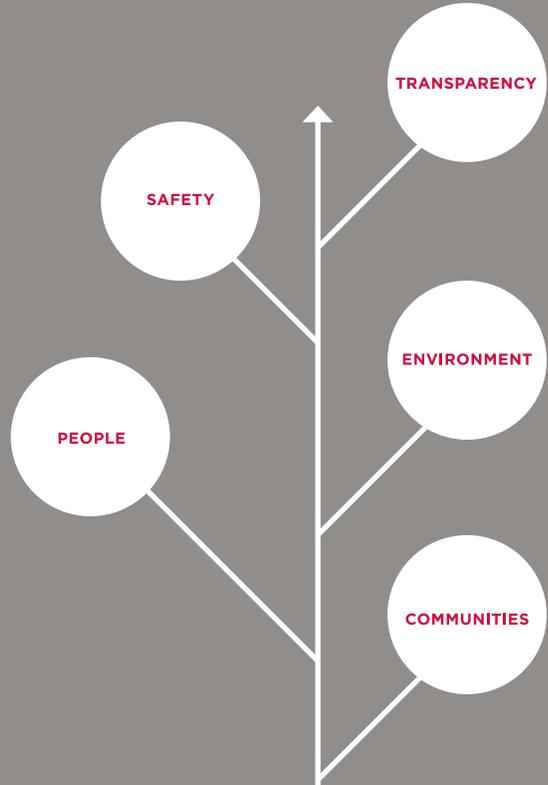


**40 Equatorial Guinea**



**22 Deepwater Gulf of Mexico**

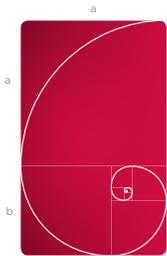




**WE UNDERSTAND THAT SUSTAINABILITY REPORTING IS A JOURNEY. AS A COMPANY, WE ARE COMMITTED TO TRANSPARENCY IN OUR INTERACTIONS WITH STAKEHOLDERS AND LOOK FORWARD TO ENHANCING THE QUALITY AND CONTENT OF OUR SUSTAINABILITY REPORTING IN THE FUTURE.**

# JOURNEY

# SUSTAINABLE. BY DESIGN.



*Just as the golden ratio is used to design the limitless golden spiral, the equation for designing a company that can deliver limitless possibilities is a unique combination of people, purpose, strategy, assets and investments.*

## LETTER FROM OUR CHAIRMAN AND CHIEF EXECUTIVE OFFICER

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Consistent with our expectations, Noble Energy delivered substantial growth in 2012. More importantly, we expect our production growth to continue at a rapid pace that should allow our company to double in size over the next five years. We envision many years of sustainable material growth driven by the development of major exploration discoveries and unconventional U.S. onshore resources. We also recognize that our growth in scale and scope will bring even greater responsibilities.



**Charles D. Davidson**

Chairman of the Board and Chief Executive Officer

This is a very exciting outlook for our company. At the same time, we recognize that sustainable, extraordinary performance is about more than operational and financial results. We are equally excited about the many ways in which we are living our purpose of *Energizing the World, Bettering People's Lives*®.

It was with great pride last year that we published our first sustainability report. We are both pleased and encouraged by the many positive comments we received from our stakeholders. We understand that sustainability reporting, like sustainability itself, is a journey. This second report provides highlights of our 2012 progress along that journey and discusses a number of our ongoing initiatives.

As in 2011, many of our 2012 operational and financial highlights include sustainability components. For example:

- Our social investment contributions in key areas of operations, including Equatorial Guinea, Israel and the United States, exceeded \$10 million.
- In our highly successful horizontal drilling program in the DJ Basin in northeastern Colorado, we continued to pursue opportunities to reduce our footprint by drilling multiple wells from the same pad, utilizing common production facilities called EcoNodes, and implementing a water management system that includes recycling water used in operations.
- Noble Energy, with our partners, helped Israel meet its energy needs for cleaner and lower cost natural gas by quickly developing two smaller natural gas fields, Noa and Pinnacles, offshore Israel, while we were awaiting the start-up of our large Tamar gas field.
- We continued our commitment to attract, develop and retain local employees in our areas of operation. Approximately 80 percent of the employees we hired to support the Marcellus Shale operations in 2012 were from the Pennsylvania, West Virginia or Ohio areas; 46 local employees were added to our Israeli workforce; and 75 percent of our positions in Equatorial Guinea are now held by nationals.

We recognize that sustainable, extraordinary performance is about more than operational and financial results. We are equally excited about the many ways in which we are living our purpose of *Energizing the World, Bettering People's Lives*.<sup>®</sup>

– Charles D. Davidson

Other 2012 sustainability highlights at Noble Energy include:

- 20 million man hours worked in 2012 by our employees and contractors while achieving our best safety performance ever as measured by a combined total recordable incident rate (TRIR) of 0.48.
- We were named by the *Houston Chronicle* as one of Houston's "Top Workplaces" for the third consecutive year.
- We announced plans for a new company headquarters that will consolidate our employees in a state-of-the-art campus community in north-west Houston. The first building in the campus is LEED Gold certified.
- Employee involvement is on the rise. The number of employees participating in our United Way of Greater Houston annual pledge campaigns increased 57 percent in 2012 compared to 2011, and we undertook significant volunteer and fund-raising efforts in support of the National Multiple Sclerosis Society MS 150 bike ride, the American Heart Association, Junior Achievement and a number of other community initiatives.
- We continued to improve the company's governance structure, amending the charter of our Corporate Governance and Nominating Committee to provide oversight of the company's political activity and enhancing our political activity disclosures.

- We remained an active participant in FracFocus, a hydraulic fracturing chemical registry website that discloses information regarding chemicals used in hydraulic fracturing. We also participated in the Carbon Disclosure Project's water program.

Stakeholder engagement is an important aspect of Noble Energy's business. Engagement with stakeholders of all types, at all levels, enables us to understand the concerns, perceptions and impacts of our activities. Stakeholders that we consider central to our operations include communities, employees, government, industry, civil society organizations, contractors, partners and investors. Details about the various programs and initiatives related to our stakeholder engagement efforts can be found throughout this report.

As a company, we are committed to transparency in our interactions with stakeholders and to continuously improving the quality and content of our sustainability reporting and other public disclosures. We hope you will find this report to be a valuable resource in following our progress in this important area.



**Charles D. Davidson**  
Chairman and Chief Executive Officer

# CORE VALUES

**Our core values guide how we do business. They provide the foundation upon which trust can be built and maintained with our stakeholders.**

## Integrity

Being fair, honest, ethical and transparent in dealing with all stakeholders. One's word is their bond.

## Caring

Being genuine and authentic, thinking of the needs of others. Respectful of yourself, others and the environment. Committed to make a positive impact on people and communities we touch.

## Creativity

Seeing endless possibilities. Continuously innovating to provide the fuel for sustainable, extraordinary performance.

## Wisdom

Joining of knowledge, insight and judgment leading to deliberate, thoughtful decisions that positively impact outcomes today and into the future.

## Agility

Always anticipating the need for change. Seizing opportunities by being flexible and responsive.

## Excellence

Setting the performance standard through uncompromising demand for being best in class in all we do.

## Alignment

Working as one to achieve extraordinary results.

# SUSTAINABILITY COMMITMENTS

**Noble Energy's purpose - *Energizing the World, Bettering People's Lives*<sup>®</sup> - embraces the company's goal to safely and responsibly provide energy to the world through oil and natural gas exploration and production while positively influencing the lives of our stakeholders. At Noble Energy, we are committed to:**

- Conducting our business in compliance with legal and regulatory requirements, and in a transparent manner.
- Protecting workers, the environment and local communities where we operate.
- Developing and maintaining strong relationships with our contractors to achieve operational and environmental, health and safety (EHS) excellence.
- Reducing our impact on the environment by developing and applying best-practice technologies, including:
  - responsible water sourcing, transport, use, treatment, recycling and disposal; and
  - management of greenhouse gas (GHG) emissions.
- Fostering a culture where innovation is embraced and a learning environment exists to maximize everyone's potential.
- Respecting human rights and the cultures of communities where we operate.
- Engaging with stakeholders to better understand their perspectives, to inform decision-making and to seek mutually beneficial solutions.
- Making social investments that create value for stakeholders on a sustainable basis and are consistent with our business objectives.



# 5 Core Operating Areas



## 1. Denver-Julesburg Basin

Active since 2005

*Revenues:*  
\$1,390 million

*Sales Volumes:*  
77 MBoe/d

*Proved Reserves:*  
358 MMBoe

*Employees:*  
807

## 2. Marcellus Shale

Active since 2011

*Revenues:*  
\$96 million

*Sales Volumes:*  
15 MBoe/d

*Proved Reserves:*  
146 MMBoe

*Employees:*  
81

## 3. Gulf of Mexico

Active since 1968

*Revenues:*  
\$584 million

*Sales Volumes:*  
18 MBoe/d

*Proved Reserves:*  
23 MMBoe

*Employees:*  
65

## 4. West Africa

Active since 1990

*Revenues:*  
\$1,343 million

*Sales Volumes:*  
72 MBoe/d

*Proved Reserves:*  
220 MMBoe

*Employees:*  
91

## 5. Eastern Mediterranean

Active since 1999

*Revenues:*  
\$178 million

*Sales Volumes:*  
17 MBoe/d

*Proved Reserves:*  
378 MMBoe

*Employees:*  
126

Additional information about our core operating areas and related data is provided throughout this report.

# Operational Highlights

## General Company Information

Noble Energy, Inc. is a leading independent energy company engaged in worldwide oil and natural gas exploration and production. An S&P 500 company with proved reserves of 1.2 billion barrels of oil equivalent (Boe), Noble Energy had assets totaling more than \$17 billion at year-end 2012.

## Core Area Activity

The company's broad-based operations include the exploration, development and production of crude oil and natural gas in the United States and internationally, with a focus on five core operating areas:

- Denver-Julesburg (DJ) Basin
- Marcellus Shale
- Deepwater Gulf of Mexico (GOM)
- West Africa
- Eastern Mediterranean

## New Ventures

During 2012, we expanded our global presence by adding new venture opportunities in Sierra Leone and the Falkland Islands. In 2013, we will test new venture prospects in Nevada, a large tight oil play, and in Nicaragua, an offshore prospect potentially one billion barrels in size.

Outside of our core areas, we continued to high-grade our portfolio through select divestitures, allowing us to focus on high-potential new venture opportunities. Non-core asset divestitures in 2012 resulted in net proceeds totaling \$1.2 billion.

This report includes sustainability highlights from each core operating area, and information on new ventures that present unique exploration opportunities.

## Noble Energy in 2012

### Financial:

(\$ in millions)

Total Revenues	\$ 4,223
Net Income	\$ 1,027
Total Assets	\$ 17,554
Long-Term Debt	\$ 3,736
Capital Expenditures (cash basis)	\$ 3,650

### Operational:

Number of Employees	2,190
Consolidated Crude Oil Sales (MBbl/d)	86
Consolidated Natural Gas Sales (MMcf/d)	774
Consolidated Natural Gas Liquids Sales (MBbl/d)	16
Total Proved Reserves (MMBoe)	1,184
Shareholder Ownership (% institutional)	94

*Noble Energy's Form 10-K for 2012, as filed with the U.S. Securities and Exchange Commission, provides additional operational and financial information and can be found on the company's website at [www.nobleenergyinc.com](http://www.nobleenergyinc.com).*

# Minimized Footprint. Maximized Value.

The DJ Basin, where Noble Energy has an acreage position of approximately 750,000 net acres, is an important U.S. crude oil play that is key to the company's production growth. We strive to improve our operational performance in the basin while minimizing environmental impacts.

## Respecting the Environment

### *Reducing Truck Traffic*

To reduce truck traffic and noise, cut emissions and minimize land use in the DJ Basin, Noble Energy has installed underground pipelines and gathering systems to transport oil and recycled or sourced water from public or private supplies to well sites. In 2012, we eliminated 42,000 water truck trips by transporting 28 percent of the water used for our hydraulic fracturing through pipelines. Over the next decade, the use of EcoNodes and pipelines in our operations are expected to reduce oil and hydraulic fracturing water truck trips by more than 200 million road miles, eliminating approximately 700,000 tons of carbon dioxide (CO<sub>2</sub>) emissions.

### *Respecting Water Resources*

Noble Energy's Life-Cycle Water Management Program helps the company identify and implement responsible water sourcing, transport, use, treatment, recycling and disposal methods. Since 2011, the company's efforts have resulted in a reduction of more than 10 percent in the volume of water consumed per well. The decrease in water consumption provides another opportunity to reduce truck mileage. This would lead to an average annual reduction of approximately 45,000 tons of CO<sub>2</sub> emissions. For more information about our approach to water management and our involvement in local research activities, see discussion beginning on page 25.

### *Utilizing Natural Gas*

Compared to other fuels, natural gas emits relatively low levels of pollutants such as sulfur oxide (SO<sub>x</sub>), nitrogen oxide (NO<sub>x</sub>) and carbon compounds. In addition to being cleaner sources of energy, compressed natural gas (CNG) and liquefied natural gas (LNG) are affordable, domestic alternatives to imported fuels. As part of Noble Energy's strategy to reduce GHG emissions, we continue to support the expanded use of CNG and LNG. In 2012, the company utilized one LNG rig in Colorado and four dual-fuel (diesel and LNG) rigs in its other U.S. operations.

In 2012, Noble Energy converted 19 trucks in the DJ Basin to run on CNG. In total, we have 33 bi-fuel trucks, representing more than 10 percent of our total fleet in the DJ Basin. The goal is to convert all the trucks in our fleet to CNG as fueling station accessibility allows.

