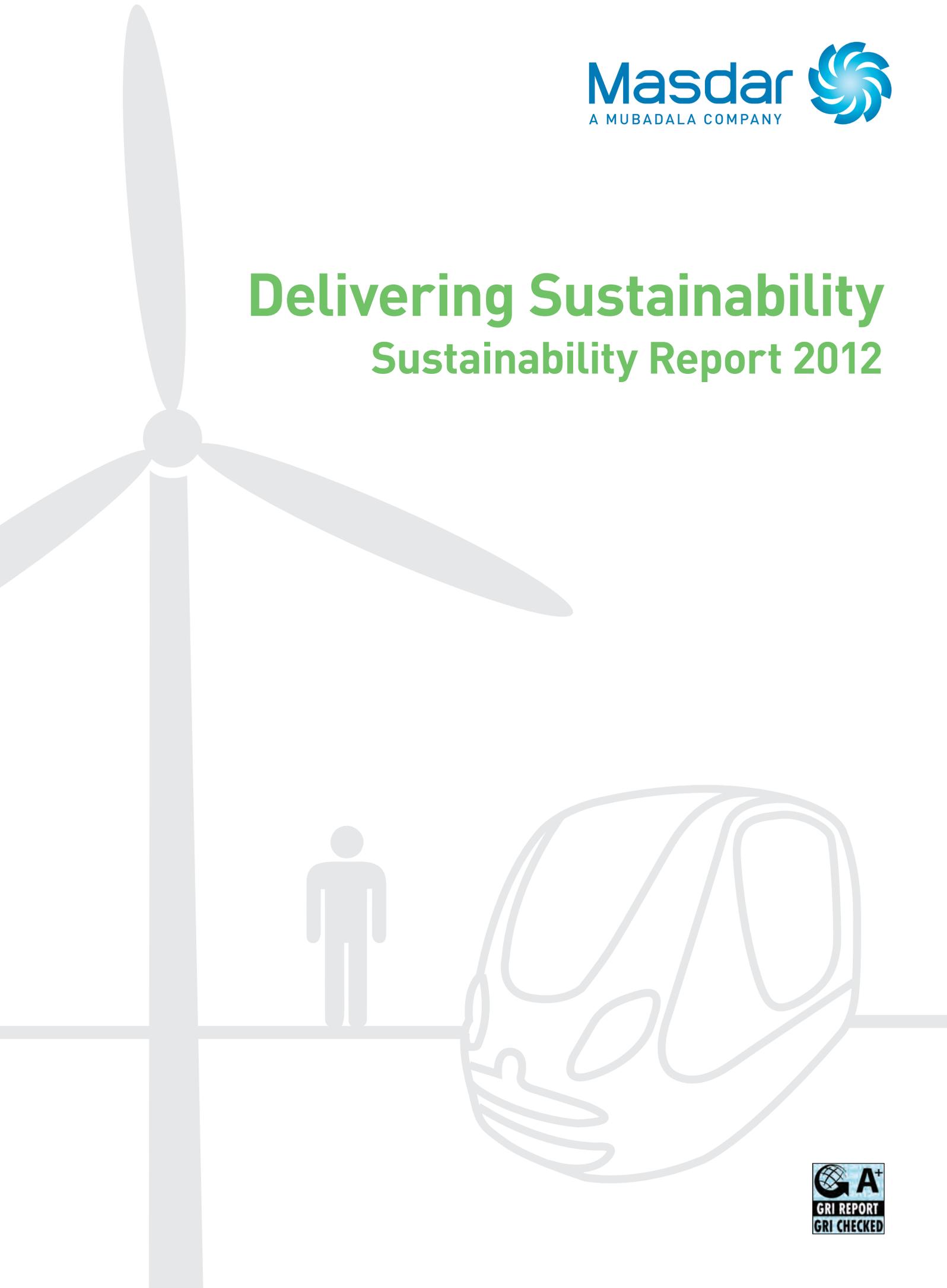


# Delivering Sustainability

## Sustainability Report 2012





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# About this Report

The Global Reporting Initiative (GRI) has pioneered and developed a comprehensive sustainability reporting framework that is widely used around the world. The framework enables all organizations to measure and report their economic, environmental, social and governance performance – the four key areas of sustainability.

The Reporting Framework – which includes the Reporting Guidelines, Sector Guidelines and other resources - enables greater organizational transparency about economic, environmental, social and governance performance. This transparency and accountability builds stakeholders' trust in organizations, and can lead to many other benefits. Thousands of organizations, of all sizes and sectors, use GRI's Framework in order to understand and communicate their sustainability performance.

For more information on GRI, visit [www.globalreporting.org](http://www.globalreporting.org)

This report produced by Masdar is in accordance to the GRI G3.1 guidelines with the reporting period from October 2011 (Q4'11) to September 2012 (Q3'12).



  
**Global Reporting Initiative™**

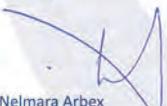
## Statement GRI Application Level Check

GRI hereby states that **Masdar - Abu Dhabi Future Energy Company** has presented its report "Delivering Sustainability" (2013) to GRI's Report Services which have concluded that the report fulfills the requirement of Application Level A+.

GRI Application Levels communicate the extent to which the content of the G3.1 Guidelines has been used in the submitted sustainability reporting. The Check confirms that the required set and number of disclosures for that Application Level have been addressed in the reporting and that the GRI Content Index demonstrates a valid representation of the required disclosures, as described in the GRI G3.1 Guidelines.

Application Levels do not provide an opinion on the sustainability performance of the reporter nor the quality of the information in the report.

Amsterdam, 9 January 2013



Nelmara Arbex  
Deputy Chief Executive  
Global Reporting Initiative



**A+**  
**GRI REPORT**  
**GRI CHECKED**

The "4" has been added to this Application Level because **Masdar - Abu Dhabi Future Energy Company** has submitted (part of) this report for external assurance. GRI accepts the reporter's own criteria for choosing the relevant assurance provider.

The Global Reporting Initiative (GRI) is a network-based organization that has pioneered the development of the world's most widely used sustainability reporting framework and is committed to its continuous improvement and application worldwide. The GRI Guidelines set out the principles and indicators that organizations can use to measure and report their economic, environmental, and social performance.  
[www.globalreporting.org](http://www.globalreporting.org)

**Disclaimer:** Where the relevant sustainability reporting includes external links, including to audio visual material, this statement only concerns material submitted to GRI at the time of the Check on 8 January 2013. GRI explicitly excludes the statement being applied to any later changes to such material.

## Contact

For feedback and any questions related to this report or any of Masdar's sustainability initiatives please contact [sustainability@Masdar.ae](mailto:sustainability@Masdar.ae)

The image features three stylized wind turbines against a solid blue background. One large, semi-transparent turbine is positioned in the upper left, with its blades extending across the top. Two smaller, solid-colored turbines are located in the lower half of the frame: one on the left and one on the right. The text 'Message from the CEO' is centered in the upper portion of the image, rendered in white. The overall aesthetic is clean and modern, emphasizing renewable energy.

# Message from the CEO



Masdar, a subsidiary of the Mubadala development company, was established in 2006 with a mandate from the Abu Dhabi government to advance renewable energy and sustainable technologies through education, research and development, investment and commercialization. Sustainability is a core value of Abu Dhabi's leadership and a fundamental pillar of our economic development plans.

Since its establishment, Masdar has rapidly expanded into a globally recognized company. Last year alone, Masdar achieved major milestones both in the United Arab Emirates and abroad, including realizing first power generation at the London Array offshore wind farm and breaking ground on the construction of the Masdar and International Renewable Energy Agency (IRENA) headquarters complex in Masdar City. We are pleased to share the results of our sustainability efforts through this report.

Masdar's first sustainability report aims to achieve two main objectives: setting a baseline for measuring our future sustainability performance and maximizing the transparency of our sustainability efforts.