In addition to converting the Noble Energy fleet, the company encourages its service providers to utilize CNG and LNG. Noble Energy partnered with Renewable Fiber, one of its water haulers in the DJ Basin, to help it purchase 10 LNG-powered trucks to haul water. These trucks help Renewable Fiber reduce its emissions, while also reducing costs since LNG fuel is less expensive than traditional diesel fuel.

Noble Energy also announced the construction of a \$50 million LNG plant in conjunction with the company's Keota gas processing plant in Weld County. This LNG facility, the first of its kind in Colorado, will have the capacity to produce up to 100,000 gallons of LNG per day. We plan

to use production from the facility to fuel the company's rigs and other heavy equipment used in DJ Basin operations.

## Bettering People's Lives

Noble Energy continues to support the DJ Basin community through local educational and business development opportunities. The company committed \$5 million over five years to two Weld County school districts to support the conversion and purchase of new CNG school buses. The lower cost of CNG is expected to save the districts an average of \$3,500 per bus each year. This project supports the school districts as they replace aging buses, reduces emissions and helps the region expand the market for CNG. The first seven buses will be delivered in early 2013.

## 2012 DJ Basin Operational Highlights

### *Financial (U.S. dollars)*

Revenues from sales of oil, natural gas and natural gas liquids (NGLs)	\$ 1,390 million
------------------------------------------------------------------------	------------------

Capital expenditures	\$ 1,448 million
----------------------	------------------

### *Local Statistics*

Employees	807*
-----------	------

Average number of rigs running in 2012	10
----------------------------------------	----

Small, minority- and women-owned suppliers	103
--------------------------------------------	-----

Community investments	\$ 2.50 million
-----------------------	-----------------

*\*Includes employees that support DJ Basin activities less than 100% of the time.*

**In any industry there are good companies, there are bad companies and there are a few great companies. And I don't know of another oil and gas company that holds themselves to higher standards than Noble Energy does. They're running this company the way every company should be run.**

- Colorado Governor John Hickenlooper,  
Greeley Operations Center  
Grand Opening Event,  
May 22, 2012

# TRANSPARENT. BY DESIGN.



**Noble Energy is committed to a solid foundation of integrity, reliability and transparency in our disclosures to the public.**

[www.nobleenergyinc.com/responsibility](http://www.nobleenergyinc.com/responsibility)

Our corporate governance practices are designed to ensure that our business is conducted in compliance with legal and regulatory obligations. The Noble Energy Code of Business Conduct and Ethics is an integral part of our governance structure and is available in several languages at [www.nobleenergyinc.com](http://www.nobleenergyinc.com).

We have developed policies that support anti-corruption law compliance in areas such as giving and receiving gifts, and travel and hospitality. These policies apply to our dealings with commercial vendors as well as government officials. The company has a policy prohibiting facilitation payments to non-U.S. government officials, with the exception of payments made to avoid imminent threats to the health, safety or welfare of employees.

Noble Energy's portfolio of assets is evolving. As the company grows globally, the number and scope of laws and regulations with which we must comply increases. In 2012, we expanded our Global Compliance Department to better assess and address the laws and regulations for each core area.

#### **Board of Directors and Committee Activities**

Our Board of Directors (Board) and its committees are the foundation of our governance structure, and provide strategic oversight of our global activities. Eight of our nine directors in 2012 were independent under New York Stock Exchange and Securities and Exchange Commission (SEC) requirements. Their collaboration with company management brings focus to our sustainability and transparency efforts.

Here are some of the areas addressed taken by Board committees during 2012:

- Our Audit Committee continued its emphasis on the company's financial reporting and controls, global compliance program and oil and natural gas reserves reporting.
- Our Compensation, Benefits and Stock Option Committee continued to evaluate ways to better link executive compensation to company performance. This led to changes for 2013 that include adding performance criteria to the company's

#### **RISK MANAGEMENT OVERSIGHT**

Our risk management program is overseen by our Board of Directors and its committees, with support from management and external consultants:

- Board committees, which meet regularly and report back to the full Board, play significant roles in carrying out the risk oversight function.
- Company management is charged with managing risk through robust internal processes and controls.
- External consultants provide independent perspectives on our risk management program and assist in the implementation of enhancements.

Additional information on our approach to risk management is provided in the Proxy Statement for our 2013 Annual Meeting of Stockholders.

# THIRD-PARTY DUE DILIGENCE AND MONITORING

In 2012, Noble Energy worked with a vendor specialist to develop and implement a web-based, third-party due diligence certification application. The company also redesigned and streamlined its due diligence review and approval process to strengthen the monitoring of risk assessment, training, investigation, review and analysis, approvals and recertification.



short- and long-term incentive plans, and amending the company's Code of Business Conduct and Ethics to allow the committee or Board to recoup (or "claw back") compensation in cases involving restatement of financials or oil and natural gas reserves, or material non-compliance with our codes of ethics.

- Our Corporate Governance and Nominating Committee amended its charter to include an oversight role with respect to the company's political activity.
- Our Environment, Health and Safety Committee increased its focus on the company's corporate social responsibility initiatives, and on strategic challenges in the areas of environment, health and safety.

The structure and function of our Board and its committees, and their respective roles in managing the risks that we face as a company, are presented in greater detail in the Proxy Statement for our 2013 Annual Meeting of Stockholders.

## Assessing Business Opportunities

Each new area that Noble Energy considers for exploration and development presents unique opportunities and challenges. The company analyzes technical feasibility, commercial attractiveness and above-ground risks. Our Board must also approve the company's entry into a new country.

## Compliance and Ethics

Noble Energy's risk management program is supported by the company's Board, executive management, employees and outside consultants. Compliance and ethics are an integral part of that program. Three areas were emphasized as a part of our 2012 compliance and ethics effort.

### Anti-Corruption Training

In 2012, 512 Noble Energy employees and contractors received anti-corruption training in person. Another 1,029 employees were trained through computer-based programs. This training is designed to promote awareness of corruption risks, help recipients identify warning signs of potential corruption in their daily work, and respond appropriately.

### Compliance Helpline

Noble Energy enhanced its 24-hour Compliance Helpline to make it easier for employees to alert management of compliance concerns. Employees may contact the helpline via a toll-free U.S. telephone number or a dedicated website. The helpline phone numbers are available on the company intranet for domestic and international employees, and support is available in several languages.

### Third-Party Due Diligence

As a part of risk management, we conduct due diligence reviews on third-party agents and potential joint venture partners who may interact with non-U.S. government officials (in any non-U.S. location). Due diligence reviews are also conducted on contractors and vendors for certain high-risk countries. The review, approval and monitoring requirements for third-party relationships are tailored to address the specific risks posed by the type of third party under consideration in a particular location.

### Revenue Transparency

Noble Energy is a member of the Extractive Industries Transparency Initiative (EITI), which supports enhanced governance in resource-rich countries by promoting the disclosure and authentication of company payments and government revenue receipts from oil, natural gas and mineral development. At year-end 2012, Noble Energy was not operating in any EITI-compliant countries. To further support EITI, Noble Energy's chief compliance officer serves on the multi-sector U.S. EITI Advisory Committee.

On July 21, 2010, President Obama signed into law the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act). The resource extraction rule of the Dodd-Frank Act may require Noble Energy and other resource extraction issuers to publish payments to governments including taxes, royalties, bonuses, license fees, production entitlements and infrastructure improvements. Noble Energy supports the overall objectives of increasing transparency of payments to governments.

Taxes and other revenues constitute an important portion of the economic contribution of Noble Energy in countries where we operate. The broader economic benefits we provide have significant positive impacts as well. These include employment opportunities, training and social investments.

### Public Policy Engagement

#### Oversight

Company management is responsible for managing risk through internal processes and controls which, in the case of the company's public policy efforts, address:

- Political law compliance;
- Participation in trade associations and other tax-exempt organizations engaged in public policy issues;
- Other corporate funds used for political spending.

The Board's Corporate Governance and Nominating Committee provides oversight of the company's political activity.

#### Political Law Compliance Program

Noble Energy's Political Law Compliance Program provides continued compliance with U.S. campaign finance, lobbying, gift and entertainment laws and regulations at the federal, state and local level, as well as guidelines for employee representation and participation in trade associations.

#### Lobbying Expenses

Noble Energy is committed to compliance with federal laws and regulations regarding the disclosure of lobbying expenses. These expenses totaled approximately \$2.14 million in 2012, and included time and travel associated with lobbying activity and trade association memberships. Federal lobbying efforts in 2012 focused on onshore operations, Israeli natural gas development, hydraulic fracturing stimulation, Gulf of Mexico offshore liability, the Dodd-Frank Act and tax reform. The full list of federal issues lobbied by Noble Energy is available on the U.S. Senate website at [www.senate.gov/lobby](http://www.senate.gov/lobby).

#### Political Action Committee and Political Activity

Formed in 2010, the Noble Energy Political Action Committee (NEPAC) provides employees an opportunity to contribute to candidates for U.S. federal and state elected office. Funds in the NEPAC come directly from employee contributions. Beyond administrative support permitted under U.S. election laws, no corporate funds are used to support the NEPAC. Participation in the NEPAC is voluntary. Its activities are governed by a voluntary employee board of directors that manages funds, approves budget and considers contributions to individual candidates.

A list of our 2012 NEPAC contributions is available on our website at [www.nobleenergyinc.com/responsibility](http://www.nobleenergyinc.com/responsibility).

#### Contributions

A list of Noble Energy's contributions to trade associations, 501(c)(4) organizations,<sup>(1)</sup> 527 organizations<sup>(2)</sup> and political action committees, is available and periodically updated on our website at [www.nobleenergyinc.com/responsibility](http://www.nobleenergyinc.com/responsibility).<sup>(3)</sup>

<sup>(1)</sup> Refers to organizations established under Section 501(c)(4) of the Internal Revenue Code.

<sup>(2)</sup> Refers to organizations established under Section 527 of the Internal Revenue Code.

<sup>(3)</sup> U.S. federal, state or local corporate political contributions must be reviewed by the Corporate Affairs Department and approved by the Chief Executive Officer.

## 2012 COMPLIANCE AND ETHICS SUMMIT

In November 2012, Noble Energy held its third annual Compliance and Ethics Summit. Representing seven countries (Cameroon, China, Cyprus, Equatorial Guinea, Israel, Nicaragua and the U.S.), 140 of the company's compliance and operations leaders were in attendance. These summits provide a forum for management to reinforce the importance of compliance and ethics, and an opportunity for employees to learn about and discuss trends and recent developments.

The 2012 summit featured prominent speakers from a diverse set of organizations including Transparency International, Human Rights Watch and top U.S. law firms. Presentations addressed compliance and ethics considerations in areas such as corporate social responsibility, human rights, political activity and inclusiveness in the global workplace.

“

**Compliance encompasses all groups, departments, and individuals. I need to remind my team and co-workers that they are empowered.**

*- Employee reflections following 2012 Compliance and Ethics Summit*

”

# Compliance

# Welcome to the Neighborhood.

Through a 2011 joint venture with CONSOL Energy, Inc., Noble Energy entered the Marcellus Shale – one of the largest natural gas shale plays in the United States.

Before launching operations in the Marcellus Shale, we listened to the local community to gain perspectives and understand concerns. We found that stakeholders expressed support for development, but were concerned about the impacts of increased traffic and heavy equipment on local infrastructure and of oil and natural gas operations on the environment. We used the information gathered to modify our operational plans in ways that help mitigate community concerns.

To build on what we heard and increase local awareness of how we operate, we hosted three drilling rig tours in 2012 – one for a group of local residents, one with local and regional government representatives, and one for the junior class of Cameron High School in Marshall County, West Virginia. These tours provided participants an opportunity to see firsthand how drilling rigs operate, and ask questions about oil and natural gas drilling, development and distribution.

## Respecting the Environment

To address the Marcellus Shale community's concerns about heavy equipment and large trucks on roads, we developed a Road Use Commitment to:

- Identify and use reputable and certified contractors for large equipment and supply transportation.
- Coordinate with school districts and communities to avoid heavy equipment and truck movement during school transportation and peak traffic hours, and use staging areas to reduce the number of trucks on the road.

- Pledge to repair property damage by taking a “we break it, we fix it” approach, acknowledging issues and working with stakeholders to address them.

We also developed workshops to train first responders on potential scenarios associated with oil and natural gas exploration and production operations. See pages 19–20 for more information on our approach to emergency planning and corresponding initiatives.

Noble Energy emphasizes fresh water quality, reuse and access in and around the communities where it operates. We take baseline samples of water quality around onshore wells before drilling begins to help us make informed decisions about future water use. We strive for reuse and zero disposal to reduce the amount of water required by our operations. For additional information about Noble Energy's approach to water management, see page 25.

Noble Energy is committed to minimizing its physical footprint. We endeavor to drill multiple wells from a single well pad, and transport liquids via pipeline, to help reduce truck traffic and road damage and have brought our DJ Basin practices in these areas to our Marcellus Shale operations. We are working to develop natural gas as a transportation fuel. We participate in the Natural Gas Vehicle Task Force launched in 2012 by West Virginia Governor Earl Ray Tomblin to assess the feasibility of converting state, county and public vehicles to run on compressed natural gas and identify infrastructure needs such as fueling stations.

## Hiring Locally

At Noble Energy, we believe that hiring and training local workers is one of the most sustainable investments we can make in a community. Approximately 80 percent of the more than 80 employees we hired to support our Marcellus Shale operations in 2012 are from the Pennsylvania, West Virginia and Ohio areas. Communicating with local communities, and demonstrating the company's commitment to safety and responsible operations as a long-term partner in the region, were key to this recruitment success.

As part of the company's continuing efforts to invest in the local workforce and future generations of workers, Noble Energy worked with area communities on education and outreach opportunities through corporate partnership programs and investments. This included collaboration with regional community colleges to develop an oil and natural gas training and technology program that will begin in 2013.

## Bettering People's Lives

As Noble Energy ramped up Marcellus Shale operations in 2012, we also commenced our community social investment program. During a six-month period in 2012, Noble Energy made donations to support restoration efforts after a severe storm caused power outages. We also supported various community-focused and student scholarship programs including 4-H and Future Farmers of America.

## 2012 Marcellus Shale Operational Highlights

### *Financial (U.S. dollars)*

Revenues from sales of oil, natural gas and natural gas liquids (NGLs)	\$ 96 million
Capital expenditures	\$ 300 million

### *Local Statistics*

Employees	81
Average number of rigs running in 2012	4
Small, minority- and women-owned suppliers	60
Community investments	\$ 105,000



**Real-world experiences are vital for [our students'] future. The drill pad tour this past fall with Noble Energy... was exciting and sparked students' interest. They discovered the wide variety of careers possible in the energy field, and the natural gas industry in particular.**

- Kelley Frazier,  
Cameron High School Counselor





# NO HARM

## PROVIDING A SAFE WORK ENVIRONMENT

# SAFE. BY DESIGN.

**Noble Energy is committed to maintaining a sustainable safety culture – one that fosters a safe, efficient and environmentally sound workplace.**

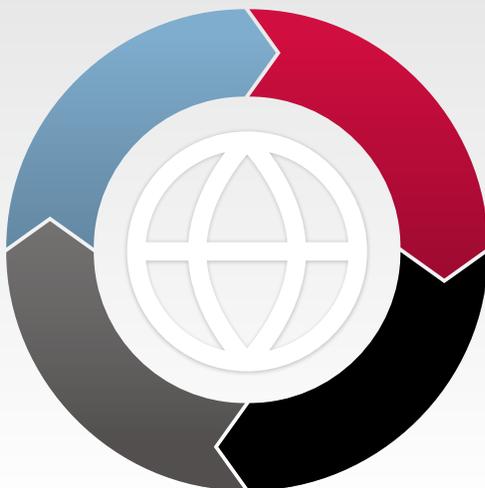
The company operates under a Global Environmental, Health and Safety Management System (GMS) that establishes expectations for managing EHS risks in operations worldwide. Noble Energy's GMS framework integrates principles from a number of industry and regulatory sources, including the U.S. Occupational Safety and Health Administration (OSHA), U.S. Environmental Protection Agency (U.S. EPA), International Labour Organization, Canadian Standards Association and World Bank. We review the GMS framework annually and have a third-party review it bi-annually to ensure consistency with EHS laws, regulations and industry best practices.

### Safety Performance

Noble Energy develops corporate safety goals and objectives for employees and contractors alike. To underscore its importance, safety performance is considered as a part of the company's compensation program. The company utilizes a variety of safety metrics including lost-time incidents\*, total recordable incidents\*, fatalities\*, near misses, incidents requiring first aid\*, work-related illnesses\*, equipment and vehicle damages, fire, unintentional discharges and days of restricted duty at work\* for consistent benchmarking.

*\*As defined by OSHA standards.*

### GLOBAL MANAGEMENT SYSTEM



- **Prepare**
  - » Management Commitment and Employee Participation
  - » Legal Aspects and Document Control
  - » Safe Work and Operating Practices
  - » Process Safety and Environmental Information
  - » Emergency Preparedness and Community Awareness
- **Execute**
  - » Safety and Environmental Training
  - » Contractor Safety Management
  - » Pre-startup Review
  - » Management of Change
  - » Risk Assessment and Management
- **Verify**
  - » Performance Monitoring and Measuring
  - » Incident Reporting, Analysis and Corrective Action
  - » Management System Compliance Audit
- **Perform**
  - » Operational Integrity and Continual Improvement

# EMPLOYEES AND CONTRACTORS

## EMPLOYEE SAFETY

In 2012, Noble Energy employees worked over 3.9 million hours and had seven recordable incidents – two of which were lost-time incidents – achieving a total recordable incident rate (TRIR) of 0.35.

## CONTRACTOR SAFETY

In 2012, Noble Energy contractors worked 16.7 million man hours and achieved a TRIR of 0.51 with 14 lost-time incidents.

## EMPLOYEE AND CONTRACTOR SAFETY DATA

	2010	2011	2012
Total Lost-time Incidents	10	14	16
Total Recordable Incidents	37	55	50
Combined	0.56	0.72	0.48
Total Days Away from Work Incident Rate (DWIR)	0.15	0.18	0.15



# SAFETY IN NUMBERS

Noble Energy employees and contractors worked more than 20 million man hours and achieved a combined total recordable incident rate (TRIR) of 0.48 in 2012. Improvements in contractor engagement and investment in hazard-recognition training contributed significantly to this result.

### Employee Health and Safety Participation

Noble Energy promotes a “stop work” culture among its employees and contractors. We encourage personnel to stop work in response to observed dangers to people or the environment, or as necessary to ensure regulatory compliance. Periodic “stop work” drills are conducted to remind and empower employees and contractors in this area. See an example of “stop work” in action on page 19.

We also designate “EHS Champions” – office and operational personnel who voluntarily drive EHS commitment and leadership at the site level. EHS Champions help ensure policy compliance, disseminate EHS knowledge and encourage continuous improvement. To promote knowledge sharing and alignment on a broader scale, select EHS Champions serve on company Safety and Environment Councils that meet periodically to share experiences, issues and concerns.

In the U.S., Noble Energy holds safety summits to discuss performance expectations and provide a forum for employees to discuss EHS objectives, challenges and results. Noble Energy also holds annual contractor symposiums in its operating areas to review safety behavior and performance goals. The largest symposium in 2012 was attended by 311 contractors and employees. Noble Energy plans to extend this program to its international operating areas in the future.

### EHS Contractor Engagement

Contractors help Noble Energy carry out its business operations and achieve EHS excellence. To improve consistency in contractor evaluation, selection and administration, the company

**“Noble Energy’s local, regional and corporate offices have worked hand-in-hand with us to create a work environment that is safe and efficient. As a result of this collective effort, our insurance and EHS programs now meet highest standards for the oil and natural gas industry.”**

*- Peter C. Allee and Philip G. Pucel,  
Operating Partners, H2X LLC*

# SAFETY IN ACTION:

## A NEAR-MISS STORY

Noble Energy views near-miss incidents as valuable learning opportunities to identify and address potential hazards. During a 2012 pipeline installation project near Platteville, Colorado, a Noble Energy employee exercised “stop work” authority when he recognized that a track hoe within striking distance of the pipe did not have a spotter for its operator. Job activity was suspended, and the work crew gathered to discuss why the situation presented a hazard, the potential consequences and options for mitigation. The near miss was also shared at subsequent safety meetings and with employees worldwide.



implemented a contractor engagement program in 2012. This program involves a three-step management cycle that provides a matrix for continuous improvement through performance monitoring, categorization and evaluation. Initial implementation of this program focused on U.S. operations and included more than 1,300 companies.

The matrix assessment process allows Noble Energy to identify actions that contractors must take to meet EHS requirements before they perform work for Noble Energy. Up-front communication of this kind often results in contractors exceeding expectations, which creates an environment of continual performance improvement. These efforts also help build strong local relationships with contractors.

### Hazard Recognition Campaign

In 2012, a group of 20 Noble Energy employees from a variety of disciplines launched a Hazard Recognition Campaign. The idea was to promote greater hazard awareness, ranging from noise to pathogens, and knowledge of mitigation practices. Building on previous initiatives – including hazard

hunts and safety leadership training – the group developed Hazard Recognition workshops to teach multi-disciplinary groups of employees how to better identify, communicate and mitigate safety risks.

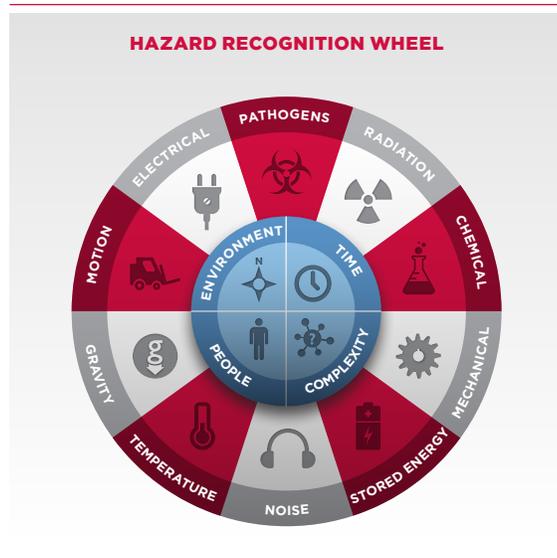
### Security

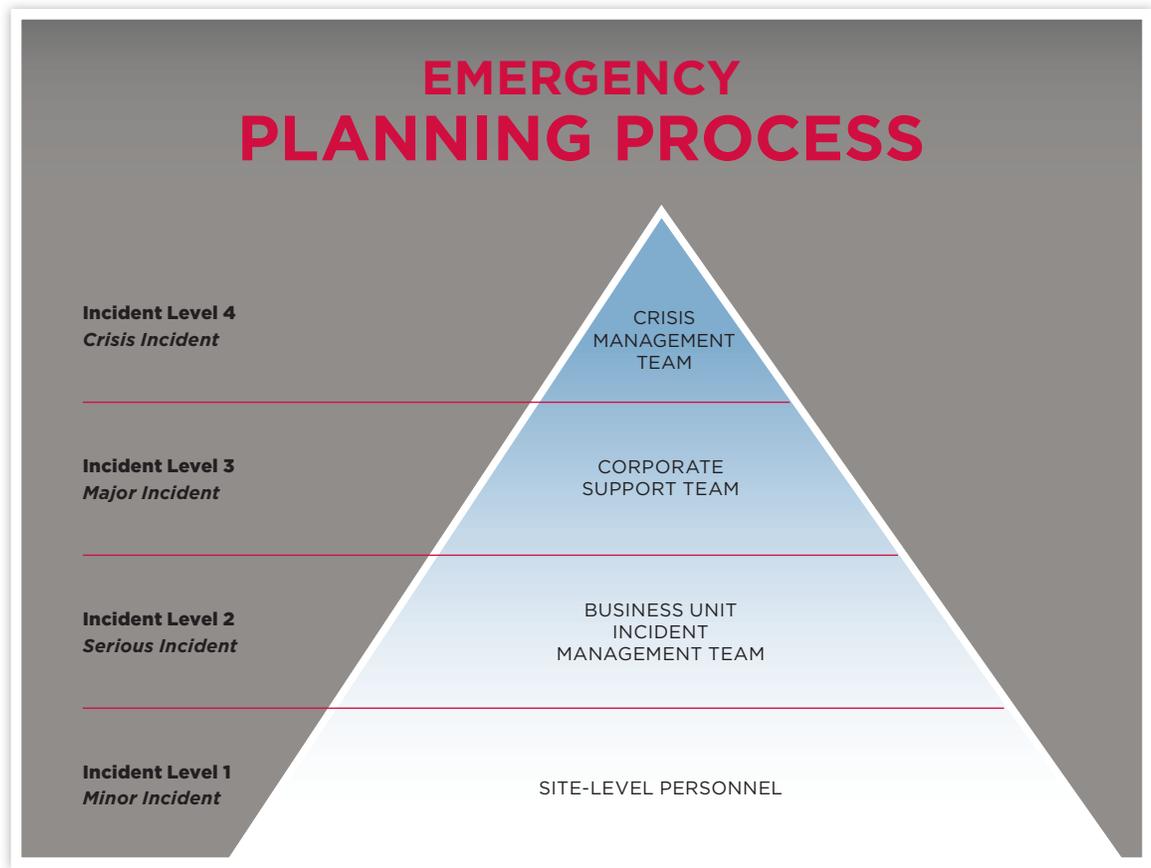
We are guided by the Voluntary Principles on Security and Human Rights, and continue to assess ways to incorporate human rights considerations into our security strategy and integrate that strategy throughout our business. In-house professionals with expertise in physical and cyber-security work with a network of key security partners to oversee the company’s efforts and mitigation strategies.

### Emergency Management

Under the Emergency Preparedness and Community Awareness element of the GMS framework, we develop and implement emergency management plans for the company and each of our operational areas. The plans assign authority and responsibility, as needed, to establish timely and effective emergency response behaviors.

In 2012, we strengthened the skills and capabilities of our first responders. More than 200 people were trained in the basic principles of Incident Command, which focuses on initial response actions. More than 30 of those 200 employees were trained in advanced Incident Command, which focuses on how to sustain the incident response over a longer period of time. The company conducted nine simulated response exercises that engaged business personnel, response contractors and corporate leadership. These exercises provide opportunities to refine the company’s response effectiveness.





In addition to these exercises, Noble Energy advanced its crisis management planning preparation for incidents that reach levels 3 (major) and 4 (crisis). We also built out a communications plan to better support crisis management activities. Both plans were tested in 2012 and lessons learned from the exercises were leveraged to strengthen both plans.