We are very pleased and honored that our report received an A+ – the highest grade possible – from the Global Reporting Initiative for the report's disclosure of a wide variety of sustainability indicators. We look forward to expanding the scope of future reports and using this edition as a benchmark to provide our stakeholders an even clearer picture of our sustainability progress.

During the period covered in this report – October 2011 through September 2012 – Masdar's sustainability achievements were remarkable. Our local and international renewable energy projects produced 223,680MWh of clean energy and we received multiple efficiency design awards for the Masdar City project. The report also highlights our commitment to diversifying the local economy, developing Abu Dhabi's human capital and strengthening Masdar's position in the renewable energy sector through strategic partnerships and project implementation.

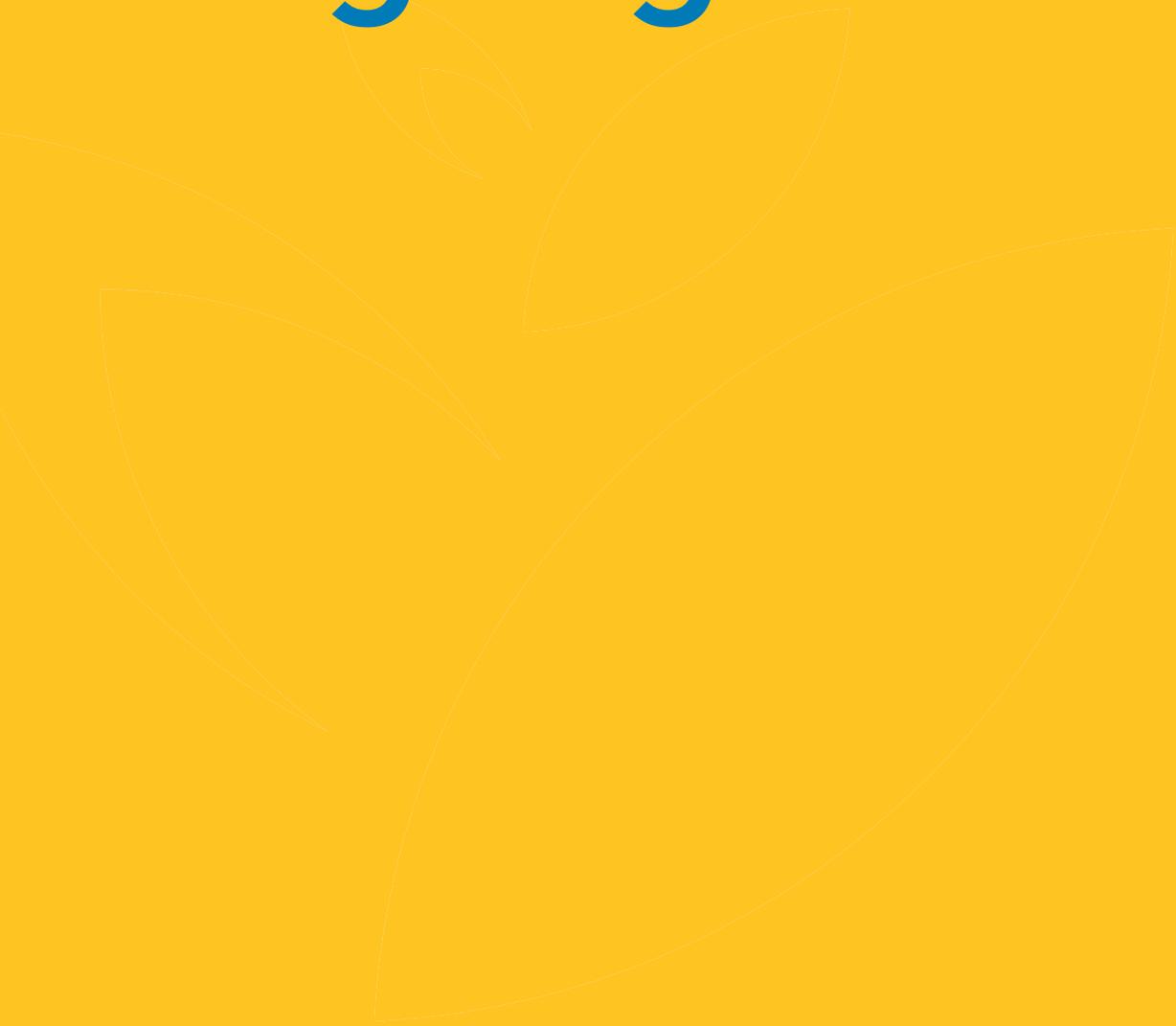
We hope that this report will further enhance your understanding of Masdar and its sustainability efforts. We look forward to continuing to invest, incubate, and advance the new energy industry in the UAE and around world in the year ahead.