#### **Enhancing Coordination with Local Emergency Responders**

In 2012, Noble Energy continued its efforts to promote oil field awareness among local first responders across its operations. The company held meetings with a number of local responders to explain the risks and emergencies associated with company operations, assess local equipment and capabilities and pave the way for sustained engagement. Police, fire and medical responders learned about the different phases of Noble Energy activities – from seismic exploration to pipeline delivery – and the potential hazards that may be encountered on-site.

#### **Storm Preparedness**

As an example of Noble Energy's storm preparedness emergency management in the Marcellus Shale, the company helped prepare for Hurricane Sandy, which struck the U.S. East Coast in October 2012.

Before Hurricane Sandy hit, the Incident Management Team assessed operational risks and initiated preparedness actions focused on the safety of employees, contractors and communities; preventing harm to the environment; and protecting company assets. Drilling activity was suspended for two days while the company reduced the wind profile of each of its operational sites.

Hurricane Sandy produced winds in excess of 55 miles per hour, which could have threatened the safety of our personnel and operations.

### Subsea Capping and Containment Capabilities

Building on lessons learned from the 2010 Macondo oil spill in the Gulf of Mexico, Noble Energy saw an opportunity to review and enhance its global approach to emergency management. This included subsea well containment, oil spill response and shoreline-protection capabilities. The company strives to be a leader in well containment, working domestically with the Helix Well Containment Group (HWCG) and internationally with the Subsea Well Response Project (SWRP).

#### SUBSEA WELL RESPONSE PROJECT CAPPING STACK



*This diagram is a representation of the SWRP's capping stack, available in international operations.*

*From SWRP website: <http://subseawellresponse.com/intervention-system/capping-stack-toolboxes/>*

## IT STARTS WITH SAFETY:

### DRILL WELL ON PAPER (DWOP)

The purpose of the “Drill Well on Paper” (DWOP) workshops is to ensure a safe well design and plan that, when executed, will accomplish its objectives while providing for participant input prior to drilling the well. Noble Energy conducts DWOP workshops in offshore and onshore operations to engage key stakeholders in the well design and well execution plan. The goal is to involve a broad group and establish a sense of ownership in the plan. The key stakeholders include the Noble Energy well planning team, the drilling contractor and other service providers. The process accesses the group’s collective expertise to ensure appropriate well design, identify and mitigate major risks, incorporate lessons learned and develop written procedures to execute the well plan.

During offshore well DWOP workshops, the cross-disciplinary team discusses topics beyond the technical aspects of the well such as health and safety of personnel, protection of the environment, regulatory requirements, emergency response, waste management and incident reporting. Well-specific technical discussions explain the geology and well construction to those who will be executing the plan. Focus areas include well control and well control barriers maintenance. Breakout sessions allow groups to review the detailed procedure and give feedback where required. Following the DWOP, input received during the process is used to finalize the well execution procedure. These workshops help the company achieve safe operations by promoting communication and ensuring widespread understanding of roles and responsibilities prior to initiating work. In order to include all rig crews, for offshore operations, there are two DWOP workshops for every well.

Noble Energy utilizes a similar approach prior to drilling many of its onshore wells. Due to the nature of onshore drilling, this session may include review of several wells at one time. In addition, personnel walk the project site and conduct a review of lessons learned at the end of each phase of construction – from drilling to production. In 2012, Noble Energy conducted three of these sessions in the Marcellus Shale.

## SPOTLIGHT ON DEEPWATER GULF OF MEXICO

# Continuing to Lead.

**Noble Energy helped lead the industry back to operating in the Gulf of Mexico in 2011 when, in the wake of the Macondo oil spill, the company was awarded the first post-moratorium deepwater Gulf of Mexico drilling permit. We continually enhance our drilling practices and deploy systems designed to improve safety, spill response and containment.**

## Enhancements in Well Containment Planning

Noble Energy is one of 15 companies that came together to form the HWCG, a nonprofit consortium of deepwater operators and service companies that provides expertise and resources in support of rapid intervention, response and containment. In 2012, Noble Energy participated in a joint HWCG industry task force aimed at developing a well-containment screening tool. The resulting tool enables operators to assess wellbore integrity and determine if the wellbore can be shut in or is a "cap and flow\*" candidate.

The Bureau of Safety and Environmental Enforcement (BSEE) now requires operators to submit the completed screening tool when applying for a drilling permit. Before regulators approve the permit, the well design must pass one of three levels:

- Level 1: assumes natural gas or light oil gradients for calculations to determine wellbore integrity.
- Level 2: requires modeling to determine fluid gradients projected in a worst-case, uncontrolled flow situation, and more advanced calculations to determine wellbore survivability.
- Level 3: evaluates whether, in a Level 2 scenario, the well design will allow cap and flow.

## Improving Team Coordination

Comprehensive planning and team coordination are important to ensuring safe operations. To drill safely in a deepwater offshore environment, Noble Energy's communication with contractors has led to more integrated drilling teams. Teams include geoscientists who provide input into well design based on the geology and geophysics of the area, drilling engineers who design the well, and rig crew members who drill the well.

The drilling team at Noble Energy's Big Bend well in the deepwater Gulf of Mexico held reviews prior to drilling each section of the well. During these sessions, the team reviewed the expected geology of each section of the planned well, evaluated potential drilling risks and coordinated mitigation plans. This team integration contributes to a collaborative environment and enhances drilling preparations.

## Adjusting for Sand Pressures at Big Bend

Understanding potential shallow drilling hazards, such as gas reservoirs or abnormal pressure, is a part of safe drilling preparations. Given the likelihood of encountering steeply inclined sand layers or zones that can present drilling hazards due to elevated pressures, the company modeled anticipated formation fluid pressures before drilling Big Bend. This pre-drill modeling provided a range of potential pressure levels, which were considered when drilling the well.

During drilling, the team encountered high fluid pressures. The robust pre-drill model and corresponding well design, combined with a clearly defined pressure monitoring program, enabled the team to make adjustments. The outcome was a safe and successfully drilled well that improved understanding of multiple reservoir pressure compartments.

## Understanding and Minimizing Environmental Impacts

Noble Energy conducts underwater surveys in prospective areas, not only to meet government requirements, but to help well planning teams select well locations that minimize hazards or impacts to environmentally sensitive areas. State-of-the-art equipment is deployed on a torpedo-like autonomous underwater vehicle (AUV) that surveys the sea floor to inform offshore crews about the underwater environment. If the sea floor environment appears suitable for live organisms, a remotely operated vehicle (ROV) is deployed to conduct site investigations to determine whether protected species are present on the seafloor. Where such species are found, survey results are shared with federal regulators and drilling plans are modified to avoid any adverse impacts.

\*Design that allows deployment, if flow is uncontrolled, of a well capping stack to direct fluids to a vessel for delivery to an onshore facility.

**2012 Gulf of Mexico Operational Highlights*****Financial (U.S. dollars)***

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Revenues from sales of oil, natural gas and natural gas liquids (NGLs)	\$ 584 million
Capital expenditures	\$ 260 million

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***Local Statistics***

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Employees	65
Wells drilled	2
Small, minority- and women-owned suppliers	11
Community investments*	\$ -

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*\*Onshore U.S. community investments are captured in the operational highlights tables for the company's DJ Basin and Marcellus Shale core areas.*



# RESPONSIBLE

RESPECTING THE ENVIRONMENT

# COMMITTED. BY DESIGN.

**Noble Energy is committed to developing energy resources in a responsible manner and working diligently to reduce risks to the environment and human health. To mitigate risk while protecting the environment and communities where we operate, the company complies with applicable EHS laws, and implements standards where laws do not exist.**

**EHSR Compliance**

Noble Energy’s Environmental Health and Safety Regulatory (EHSR) audit and compliance team facilitates EHSR audits, typically utilizing third-party expertise, to assess compliance with regulations. The company uses a risk-based approach on an annual basis to determine audit sites and processes. The annual audit schedule is reviewed by the EHS Committee of the company’s Board of Directors.

The company promptly investigates potential incidents of non-compliance with local, state or federal requirements. In 2012, alleged violations of environmental regulations resulted in payment of \$40,300 in civil fines and penalties.

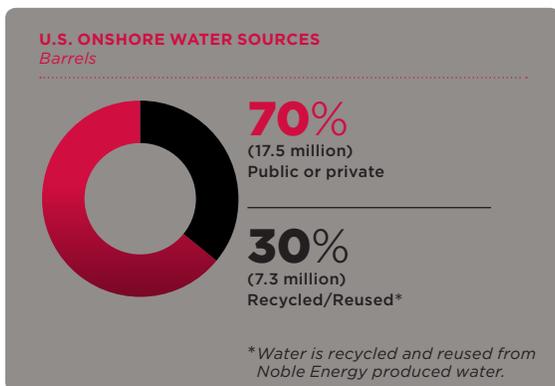
**Applying a Water Management Strategy**

Water is used during many oil and natural gas activities including drilling and completion of new wells, maintenance and upgrades on existing wells, site construction and for sanitary purposes. We recognize the importance of protecting water quality and availability, and of actively managing and conserving water resources.

In 2012, Noble Energy’s onshore U.S. operations used an estimated 24.8 million barrels of water. Approximately 7.3 million of those barrels were produced from operations, and were reused or recycled during subsequent drilling, completion, waterflood recovery and maintenance activities. 17.5 million barrels came from public or private sources in our U.S. operations areas. The company’s water management strategy focuses on increasing water recycling and reuse, thus reducing operational requirements for fresh water.

Another important element of the company’s water strategy is to shift toward resources that do not compete with the needs of other water users. Noble Energy often supplements freshwater resources used in its operations with water that is unsuitable for drinking purposes, including brine aquifers, grey water or produced water.

To reduce the quantity of water transported by truck to project sites, the company locates storage ponds and tanks strategically, and utilizes pumps and pipelines as an alternative means of delivery. Over the next five years, efficiencies in water transportation are expected to decrease Noble Energy’s truck mileage by approximately 15 million miles. This will also avoid an annual average of approximately 45,000 tons of CO<sub>2</sub> emissions in the DJ Basin. For more information on reducing truck traffic in the DJ Basin, see page 8.



### Water Recycling

To reduce freshwater consumption, Noble Energy is pursuing innovative water treatment and recycling methods.

As part of an 18-month research program in the DJ Basin, the company worked with contractors and water treatment providers to develop new fracturing fluids and treatment processes. These were aimed at expanding the use of recycled flow-back water in the hydraulic fracturing process. The result was a proprietary technology that treats water for gels, metals, bacteria and other impurities, returning it to a condition suitable for continued use in hydraulic fracturing operations.

In 2012, 18 percent of vertical wells in the DJ Basin were completed using this technology. At the end of the year, we began applying this technology to horizontal wells. Initial testing showed that approximately 2,200 barrels of water can be recycled per vertical well completion and more than 10,000 barrels of water can be recycled per horizontal well completion. Using recycled water of this kind decreases our reliance on disposal methods such as deep injection wells.

### Participation in Water Leadership

To further understand the water impacts across the company's onshore activities, Noble Energy conducted a research project with the Colorado Energy Water Consortium (CEWC). The study analyzed water intensity for vertical and horizontal wells operated by Noble Energy in the DJ Basin during 2010 and 2011, and compared it to other energy sources (see Water Intensity of Different Energy Sources table).

The results showed that, while hydraulic fracturing for horizontal well drilling uses more water than hydraulic fracturing for vertical well drilling, horizontal well drilling is a more efficient approach for oil and gas extraction because more energy is produced per gallon of water used. The study results were published in the May 7, 2012 issue of the *Oil & Gas Journal*.

Noble Energy is one of the founders of the CEWC, a consortium that brings together industry, academic, agriculture, government, environmental and other consulting stakeholders to address water and energy issues through research and related activities. Noble Energy's initial \$250,000 contribution helped establish the consortium in 2011. In 2012, the company contributed an additional \$250,000.

## WATER INTENSITY OF DIFFERENT ENERGY SOURCES\*

Comparison of the average consumptive water intensity for the recovery of various energy sources and the water intensity of Noble Energy wells.

	Gal/MMBtu
<b>Noble Energy Data</b>	
Vertical wells	6.9
Horizontal wells	4.3
<b>Industry Data</b>	
<b>Natural Gas</b>	
Conventional	0
<b>Oil</b>	
Primary	1.5
Oil shale	5.5
Conventional flooding	14
Oil sand	35
Enhanced recovery	62
<b>Coal</b>	
Surface mining	2
Underground mining	9
<b>Solar</b>	
Photovoltaic	4
<b>Wind</b>	
Turbine	0
<b>Biofuels</b>	
Ethanol from irrigated corn	11,000
Biodiesel from soy	60,000
Biodiesel from rapeseed	68,000

\*Water intensity is the ratio of water consumed to energy produced, which is measured in gal/MMBtu (gallon per million British thermal unit).

Source: Goodwin S., Carlson K., Douglas C. and Knox K. (May 2012). Life Cycle Analysis of water use and intensity of oil and gas recovery in Wattenberg field, Colorado, *Oil & Gas Journal*, May 7, 2012, pp. 48-59.

Noble Energy's Gulf of Mexico and offshore international operations used an estimated 514,000 barrels (bbls) of water in 2012.

#### **Gulf of Mexico and International Offshore Water Sources**

Sea water	332,594 bbls
Freshwater	181,489 bbls
Reused/Recycled	0 bbls

#### **Participation in the Carbon Disclosure Project (CDP) Water Program**

Noble Energy participated in the Carbon Disclosure Project's (CDP) water program for the first time in 2012. CDP is a not-for-profit organization that provides a standardized global format for companies and cities to measure and report their carbon emissions and water use. Noble Energy's reports to the CDP are located on the company website.