Thank you

**Dr. Sultan Ahmed Al Jaber**  
Chief Executive Officer



# Masdar **Highlights**



# Masdar Highlights – Q4 2011 – Q3 2012

<b>Economic Development</b>	<ul style="list-style-type: none"><li>• 70% of all payments issued to local UAE banks</li><li>• 37% UAE national labor force at masdar</li><li>• 223,680mwh of clean energy generated during reporting period</li><li>• 77 registered companies in masdar city freezone</li></ul>
<b>Workforce</b>	<ul style="list-style-type: none"><li>• Total of 233 head count at masdar at end of reporting period</li><li>• 12.9m man hours without a lost time injury</li><li>• 11,728 hours of training for masdar employees</li><li>• 30% female labor force</li></ul>
<b>Environment</b>	<ul style="list-style-type: none"><li>• Monthly paper consumption reduced by 40,000 pages during reporting period</li><li>• 100% (111,311m3) of total wastewater recycled</li><li>• 86.8% construction waste diverted from landfill (including worker food waste)</li><li>• 226,657km travelled using alternative sustainable transport</li></ul>
<b>Supply chain</b>	<ul style="list-style-type: none"><li>• Total of 9160 tCO<sub>2</sub>e saved using sustainable materials in Masdar City</li><li>• To date, 444 pre-qualified companies through procurement portal</li><li>• To date, 270 supply chain code of conduct submittals</li><li>• Masdar recieved CIPS silver certification for procuremnt &amp; contracts process</li></ul>
<b>Community Involvement</b>	<ul style="list-style-type: none"><li>• 10,000 visitors to Market Day @ Masdar City</li><li>• 6,500 students visiting Masdar City &amp; WFES '12</li><li>• Hosted CDP awareness workshop for Abu Dhabi &amp; Dubai entities</li><li>• 4 programs launched in support of sustainable energy for all initiative</li></ul>
<b>Products and Services</b>	<ul style="list-style-type: none"><li>• 337 students enrolled at masdar institute in 2012</li><li>• 98.5% helpline calls completed within allocated time at masdar</li><li>• Siemens HQ won MIPIM architectural review future office award</li><li>• Total of 860mw installed capacity of clean energy added to global energy mix</li></ul>



# About Masdar



# About Masdar (Abu Dhabi Future Energy Company)

Launched by the Abu Dhabi leadership in 2006 and guided by Abu Dhabi Economic Vision 2030, Masdar a wholly-owned subsidiary of the Abu Dhabi Government-owned Mubadala Development Company, is a catalyst for the economic diversification of the emirate. The Masdar initiative drives new sources of income for the Emirate and strengthens Abu Dhabi's knowledge-based economic sectors.

The first renewable energy company to adopt a ground up approach; from education and research to commercialization and deployment, Masdar aims to advance the clean energy industry. Masdar is also creating platforms to accelerate technology,

encourage investment, from private and public partnerships and identify smart policies.

Masdar is organized around three business units and an independent, research-driven graduate university. This holistic approach keeps Masdar at the forefront of the global clean energy industry, while ensuring it remains grounded in the pursuit of pioneering and commercially-viable technologies and systems. With each unit focused on a key component of the value chain, Masdar is constructed with the broad scope needed to meet the most pressing sustainability challenges of tomorrow.

Masdar Corporate Headquarters are situated in Masdar City, Abu Dhabi, United Arab Emirates.



## Masdar City

Enabling innovation and sustainable urban development in a modern cleantech cluster and free economic zone.

## Masdar Institute

Advancing the academic research critical to clean energy and sustainable technologies.

## Masdar Capital

Investing in the commercialization of tomorrow's most promising clean technologies.

## Masdar Clean Energy

Driving the development of large-scale clean energy projects.

As a driver for increased public and private sector cooperation and as part of advancing the critical and interrelated elements necessary to making progress in the next phase of energy Masdar manages various annual engagement platforms.



## Zayed Future Energy Prize

An annual award that recognizes achievements in renewable energy and sustainability.



## World Future Energy Summit

An annual event dedicated to advancing future energy, energy efficiency and clean technologies.

# Map of Masdar Activities

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## Our Projects



1. London Array, UK

2. Gemasolar, Spain

2. Valle 1 & Valle 2

3. Shams 1, UAE

3. Masdar City's 10MW Solar PV Plant, UAE

3. Masdar City

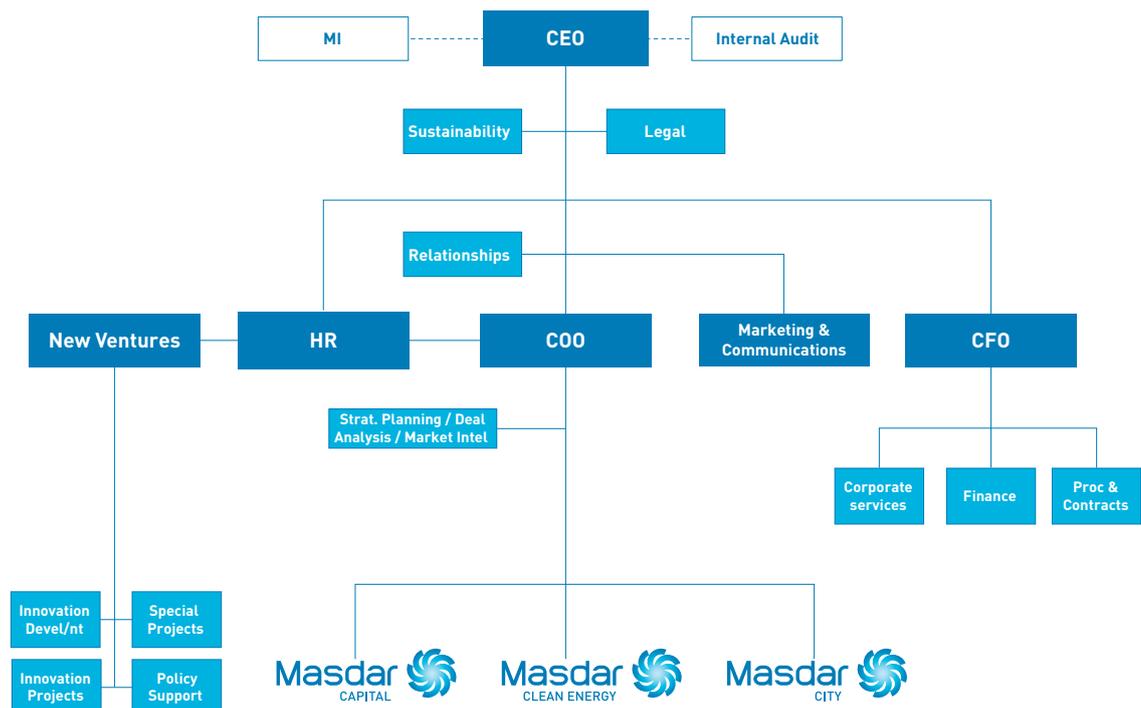
4. 15 MW Solar Plant, Mauritania

5. Wind Farm, Seychelles

# Masdar Board of Directors



# Masdar Organizational Chart

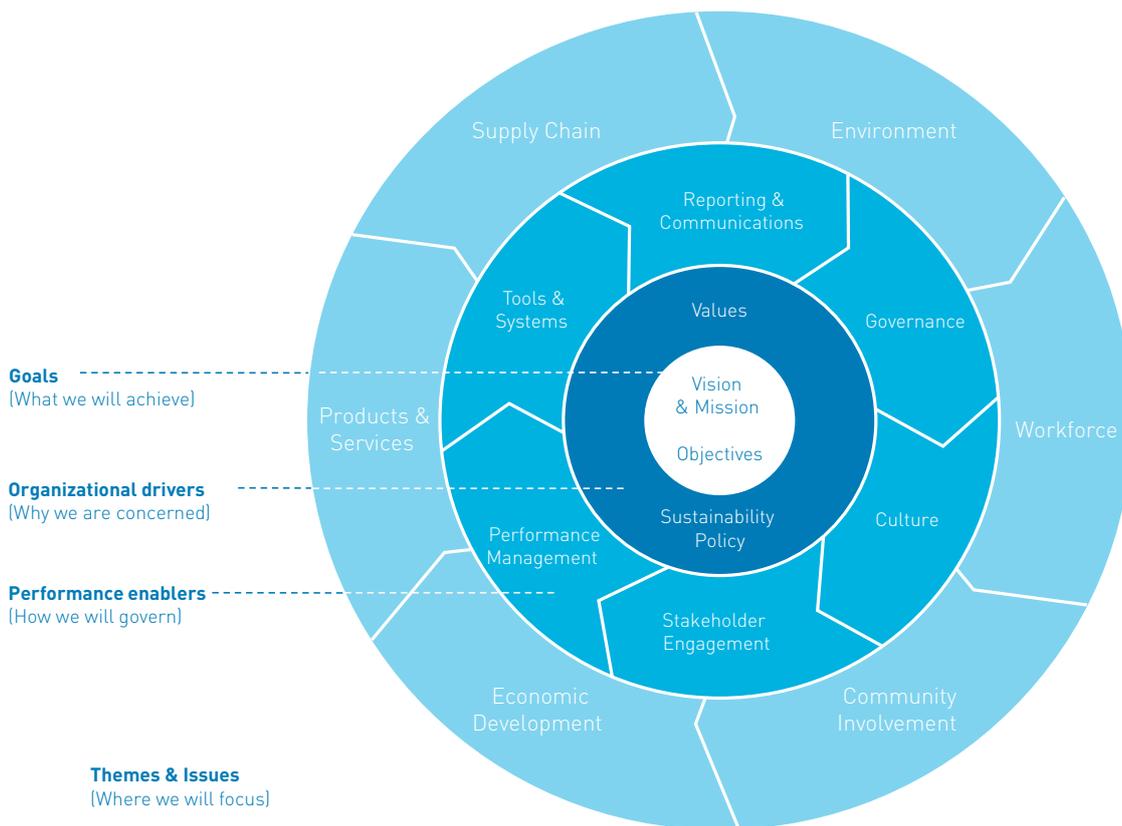


# Our Approach to Sustainability

For Masdar, sustainability is embedded in our overarching vision and mission statements as strategic goals and objectives as well as organizational drivers through the corporate values, principles and policies utilized in our operations. Masdar has developed a comprehensive sustainability framework that has been forged around the successful achievement of its goals. This includes a series of performance enablers designed to ensure that the sustainability performance of our business

practices is systematically integrated throughout the organization to assist in the advancement toward the strategic goals. The enablers are seen as a set of tactical elements that emphasize the way in which Masdar manages the various sustainability elements identified as key areas of focus. These focus areas are highlighted as themes and issues that must be addressed in order to meet and maintain the high level goals put forward.

**The themes have been designed to ensure that they primarily fall under the three primary pillars of sustainability: Economic, Environment and Social.**



# Vision, Mission and Objectives

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Masdar's actions are taken in support of the outlined corporate vision and mission. The established statements are as follows:

## Masdar Vision

To make Abu Dhabi the preeminent source of renewable energy knowledge, development, implementation and the world's benchmark for sustainable development.