## **WATER MANAGEMENT STRATEGY**

### **1. Assess Demand**

Our geologists and engineers identify multi-year water demand for drilling and production.

### **2. Secure Adequate Supply**

Our approach to securing water rights seeks to strike a balance between effective, long-term and reliable water supply planning to meet our operational demands with the economic, social and environmental needs of landowners and surrounding communities. We work with local landowners to secure necessary water rights and use water resources in compliance with applicable laws and regulations.

### **3. Develop**

Once we secure water, we develop water transport and storage infrastructure – such as pipelines, pumping facilities, tanks and ponds – that are designed to meet the specific physical and operational circumstances in each area of operation.

### **4. Use**

Water is used in drilling, well completion and workover activity. Site-specific water requirements can fluctuate based on a number of factors and are coordinated with water management teams and field personnel to ensure adequate supply. Water management also includes an accurate measurement and reporting system.

### **5. Treatment, Recycling and Reuse**

We apply proven water treatment, recycling and reuse processes to treat wastewater captured as flowback and water produced during operations. This reduces the amount of fresh water we consume and minimizes our "hydrologic footprint." These water management efforts optimize capital, water acquisitions and transportation costs; minimize the amount of residual wastewater that is typically disposed of in deep injection wells; and contribute to reducing our impact on the environment and community.

# A Discussion on Hydraulic Fracturing Stimulation.

## A TEAM APPROACH TO WELLBORE INTEGRITY

**Noble Energy's DJ Basin Wellbore Integrity (WBI) team was created in 2012 to improve how we protect aquifers and the environment. The WBI team developed best-practice standards to help ensure preexisting wells near planned drilling areas are structurally sound and avoid impacting aquifers and the environment as a result of our onshore development activities. Prior to any drilling activity, the WBI team evaluates the infrastructure of nearby wells (e.g., casing integrity, cement coverage, equipment quality). Based on the results of the evaluation, wells are then remediated or plugged and abandoned where necessary. Noble Energy is working with regulators and other operators to share these voluntary best management practices to help avoid environmental impacts associated with onshore oil and natural gas development.**

## What is hydraulic fracturing stimulation?

Hydraulic fracturing stimulation (commonly referred to as "hydraulic fracturing" or "fracking") is a process used in 90 percent of the oil and natural gas wells drilled in the United States.

After a well is drilled and several layers of steel pipe are cemented in place to isolate subsurface operations from the environment, a mixture composed primarily of water, sand and a small amount of additives is injected at high pressure into the rock formation. This creates small fractures in the rock that provide a flow path for trapped oil and natural gas. The sand keeps the fractures open, allowing oil and natural gas to flow into the wellbore, and the water mixture to return to the surface, where it is reused or recycled.

## Why are additives used in hydraulic fracturing?

Additives are used to improve the performance of hydraulic fracturing stimulation. They are predominantly used for lubrication, to keep bacteria from forming and to help carry the sand. Most of the additives used in hydraulic fracturing are chemicals found in common household products like soaps, disinfectants and skin lotions.

## What are porosity and permeability, and why do they matter?

Depending on porosity and permeability, underground rock formations may contain trapped oil and natural gas. Porosity is the percentage of the rock's volume that is open space, or pores, that can hold oil and natural gas. Permeability is the rate of flow at which fluids (water, oil or natural gas) can pass through these pore spaces. Smaller pore spaces are more difficult for liquids to pass through, resulting in lower permeability. The process of hydraulic fracturing stimulation is used to create a connection between the small pore spaces, enabling trapped oil and natural gas to flow more freely into well bores. Hydraulic fracturing enables recovery of oil and natural gas that would not otherwise be accessible.

## Is there a difference between hydraulic fracturing stimulation when applied to conventional versus unconventional formations?

Conventional formations, such as sandstone, have higher permeability than unconventional formations, such as shale. Therefore, fluids can flow more easily through the formation. The hydraulic fracturing stimulation process is basically the same when applied to unconventional formations as it is when applied to conventional formations, though slight modifications may be made to adapt to the geologic characteristics of the area.

## What is FracFocus?

FracFocus is a national hydraulic fracturing chemical registry website that provides fact-based information about hydraulic fracturing to the public. FracFocus also provides a centralized database for operators to upload timely, consistent chemical data that enables the public to search well records using multiple criteria. Several states have either mandated the use of FracFocus through regulation, or are discussing a mandatory use requirement for operators. Noble Energy is an active participant in FracFocus. In mid-2011, the company began voluntarily disclosing chemicals used for all onshore wells.

## How do you avoid groundwater contamination and remain confident that hydraulic fracture fluids will not go beyond the target rock zone?

Before drilling a well, area geologic characteristics – such as the presence, thickness and features of rock layers between the ground surface and target geologic formation – are assessed. Based on this evaluation, the porosity and permeability of the rock layers are estimated. This helps predict how the target geologic formation will respond to hydraulic fracturing stimulation. Other oil and natural gas wells in the area are also identified, to ensure they will not impact or be impacted by hydraulic fracturing stimulation activity.



To prevent hydraulic fracturing stimulation fluid from impacting groundwater, construction of the wellbore includes layers of protective steel and cement to protect shallow groundwater aquifers. Noble Energy uses best-management practices when installing multiple casing and cement layers to ensure they prevent natural gas migration and drinking water contamination.

Hydraulic fracturing stimulation fluids are pumped into completed wells at varying pressures to create small fractures in the target geological formation. This process is closely monitored, with pressure tests conducted on the wellbore before and during the hydraulic fracturing stimulation process. If the pressure is lost, fracturing stops.

Furthermore, there are many layers of rock between drinking water aquifers and the target geological formation that prevent hydraulic fractures from moving out of the target geological formation. As an example, hydraulic fracturing stimulation can be conducted at depths of 7,000 to 8,000 feet below the surface; drinking water aquifers are typically less than 1,000 feet below the surface. The planning process includes modeling the extent of the hydraulic fracturing stimulation, and the actual process is closely monitored.

**What is commonly misunderstood about hydraulic fracturing stimulation?**

Common misunderstandings exist regarding the point at which hydraulic fracturing stimulation takes place and how long it lasts. Some think hydraulic fracturing stimulation occurs over a long period of time (months or years), but it is actually a short-term activity that lasts anywhere from a few hours to several days. Hydraulic fracturing stimulation takes place after the well is drilled and multiple layers of steel pipe, called casing, are inserted into the full length of the well. It is the step following drilling and before the well begins producing oil and/or natural gas.

**GROUNDWATER PROTECTIVE LAYERS**

- 1 Cement Layer 1
- 2 Conductor Casing
- 3 Cement Layer 2
- 4 Surface Casing
- 5 Cement Layer 3
- 6 Intermediate Casing
- 7 Cement Layer 4\*
- 8 Production Casing

At various stages of the drilling and completion process, the mechanical integrity of the casing and cement are tested to ensure proper installation. We use best management practices installing and cementing the multiple strings of casing necessary to prevent gas migration or drinking water contamination.

*\*In some locations this layer is not required by regulation.*

*This graphic represents a generic depiction of our onshore well depth and casing.*

## A MILESTONE IN HABITAT RESTORATION

**T**he company continued its participation in the **Battlement Mesa Reservoir Restoration Project** to restore native Colorado cutthroat trout habitat, successfully releasing cutthroat trout into two restored reservoirs in 2012. These efforts contributed to the restoration of a 120-year-old fishery, allowing it to reopen for public access. Colorado Parks and Wildlife, along with Noble Energy, the United States Forest Service (USFS), Grand Valley Anglers, Colorado Water Conservation Board, the U.S. Bureau of Reclamation and Colorado Trout Unlimited, invested \$375,150.

“

**Noble Energy is an example of a socially responsible energy company. They understand the value of preserving wildlife habitat. They understand the value of Battlement Mesa reservoirs. At the same time, they understand that we understand their exploration efforts are very important to the state of Colorado.**

– Mike Porras, Colorado Parks and Wildlife

”

# RESPONSIBLE

### Wildlife and Habitat Management

Noble Energy identifies protected or sensitive plant and animal species and potential impacts, and implements avoidance or mitigation measures to protect wildlife and habitats. In 2012, we began reassessing current and planned North American operations relative to the endangered species list, as well as an additional 251 species proposed for future listing by the U.S. Fish and Wildlife Service. This effort is intended to:

- Identify species of concern.
- Determine the risk posed to these species by operations.
- Assess opportunities to avoid negatively impacting the species or to enhance alternate habitat.
- Develop and implement appropriate mitigation plans if avoidance is not possible.

Some of the company's operations overlap with the habitats of the Greater Sage-Grouse, which is a candidate species for protection under the Endangered Species Act. In Wyoming and Colorado, Noble Energy participated in several partnerships to protect and enhance these habitats.

In Nevada, the company is applying management practices identified through voluntary state and federal programs to protect Greater Sage-Grouse habitats as seismic and exploration activities begin. For example, Noble Energy:

- Conducts surveys to determine winter habitat occurrence and project noise, and ongoing research on nesting and population trends.
- Ensures proactive and long-term protection of species by understanding their needs and the condition of their habitats early in the project life-cycle.
- Shares findings with local agencies.

Noble Energy is also developing a partnership with the State of Nevada Department of Conservation and Natural Resources, the Nevada Cattlemen's Association and other organizations to coordinate additional opportunities to reduce impacts and enhance high-value habitat areas. These early assessment efforts enable the company to design its projects in a manner that minimizes impacts on biodiversity.

Employee participation is important to successful implementation of wildlife protection strategies. Noble Energy provides biodiversity awareness training to drilling, completion, operations and maintenance crews. Site personnel are also trained

to respond if wildlife species of concern are found in the area. Where wildlife issues are identified, the company incorporates wildlife updates into morning safety meetings. In Colorado, for example, site personnel are trained on how to identify raptor nests and what to do if they encounter black bears. In Nevada, employees and contractors are educated on waste management practices to avoid attracting coyotes and crows, as both are predators of the Greater Sage-Grouse. During seismic activities in Nevada, a field biologist was onsite to monitor any signs that wildlife species of concern were active near project operations.

Noble Energy participates in a variety of industry engagement activities and works with the Bureau of Land Management (BLM), the United States Forest Service (USFS) and state wildlife agencies in order to share data and improve local wildlife management plans. In cases where multiple management plans apply, the company follows the more rigorous requirements across the entire area.

### Reducing the Operational Footprint

One way the company minimizes impacts on the environment is through pad drilling, which enables multiple wells to be drilled on a single pad. In Colorado, we further innovated pad-drilling design by implementing EcoNode facilities (EcoNodes). These facilities enhance pad-drilling activity to provide multiple wells on one pad with consolidated services (e.g., pipelines to transport water and product to and from wells). EcoNodes reduce land use by 60 to 80 percent. This minimizes the need to transport water and product by road, which in turn reduces truck traffic and air emissions.

In addition to reducing road transport, EcoNodes improve our ability to reuse water, since used water is easily transported by pipeline to treatment facilities, then transported back to our well sites for re-use. For more information on these activities, see pages 8 (DJ Basin) and 14 (Marcellus Shale).

### Remediation

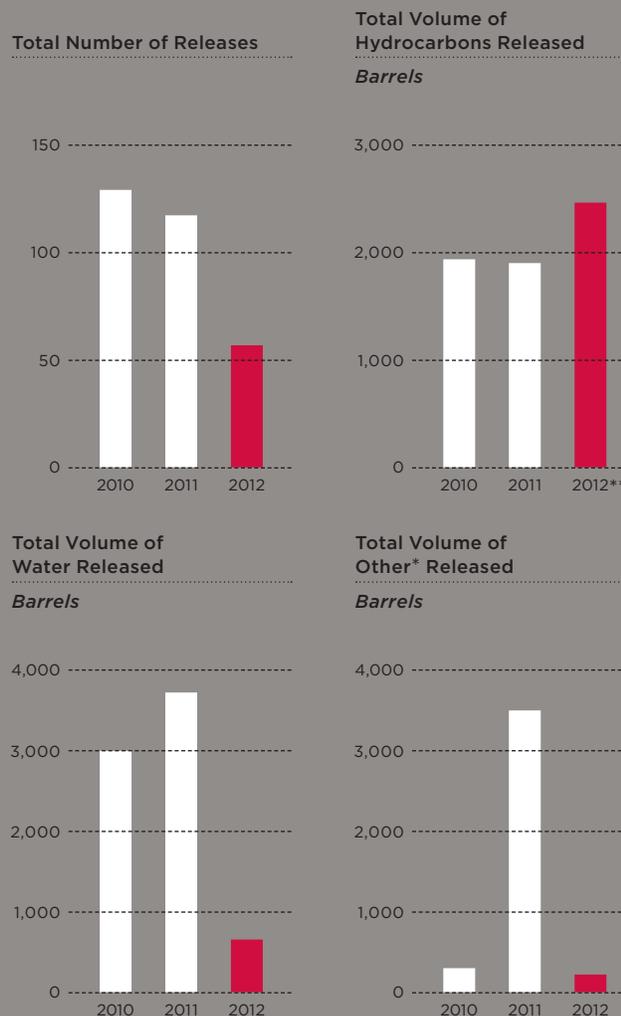
When Noble Energy acquires assets, the company works to ensure they are brought up to current operating standards. For example, we acquired wells in the DJ Basin that were originally drilled in the 1980s and 1990s. A common practice at the time was to use cement water containers, which over time can be prone to leaks. To prevent leaks, our engineers redesigned the containers to incorporate secondary containment measures, such as steel housing and clay liners, along with improved piping and fittings.

## ONSHORE SPILL PREVENTION AND RESPONSE

Noble Energy's Spill Prevention and Response plans outline necessary mechanical integrity testing, site design, inspections, training and response procedures. If a spill occurs during field activity, personnel are trained to call the incident hotline to initiate an incident response and meet regulatory reporting requirements. If the problem can be fixed safely and immediately, we proceed with this course of action. If the spill is large enough to require remediation, workers remove the soil where the spill occurred, test it, verify that all contaminated soil has been collected and haul it to an approved disposal site. The remediated area is then backfilled with clean soil.

Noble Energy tracks all spills and reports any that exceed state or federal reporting thresholds.

## U.S. REPORTABLE SPILLS

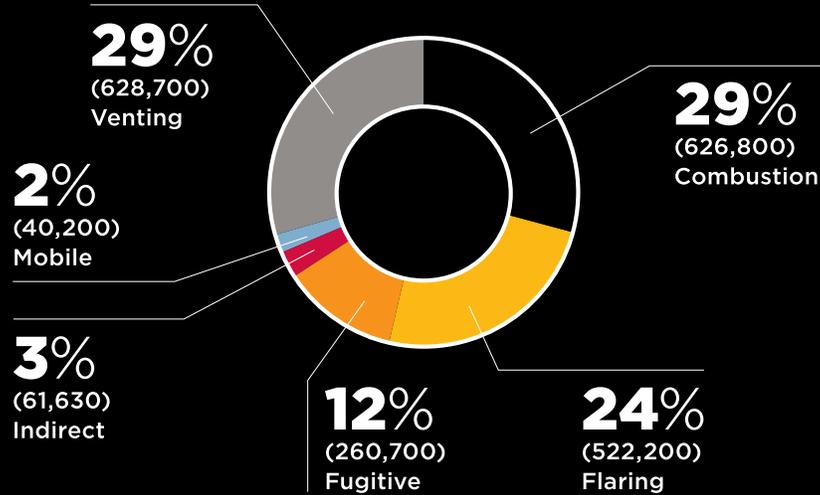


\*Other: non-produced fluids onsite such as diesel, chemicals and drilling mud.

\*\*1,466 barrels of this total volume can be attributed to acts of vandalism in Colorado, which were reported to authorities.

## 2012 NOBLE ENERGY CO<sub>2</sub>e EMISSIONS BY SOURCE CATEGORY

Metric tons CO<sub>2</sub>e



\*Percentages do not add up to one hundred due to rounding.

### Reducing Greenhouse Gas Emissions

Reducing greenhouse gas (GHG) emissions is one of Noble Energy's priorities. The company's GHG emissions-reduction strategy includes maintaining an accurate emissions database, implementing operational enhancements, maintaining equipment and reducing truck traffic. See Spotlight on DJ Basin on page 8.

In 2012, Noble Energy changed its methodology for calculating its GHG emissions to comply with the U.S. EPA Mandatory Greenhouse Gas Reporting Rule.

The portion of the rule pertaining to petroleum and natural gas systems is used to calculate Scope 1 (direct) emissions for all U.S. activities. The American Petroleum Institute Compendium of Greenhouse Gas Emissions Estimation Methodology for the Oil and Gas Industry is used to calculate Scope 2 (indirect) emissions for all U.S. activities, and Scope 1 and 2 for all international activities.

In 2012, Noble Energy's cumulative (direct and indirect) carbon dioxide-equivalent (CO<sub>2</sub>e) emissions totaled 2.14 million metric tons. Due to changes in calculation methodology, our 2012 GHG data will serve as the baseline for performance comparisons going forward.

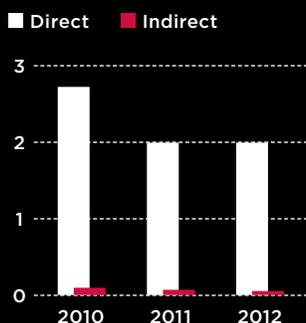
Noble Energy continues to participate in CDP's climate change program. The goal of the program is to motivate investors, corporations and governments to measure, manage and reduce emissions and mitigate the impacts of climate change. Noble Energy's reports to the CDP are located on the company website.

### Natural Gas Flaring

Natural gas may be flared for safety, technical or other reasons. In 2012, flaring accounted for approximately 24 percent of Noble Energy's annual GHG emissions, a 3 percent increase from 2011. Elevated flaring activity took place over several months at our offshore Equatorial Guinea operation while compressors were being installed to capture and re-inject the associated gas back into the reservoir. Flaring has increased in Colorado as the industry works to install the necessary gathering infrastructure to accommodate increased production. Because of the lack of infrastructure, Noble Energy uses tanks to store liquid hydrocarbons once they are brought to the surface. Under normal atmospheric conditions, the hydrocarbons begin to release vapors, which are collected for processing or combusted. Vapor-recovery units are commonly used to capture these tank emissions. Noble Energy increased the use of these units in 2012 as part of its vapor-recovery program, which resulted in the recovery of enough

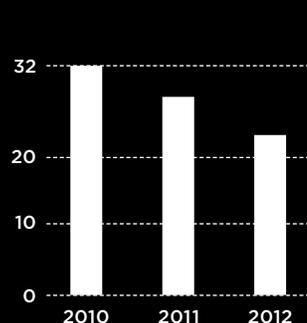
### GHG DIRECT AND INDIRECT EMISSIONS

Million metric tons



### GHG NORMALIZED EMISSIONS

Metric tons CO<sub>2</sub>e/MBOE



### GREENHOUSE GAS FOOTPRINT

Scope 1 (direct) emissions were calculated according to the U.S. EPA Mandatory Greenhouse Gas Reporting Rule for all applicable U.S. activities. The American Petroleum Institute Compendium of Greenhouse Gas Emissions Estimation Methodology for the Oil and Gas Industry is used to calculate Scope 2 (indirect) emissions for all U.S. activities and Scope 1 and 2 (direct and indirect emissions) for all international activities.

# EMISSIONS

*Due to changes in calculation methodology, 2012 data is not comparable to previous years.*

natural gas each day to heat 90 homes.

After the hydraulic fracturing of horizontal wells, we also perform green well completions as defined by the U.S. EPA, which use equipment to capture and recover natural gas and condensate, thus minimizing uncontrolled venting or flaring during the completion process.

#### Production Equipment Maintenance

Effective maintenance of production equipment enables Noble Energy to reduce GHG emissions and costs while increasing the quantity of natural gas available for sale. Through the U.S. EPA's Natural Gas STAR program and the company's efforts in this area, we have reduced cumulative methane emissions by over 1.2 billion cubic feet in the U.S. since 2008. In 2012, Noble Energy's methane reductions totaled approximately 109 million cubic feet.

The company monitors its work sites with infrared cameras to detect and correct maintenance inefficiencies. Infrared cameras can detect fugitive emissions that cannot be seen with the naked eye. In 2012, we increased our staff to expand the program. The company surveyed nearly 600 sites and identified approximately 1,000 maintenance opportunities. This led to saving more than 40 million cubic feet of natural gas, and reducing GHG emissions by more than 500 metric tons.

#### Managing Other Air Emissions

In 2012, sulfur oxide (SO<sub>x</sub>) emissions decreased by 87 percent, largely as a result of divestitures that occurred in 2011 and 2012. Nitrogen oxide (NO<sub>x</sub>) emissions increased 25 percent and carbon monoxide (CO) emissions increased 109 percent. This was due to a recent change in regulatory reporting requirements, as well as increased activity at our onshore operations and the associated use of internal combustion engines. The combined emissions of volatile organic compounds (VOCs), SO<sub>x</sub>, NO<sub>x</sub> and CO for our U.S. onshore activities can be found in the performance data table at the end of this report.

Noble Energy does not use, produce or consume any ozone-depleting substances in its operations.

# Committed to a New Energy Horizon.

**Noble Energy's 2000 Mari-B discovery set the course for Israel's natural gas development. Between 2009 and 2012, Noble Energy made six consecutive natural gas discoveries in the Levant Basin. Today, discoveries in Israel and Cyprus have the potential to transform the region by providing clean, reliable and domestically produced energy.**

The use of natural gas to generate electricity reduces the region's carbon footprint and saves millions of dollars in fuel costs every year. Using natural gas from the company's Tamar field offshore Israel to generate the country's electricity is expected to reduce CO<sub>2</sub> emissions over the life of the field by approximately 195 million metric tons – the equivalent of taking every car in Israel off the road for 14 years.

The more than 35 trillion cubic feet (Tcf) of resources discovered by Noble Energy in the region by year-end 2012 also presents an opportunity for Israel and Cyprus to strengthen energy security, forge new international relationships and accelerate economic growth. Beyond meeting demand, the Block 12 discovery offshore Cyprus has the ability to allow the export of about 5 million tons of liquefied natural gas annually.

## Building a Local Workforce

During 2012, Noble Energy added 46 local employees to its Israeli workforce. To further build a foundation of future leaders in the region, we worked with the Technion Institute to develop an oil and natural gas engineering program, and to provide internships and research opportunities to students pursuing master's degrees in the program. Our goal is to hire talented local individuals and provide them with opportunity, knowledge and experience. For more information on hiring practices, see pages 37–38.

## Bettering People's Lives

Noble Energy partnered with MadaTech, Israel's National Museum of Science, Technology & Space, to establish the Noble Energy Science Park. This interactive park brings science to life as visitors learn about the scientists and inventors behind modern science. The company is investing \$4 million between 2011 and 2015 for continued maintenance and development of this interactive educational park.

In 2012, Noble Energy enriched its commitment to the Jewish Agency's Youth Futures, a mentorship program that fosters the social and educational development of disadvantaged Israeli youth. Between 2011 and 2015, the company is investing \$2 million in the program. Our employees also volunteer their time to support youth in four communities. Volunteers and children planted a therapeutic garden in a school for ultra-Orthodox children in Tzfat, in northern Israel. We renovated homes for disadvantaged Ethiopian immigrants and Arab citizens in Lod, at the center of the country. We provided school supplies to, and refurbished homes of, underserved citizens in Israel's peripheral town of Ofakim. Through an educational field trip to MadaTech, we provided a reprieve to children of the southern city of Be'erSheva, whose homes came under rocket fire during the Pillar of Defense conflict.

Noble Energy also reaches youth through ELEM, a nonprofit organization that provides care for youth at various levels of risk, including outreach to runaway, homeless, and neglected Jewish and Arab youth.

## Safe and Responsible Development

In 2012, Noble Energy conducted spill-equipment training for Eastern Mediterranean contractors. This training included deployment of equipment to demonstrate the company's spill response capabilities, and emergency preparedness skills to regulators from the Ministry of Environmental Protection and Ministry of Energy and Water Resources. We are using the lessons learned from this exercise as a tool to improve performance and preparedness.

Protected shorebirds, marine turtles, fish, marine mammals and invertebrates inhabit offshore Israel and Cyprus. Prior to initiating activities in these areas, we reviewed marine research to understand potential hazards created by seafloor disturbances, noise, vibration and marine discharge. This knowledge helped us implement appropriate mitigation measures.

We also worked with the Israeli Ministry of Environmental Protection to test protocols on two proposed well sites and assess environmental impacts. Pursuant to Noble Energy's Offshore Discharge Management Plan, offshore rigs are equipped with water containment, treatment and monitoring systems that reduce impact at the water surface and limit discharge.

## 2012 Eastern Mediterranean Operational Highlights

### *Financial (U.S. dollars)*

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Revenues from sales of oil, natural gas and natural gas liquids (NGLs)	\$ 178 million
Capital expenditures	\$ 873 million

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### *Local Statistics*

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Employees	126
Wells drilled	3
Local suppliers	471
Community investments	\$ 1.50 million

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# AGILE

## CARING FOR OUR PEOPLE

# TALENTED. BY DESIGN.

The dedication, talent and technical expertise of Noble Energy employees drive the company's growth and success.

### Our People

People matter at Noble Energy. We recognize that every employee plays an important role in our operations, and that diversity creates competitive advantage. We are committed to fostering an inclusive culture and to providing our employees with competitive compensation and benefits, and opportunities to learn and grow in their careers.

### Recruitment and Retention

Recruiting and retaining the next generation of energy industry leaders is a vital component of Noble Energy's business strategy. The company experienced substantial growth in 2012, hiring nearly 500 employees around the globe. To meet the continuing demand for top quality candidates, we have expanded our college recruitment efforts.

During 2012, we participated in 71 hiring events on campuses across the U.S., with a focus on six core disciplines: Geoscience, Engineering, Finance, Information Technology, Land and EHS. As a result, 33 full-time new hires joined Noble Energy and 45 students participated in our summer internship program. We also partnered with a military placement agency to identify and hire top talent from the U.S. armed forces.

### Employee Compensation and Benefits

To attract, motivate and retain employees, Noble Energy offers competitive compensation and comprehensive benefits programs. The goal of our compensation program continues to be to strongly link pay to performance through financial incentives that are tied to the company's operational and financial results. The benefits program offers a wide array of options that enable employees to effectively attend to their health and retirement



needs – offering medical, prescription, dental and vision coverage, as well as life, disability and accident insurance to help protect employees and their families from the unforeseen. See the Proxy Statement for our 2013 Annual Meeting of Stakeholders for more information on benefits of our 401K plan.

**Local Hiring**

Noble Energy is committed to growing local workforces and hiring local citizens to support operations whenever possible. For examples of local hiring efforts, see page 8 for the DJ Basin, 14 for the Marcellus Shale, 34 for East Mediterranean and 40 for Equatorial Guinea.

**Diversity and Nondiscrimination**

Noble Energy’s Code of Business Conduct and Ethics includes policies regarding equal employment opportunity and nondiscrimination that are applicable everywhere the company has a presence.

The company is committed to cultivating an inclusive culture that provides a working environment that enables all employees to grow. In 2012, Noble Energy established a partnership with Living Abroad to provide employees with access to country-specific cultural information such as business practices, family matters and local customs.

## WORKFORCE DIVERSITY

**2012 U.S. Gender/Minority Diversity**

Job Categories	Female %	Minority %
Executive/Senior-level Officials and Managers	7.3%	0%
First/Mid-level Officials and Managers	13.9%	6.8%
Professionals	36.4%	19.0%
Technicians	69.0%	20.3%
Administrative Support Workers	89.4%	21.6%
Operatives	0.4%	10.2%

**14%** of total U.S. workforce are minorities

**Small, Minority- and Women-owned Suppliers**  
 Noble Energy now tracks the number of small, minority- and women-owned suppliers contracted to support U.S. operations.

- 103** suppliers support DJ Basin operations
- 60** suppliers support Marcellus Shale operations
- 11** suppliers support Deepwater Gulf of Mexico operations

**Employee Gender Diversity**

**United States**



**Israel: 87% local**

(percentage based on local workforce)



**Equatorial Guinea: 75% local**

(percentage based on local workforce)



## SPOTLIGHT ON WELLNESS



In 2012, Noble Energy partnered with Provant Health Solutions to offer a new program called Wellness NOW\*, which is available at no cost to U.S. employees. The goals of Wellness Now are to change employee behaviors and habits by promoting health and well being, and to reduce employee and company health costs. During the inaugural year, almost half the U.S. workforce participated in the health incentive program.

**U.S. employees participated in wellness activities to earn points toward a discount on their health insurance premiums. These activities include free on-site biometric screening to identify potential health risks and health coaching. Coaches are available to advise employees about ways to reduce potential health risks.**

**To support employee health and well being in Israel, Noble Energy held a Sports Day at the beach near Netanya, Israel. Experts in nutrition, fitness, stress management and conflict resolution talked with our employees to inspire them toward healthier lifestyles. We also provide camp days for employees' children during the weeks between the school year and summer camps.**

*\*The wellness program has been rebranded from Our Health Is Our Energy to Wellness NOW.*

## CAREER DEVELOPMENT AND TRAINING

Reliable access to talented people is important to executing the company's long-range business plan. In 2012, a succession planning and talent review process was implemented across the company to help identify and develop future leaders.

**As part of the company's LEAD (Learn, Excel, Achieve, Develop) program, an accelerated leadership track, 48 employees from Noble Energy offices in Houston, Denver and Greeley completed a series of leadership courses. The company implemented adapted versions of this program to meet local employee needs in Equatorial Guinea, where 46 employees were trained, and in Israel, where 15 employees were trained.**



# Fostering Strong Communities.

**More than 20 years ago, we began our relationship with the Republic of Equatorial Guinea as a participant in the development of the Alba field. Noble Energy now operates the Aseng field and recent discoveries provide continued momentum for growth in the area.**

## Building a Local Workforce

Since opening offices in Malabo in 2004, the team has grown to include 21 expatriate employees and 68 Equatoguinean national employees. In 2012, the proportion of jobs held by Equatorial Guinea nationals reached 75 percent. Equatoguineans hold approximately 25 percent of the company's management positions.

In addition to 68 local employees, more than 150 local contractors work for Noble Energy in Equatorial Guinea. The company provides educational opportunities to employees and contractors, that include EHS training and English language development courses.

## Caring for Our People

In 2012, Noble Energy hosted a wellness fair for its employees. In partnership with La Paz Hospital, the company provided information on preventive care and healthy eating habits and activities, and offered employees and their families vaccinations and tests to check for health risks. For more information on global wellness activities, please see page 39.

## Bettering People's Lives

In partnership with the Ministry of Mines, Industry and Energy (MMIE), Noble Energy is building a social investment program focused on health and education.

The company is part of a team that has been fighting malaria for a number of years, and continues to advance a program with the Ministry of Health to help reduce infant and maternal mortality.

Noble Energy and its partners increased contributions to social projects in Equatorial Guinea to \$1.5 million in 2012. Project applicants propose community improvement projects to Noble Energy or the MMIE. A multi-sector committee – comprised of Noble Energy and MMIE representatives – selects projects with the greatest potential for positive and sustainable community impacts. Two successful projects from 2012 are highlighted below.

### *Sexual and Reproductive Health Seminars*

In Equatorial Guinea, early and unintended pregnancies often impede female educational opportunities. Noble Energy partnered with the Ministry of Social Affairs and the Promotion of Women (MINASPROM) to sponsor five seminars on sexual education and reproductive health. Seminar attendees included 112 school teachers, 18 local education inspectors and 27 MINASPROM delegates from 28 municipalities across the country. The seminars covered topics such as sexual and reproductive rights in relation to the country's Family Planning Law, and methods of pregnancy prevention and sexually transmitted diseases.

Noble Energy, with its joint venture partners, contributed \$38,000 in 2012 to cover the cost of the seminars. Based on the findings from these seminars, the MINASPROM and the Ministries of Education and Health are establishing a sexual education program that will be incorporated into the school curriculum nationwide.

### *Basakato School Renovation*

Since 2008, Noble Energy has funded and managed a number of projects to meet the need for new construction and refurbishments throughout the local primary and secondary school systems. These projects include a library, classrooms, teachers' houses and a new preschool.

In collaboration with the MMIE, Noble Energy continued renovations on a school and a teacher's home in the village of Basakato de la Sagrada Familia, a social project approved by the MMIE in 2011. The facility serves approximately 140 students and is the only means of education for young children in the community. Refurbishing the teacher's house will provide housing for a qualified teacher.

The village takes pride in the original school building, which was constructed in 1933 by community members. The walls were made from sand carried from the local beach, but the building needed renovations. Noble Energy contracted a local construction company for the renovation work. During renovations, local artwork and rails from the historic Bioko railroad were uncovered. As part of Noble Energy's commitment to respect local culture, the company worked with the community and construction contractor to preserve and document the historical finds. For example, interviews were conducted with community members, local personnel and local historians to understand their cultural significance.

## Providing a Safe Work Environment

During 2012, Noble Energy implemented three safety initiatives in Equatorial Guinea.

- We began utilizing Active Learner, a computer-based awareness safety training system, and set a goal to train all employees and direct-hire contractors in 2013.
- We continued to train office and field employees on first aid, CPR and Automated External Defibrillator (AED) use.
- Noble Energy Safety Orientation was delivered to approximately 300 nationals, expatriates and contractors.

## 2012 Equatorial Guinea Operational Highlights

### *Financial (U.S. dollars)*

Revenues from sales of oil, natural gas and natural gas liquids (NGLs)	\$ 1,343 million
Capital expenditures	\$ 422 million

### *Local Statistics*

Employees	91
Wells drilled	6
Local suppliers	198
Community investments*	\$ 4.6 million

\*Includes spend in operated and non-operated assets.

### 2012 major social projects that are part of Noble Energy's Block I, Block O and Alba Production Sharing Agreements

<i>Project*</i>	<i>2012 Contributions by Noble Energy and JV Partners</i>
Aberdeen Skills and Enterprise Training Scholarship	\$ 2,000,000
Basakato School Renovation	\$ 71,000
Bitika School Fence	\$ 99,000
Bioko Island Malaria Control Project	\$ 1,700,000**
Fistula Repair Campaign	\$ 51,000
GEGEO Graduate Scholarships	\$ 225,000
INEM Rey Malabo School Furniture	\$ 13,000
INEM Rey Malabo School Library	\$ 226,000
National Hydrocarbons Technology Institute of Equatorial Guinea (ITNHGE) Scholarship	\$ 900,000
Mabue-Esacunan Water Well	\$ 39,000
Nuestra Señora de Africa School	\$ 26,000
Riaba Cruces School	\$ 265,000
Sexual and Reproductive Health Education	\$ 38,000

\*All other projects listed in the 2011 report have either been completed or are no longer in progress.

\*\*Noble Energy's total contribution to the Bioko Island Malaria Project from 2003 to 2012 was \$12.1 million.



# CARE



**BETTERING PEOPLE'S LIVES**

# BETTER. BY DESIGN.

**At Noble Energy we strive to be a positive force in the local communities where we operate. We provide our employees with opportunities to make positive contributions to their communities, and challenge ourselves to find solutions to community problems. Our goal is to be a preferred business and sustainability partner wherever we operate.**

### Commitment to Human Rights

Noble Energy promotes a culture of corporate social responsibility that respects the rights and safety of individuals as well as the laws, environments and sustainability of the communities where we operate. We are in the process of evaluating various human rights standards and procedures as we prepare to formulate our human rights commitment and the policies that will support it. The company's Corporate Social Responsibility policy is located on its website at [www.nobleenergyinc.com/responsibility](http://www.nobleenergyinc.com/responsibility).

### Social Investments

One aspect of Noble Energy's purpose - *Energizing the World, Bettering People's Lives*<sup>®</sup> - is how the company provides direct financial and technical support to the communities where we operate. We focus our investments in three areas that we believe are important to the stability and quality of life in local communities:

- Workforce development;
- Environment; and
- Health.

As an example, Noble Energy focuses on health infrastructure projects in Nicaragua. In 2012, we started working with the NGO FHI 360, which is funded by the U.S. Agency for International Development (USAID), and the NGO blueEnergy, to fund the construction of 50 bio-sand water filters. These filters were installed in the urban center of Bluefields for families that do not have access to potable water.



With support from Noble Energy, blueEnergy launched "My Clean and Healthy School" and "My Clean and Healthy Neighborhood" initiatives. Noble Energy donates money to these initiatives for waste management equipment and training sessions in conjunction with the municipal government. The programs conclude with a competition that will provide funding for neighborhoods and schools, along with innovative proposals for solving the city's waste-management deficiencies.

“We are proud to partner with Noble Energy in Bluefields to help address the critical issue of access to clean water, which affects the majority of citizens in the municipality every day. This public-private partnership between USAID, Noble Energy, blueEnergy and the municipality is a great example of what can be achieved when working together.

– Roberto Matus, Director of the NGO FHI 360

In the town of Bilwi, Nicaragua, more than 1,300 people now have access to safe drinking water, thanks to the drilling of 13 artesian wells. Noble Energy funded and implemented the \$15,000 project in partnership with the Regional Council of the North Atlantic Coast (RAAN). More than 260 families use the new wells.

#### **Community Engagement**

Noble Energy is committed to responsible engagement with local stakeholders. Communicating and working with stakeholders enables us to understand and respond to their concerns. We strive to engage communities early on, and to assess and respond to concerns before exploration or development operations begin. Understanding community concerns and development priorities helps Noble Energy make informed decisions and ensures that long-term social investments have a positive impact at the local level.

Noble Energy launched its community engagement efforts in 2008 by listening to concerns and questions from community groups, and educating them about all the potential phases of oil and natural gas development – from exploration and assessment to production and closure. Noble Energy is working hand-in-hand with community leaders who provide project proposals. The proposals are reviewed and supported based on the project’s potential to improve the community in a long-term, sustainable manner.

In the U.S., Noble Energy began assessing potential exploration opportunities in the state of Nevada, where the company ultimately leased 350,000 net acres – two-thirds from private individuals and one-third from the BLM. The company identified individuals and organizations that may be impacted by exploration in the area, and coordinated dozens of stakeholder-engagement sessions ranging from one-on-one meetings to town-hall forums with local residents, nonprofit organizations, businesses, and state and federal regulatory agencies in Nevada and Washington, D.C. The discussions covered topics such as the life cycle of oil and natural gas operations, hydraulic fracturing stimulation and the hiring of local contractors.

#### **Caring For Our Communities**

The benefits of Noble Energy’s community-focused initiatives reach beyond the regions where it conducts exploration and production to touch the lives of people in the communities where corporate functions reside. For more than seven decades, our headquarters resided in Ardmore, Oklahoma, and today our time and contributions there continue to benefit organizations such as Relay for Life, March of Dimes and Walk MS. With nearly 1,000 employees living in the greater Houston area, where the company is now headquartered, Noble Energy is making an impact through local giving and volunteerism programs focused on education, human services and the environment. Collectively, Houston and Ardmore contributed more than \$1.3 million to local organizations such as United Way, Habitat for Humanity, National Multiple Sclerosis Society and the American Heart Association.

# About This Report

**Noble Energy's second annual Sustainability Report reflects the company's commitment to transparency in our interactions with stakeholders, and to improving the quality and content of our sustainability reporting and other public disclosures. Noble Energy views sustainability reporting as a journey, and will endeavor to enhance the quality of these reports each year.**

## Scope of This Report

To develop this report, Noble Energy used the Oil and Gas Industry Guidance on Voluntary Sustainability Reporting (2nd Edition, 2010) developed by the International Petroleum Industry Environmental Conservation Association (IPIECA), the American Petroleum Institute (API) and International Association of Oil & Gas Producers (OGP). It also referenced the Global Reporting Initiative's (GRI) Sustainability Reporting Guidelines & Oil and Gas Sector Supplement (Version 3.1, 2012). These guidelines are generally accepted frameworks for reporting economic, environmental and social performance. Our combined IPIECA/API/OGP and GRI index shows which guideline elements have been reported on and where they can be found in this report (see page 48).

Unless otherwise noted, this report covers activities under Noble Energy's direct operational control during calendar year 2012, which coincides with the company's fiscal year. All financial data is reported in U.S. dollars and represents the company's share of both operated and non-operated oil and natural gas exploration and production activities. Noble Energy's reporting on the Marcellus Shale includes the company's share of activities and performance, but does not include the activities or performance of CONSOL Energy, its

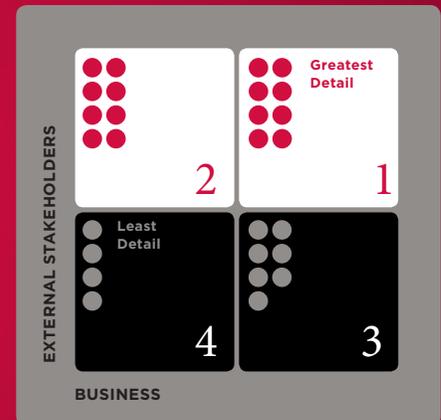
joint venture partner. Revenues and fees generated from activities in the Marcellus Shale reflect the company's 50 percent working interest in the joint venture.

## Materiality Analysis

The content of this report was determined through a materiality analysis, which identified the sustainability issues of greatest interest to external stakeholders and greatest relevance to Noble Energy operations. Internal interviews and workshops were conducted to discuss topics of potential significance. Stakeholder and business-derived issues were then analyzed and plotted on a four-quadrant chart (at right) based on importance. This report focuses on the areas in quadrants one and two.

## Stakeholder Input

Stakeholder feedback is an important part of the report development process. While preparing the company's first sustainability report, which covered our 2011 performance, we gathered input from a diverse group of NGOs and sustainability performance analysts to learn more about external stakeholder expectations. Upon completion of the 2011 report, we solicited feedback from the same group. Their comments helped guide the development of this 2012 Sustainability Report.



*We welcome your feedback on this report, and on our sustainability performance more broadly. Please contact us at [responsibility@nobleenergyinc.com](mailto:responsibility@nobleenergyinc.com).*

# Performance Data

## Health and Safety

	2010	2011	2012
<b>Hours Worked</b>			
Employees	3,436,714	3,614,934	3,979,958
Contractors	9,777,675	11,587,249	16,707,720
<b>Total Hours Worked</b>	<b>13,214,389</b>	<b>15,202,183</b>	<b>20,687,677</b>
<b>Lost-time Incidents</b>			
Employees	1	2	2
Contractors	9	12	14
<b>Total Lost-time Incidents</b>	<b>10</b>	<b>14</b>	<b>16</b>
<b>Recordable Incidents</b>			
Employees	3	4	7
Contractors	34	51	43
<b>Total Recordable Incidents</b>	<b>37</b>	<b>55</b>	<b>50</b>
<b>Total Recordable Incident Rate (TRIR)</b>			
Employees	0.17	0.22	0.35
Contractors	0.70	0.88	0.51
<b>Combined TRIR</b>	<b>0.56</b>	<b>0.72</b>	<b>0.48</b>
<b>Days Away from Work Incident Rate (DWIR)</b>			
Employees	0.06	0.11	0.1
Contractors	0.18	0.21	0.17
<b>Total Days Away from Work Incident Rate</b>	<b>0.15</b>	<b>0.18</b>	<b>0.15</b>
<b>Fatalities</b>			
Employees	0	0	0
Contractors	0	1	0
<b>Total Fatalities</b>	<b>0</b>	<b>1</b>	<b>0</b>

## People

	2011		2012	
	FEMALE %	NATIONAL %	FEMALE %	NATIONAL %
<b>Workforce Diversity</b>				
Cameroon	-	78%	25%	75%
Cyprus	-	57%	47%	82%
Equatorial Guinea	33%	73%	41%	75%
Israel	35%	79%	38%	87%
United States	33%	-	34%	-
<b>U.S. Diversity by Job Category</b>				
Executive/Senior-level Officials and Managers				
	6.3%	0.0%	7.3%	0.0%
First/Mid-level Officials and Managers				
	13.7%	7.4%	13.9%	6.8%
Professionals				
	36.0%	17.0%	36.4%	19.0%
Technicians				
	70.0%	19.0%	69.0%	20.3%
Administrative Support Workers				
	90.2%	25.2%	89.4%	21.6%
Operatives				
	0.0%	9.7%	0.4%	10.2%
<b>Total Number of Employees</b>				
	2010	2011	2012	
<b>Total Employees</b>		1,772	1,876	2,190

## Environment

	2010	2011	2012
<b>U.S. Onshore Water</b>			
<b>Consumption (in barrels)</b>			
Recycled or Reused Water	-	7,000,558	7,300,000
Water from Public or Private Sources	-	12,105,560	17,500,000
<b>Total Water Consumed</b>	<b>-</b>	<b>19,106,118</b>	<b>24,800,000</b>

	2010	2011	2012
<b>Offshore Water</b>			
<b>Consumption (in barrels)</b>			
Seawater	-	-	332,594
Freshwater	-	-	181,489
<b>Total Water Consumed</b>	<b>-</b>	<b>326,623*</b>	<b>514,083</b>

	2010	2011	2012
<b>GHG Emissions</b>			
<b>(metric tons CO<sub>2</sub>e)</b>			
Combustion	1,275,000	789,500	626,800
Flaring	362,500	382,600	522,200
Fugitive	168,200	168,250	260,700
Indirect	99,000	75,800	61,630
Mobile	11,500	13,300	40,200
Venting	691,600	691,650	628,700

	2010	2011	2012
<b>GHG Emissions</b>			
Direct (metric tons CO <sub>2</sub> e)	2,733,885	2,045,291	2,078,600
Indirect (metric tons CO <sub>2</sub> e)	98,971	75,792	61,630
Normalized (metric tons CO <sub>2</sub> e/MOE)	32	28	23

	2010	2011	2012
<b>U.S. Emissions (in tons)</b>			
VOC	-	11,205	10,653
NOx	-	1,915	2,396
SOx	-	15	1
CO	-	2,250	4,697

	2010	2011	2012
<b>Spills</b>			
Total Number	129	118	58
Hydrocarbons (in barrels)	1,933	1,904	2,455**
Water (in barrels)	3,010	3,726	657
Other (in barrels)	301	3,485	190.5

\* 2011 offshore water consumption data did not differentiate between freshwater and seawater. Total includes international water use only (no water was consumed in the Gulf of Mexico because it was closed due to a drilling moratorium).

\*\* 1,466 barrels of this total volume can be attributed to acts of vandalism in Colorado, which were reported to authorities.

## Community Investments

	2010	2011	2012
<b>Spend by Country</b>			
Cameroon	\$ -	\$ -	\$ -
Cyprus	386,000	-	-
Ecuador*	185,900	13,000	-
Equatorial Guinea**	3,584,950	3,058,000	4,597,000
Israel	4,000	1,530,000	1,471,000
Nicaragua	25,050	27,000	119,000
U.S.	2,251,450	3,161,000	4,404,000
<b>Total Spend</b>	<b>\$ 6,439,050</b>	<b>\$ 7,789,000</b>	<b>\$ 10,591,000</b>

\* In May 2011, Noble Energy transferred its assets in Ecuador to the Ecuadorian government.

\*\* Includes spend in operated and non-operated assets.

# IPIECA/API/OGP and GRI Index

REPORTING OVERVIEW REFERENCE	IPIECA/API/OGP	GRI	PAGE	REPORTING OVERVIEW REFERENCE	IPIECA/API/OGP	GRI	PAGE
Letter from our Chairman and Chief Executive Officer		1.1, 2.10, 4.2, 4.14	2-4	<b>Respecting the Environment</b>			
Core Values/Sustainability Commitments		4.8	5	EHSR Compliance		DMA-EN, EN28	25
Operational Highlights		2.1, 2.2, 2.3, 2.5, 2.6, 2.7-2.9, EC1, OG1	6-7	Applying a Water Management Strategy	E6	EN8, EN10, OG5, EN26, EN29	25, 27
Spotlight on DJ Basin	E1, E6, SE4	EC1, EC8, EN18, EN26, EN29, LA1	8-9	Water Recycling	E6	EN10, OG5, EN26	26
<b>Corporate Governance</b>				Participation in Water Leadership		EN26	26
Transparent. By Design.		4.8, DMA-SO	10	A Discussion on Hydraulic Fracturing Stimulation		EN1, EN26	28-29
Board of Directors and Committee Activities		4.1, 4.3, 4.5, 4.9, 4.11	10-11	Wildlife and Habitat Management	E5	EN11-EN13, EN14, OG4	30-31
Assessing Business Opportunities		4.11	11	Reducing the Operational Footprint		EN26	31
Compliance and Ethics	SE11, SE12	SO2, SO3	11, 13	Remediation		EN23	31
Revenue Transparency	SE13	EC1, EC9	12	Onshore Spill Prevention and Response	E8, E9	EN21, EN23, DMA-SO	31
Public Policy Engagement	SE14	SO5, SO6	12	Reducing Greenhouse Gas Emissions	E1, E4	3.9, 4.12, EN16	32-33
Spotlight on Marcellus Shale	E6, SE1, SE4, SE6	4.16, 4.17, EC1, EC7, EN29, LA1, SO1, SO10	14-15	Natural Gas Flaring	E1, E4	OG6, EN18, EN26	32-33
<b>Providing a Safe Work Environment</b>				Production Equipment Maintenance	E1	EN18, EN26	33
Safe. By Design.	HS1, HS2, HS3	DMA-LA	17	Managing Other Air Emissions	E7	EN19, EN20	33
Safety Performance	HS3	LA7	17-18	Spotlight on Eastern Mediterranean	E8, SE4, SE6	EC1, EC6, EC7, EN14, OG4, EN23, LA1	34-35
Employee Health and Safety Participation	HS1, HS3	LA6	18-19	<b>Caring for Our People</b>			
EHS Contractor Engagement		4.16	18	Talented. By Design.		2.10, DMA-LA	37
Hazard Recognition Campaign	HS1	LA6	19	Recruitment and Retention		LA2	37
Security	SE10	4.12	19	Employee Compensation and Benefits		LA3, EC3	37-38
Emergency Management	E8	DMA-SO, EN23	19-20	Local Hiring	SE6	DMA-EC, EC7	38
Enhancing Coordination with Local Emergency Responders		4.16, DMA-SO, SO10	20	Diversity and Nondiscrimination	SE15	LA1, LA13	38
Storm Preparedness			20	Career Development and Training	SE17	LA11	39
Subsea Capping and Containment Capabilities	E8	EN23	21	Spotlight on Wellness NOW	HS2	LA8	39
Spotlight on Deepwater Gulf of Mexico	E8	4.16, EC1, EN23, LA1	22-23	Spotlight on Equatorial Guinea	HS2, SE4, SE6, SE7	EC1, EC6, EC7, EC8, LA1, LA8, LA11	40-41
<i>DMA is disclosure on management approach.</i>				<b>Bettering People's Lives</b>			
<i>IPIECA/API/OGP indicators included in this index address the common reporting elements, at a minimum.</i>				Commitment to Human Rights		4.8, DMA-HR	43
<span style="color: red;">■</span> <i>Indicates partially reported GRI indicators.</i>				Social Investments	SE4	4.8, EC1	43-44
<i>OG indicates GRI Oil and Gas Sector Supplement indicators.</i>				Community Engagement	SE1, SE4	4.16, 4.17, DMA-SO, EC8	44
				About this Report		3.1-3.8, 4.16	45
				Performance Data	E1, E4, E6, E7, E8, SE4, SE6, SE15, HS3	EC1, EC7, EN8, EN16, EN20, EN23, LA1, LA7, LA13	46-47
				GRI/IPIECA Index		3.12	48

# OUR CORE VALUES GUIDE HOW WE DO BUSINESS AND PROVIDE THE FOUNDATION UPON WHICH TRUST CAN BE BUILT AND MAINTAINED WITH OUR STAKEHOLDERS. WE ARE COMMITTED TO TRANSPARENCY IN OUR INTERACTIONS WITH STAKEHOLDERS AND TO IMPROVING THE QUALITY AND CONTENT OF OUR SUSTAINABILITY REPORTING.

## FORWARD-LOOKING STATEMENTS AND OTHER MATTERS

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This report contains forward-looking statements that reflect Noble Energy's views about future events as of the date of this report. These statements by their nature are subject to risks, uncertainties and assumptions and are influenced by various factors. As a consequence, actual results may differ materially from those expressed in the forward-looking statements. We do not assume any obligation to update forward-looking statements should circumstances or management's estimates or opinions change.

The Securities and Exchange Commission (SEC) permits oil and natural gas companies, in their filings with the SEC, to disclose only proved, probable and possible reserves that meet the SEC's definitions for such terms. We use certain terms or estimates in this report, such as "resources." This estimate is by its nature more speculative than estimates of proved, probable and possible reserves and accordingly is subject to substantially greater risk of being actually realized. SEC guidelines prohibit us from including these types of estimates in filings with the SEC.

Investors are urged to consider closely the disclosures and risk factors in our most recent annual report on Form 10-K and in other reports on file with the SEC, available at Noble Energy's website, [www.nobleenergyinc.com](http://www.nobleenergyinc.com).

## REPORT ANALYSIS

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Environmental Resources Management, Inc. (ERM) reviewed Noble Energy's 2012 Sustainability Report against the *Oil and Gas Industry Guidance on Voluntary Sustainability Reporting* (2<sup>nd</sup> Edition, 2010), developed by the International Petroleum Industry Environmental Conservation Association (IPIECA), the American Petroleum Institute (API) and International Association of Oil & Gas Producers (OGP); and the *Sustainability Reporting Guidelines* (Version 3.1), developed by the Global Reporting Initiative. ERM found that the report contents address the indicators shown in the index on page 48.

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