## Masdar Mission

To advance renewable energy and sustainable technologies through education, research and development, investment, commercialization and adoption.

## Masdar Objectives

- To be profitable
- To build the reputation of Abu Dhabi and Masdar as a global player in sustainable and renewable energy
- Foster the development of a diversified knowledge-based economy in Abu Dhabi
- To reduce the carbon footprint of Abu Dhabi

# Organizational Drivers

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Masdar has a core set of corporate values that underlie all of its business activities. The values are articulated within the company's Code of Conduct, which serves as the basis for how employees are expected to do business. The values and the sustainability policy statement are the guiding principles for Masdar's sustainability efforts and outline the ethos of the organization.

## VALUES

### AGILE

We believe that success in today's energy marketplace requires the ability to move swiftly and in sync with changes in technology – that we can make decisions quickly and decisively and with an agility that keeps us at the forefront of the industry.

### SUSTAINABLE

We believe that sustainability is a key criteria that we must use in making decisions. We think about the degree to which the actions we take can be repeated in the future without any significant loss in quality, resources or efficacy.

### COMMERCIAL

We believe that the best way to increase use of clean technologies is to demonstrate that they are commercially viable – to prove that their adoption will not only benefit the health and sustainability of our planet, but will also return profits to shareholder

### GROUNDING

We believe that because our business is so forward thinking – pioneering new concepts and technologies – it's vital that our decision-making process be firmly rooted in reality. Everything we do is grounded in what is feasible, given financial and technical constraints. This will result in better technology, healthier returns and greater uses.

## Masdar's Sustainability Policy

A comprehensive, organization-wide sustainability policy is also critical to ensure that Masdar's definition, commitment and approach to sustainability is clearly articulated.

The following guiding principles describe how Masdar will act when operating our business to achieve sustainability excellence. These principles therefore underlie all of our efforts to drive sustainability excellence throughout the organization:

### **Drive innovation and operational efficiency through leading environmental technology and practices:**

1. Reduce the environmental impact of all aspects of our operations through strategic procurement, improved operational efficiency, minimizing raw or non-renewable materials and energy consumption, and reducing waste and emission outputs into water, soil and the atmosphere.
2. Promote cleaner habitats and ecosystems while building market opportunities through sound science, innovative research and deployment of sustainable technologies, and leading environmental operations including responsible investing decisions, life-cycle accounting, interoperability infrastructure development, and integrated mobility operations.

### **Foster the growth and well-being of our people:**

3. Provide safe, secure, and healthy interactions for all our employees, visitors, contractors and customers through adoption of best quality, health, and safety management practices, controls, and risk procedures.
4. Encourage employee development, in particular by creating employment opportunities, facilitating training opportunities, and encouraging a culture of continuous learning and engagement for all of our employees.

### **Engage and respond to stakeholder expectations:**

5. Respond to the issues, needs, and expectations of our internal and external stakeholders through regular consultation, collaboration, and ongoing dialogue.
6. Provide transparent information and communications when reporting against our corporate goals and objectives and where information is not available, we will provide an explanation or alternative information accordingly.

### **Invest in communities and people that support our business:**

7. Promote a vibrant long-term social fabric through active community involvement, public outreach, and sponsorship of local cultures and heritages via sustainability-related events.
8. Encourage local capacity building, and economic development through close co-operation with a global community of suppliers, business partners, researchers, governments, and citizens that contribute to the development of sustainable technologies and methodologies.

### **Act as a responsible corporate citizen:**

9. Adopt and implement human rights and labor practices consistent with international obligations and commitments, through best practice training, management reviews, responsible sourcing and compliance assessments including internal and external verification sources as necessary.
10. Adhere to the laws of all regions and jurisdictions in which we operate and act fairly and equitably in all business practices by encouraging competitive markets, abstaining from any improper involvement in local political activities, and strictly adhering to Masdar's Code of Conduct.



## Performance Enablers

For Masdar, the performance enablers are specific elements that support and drive effective integration of sustainability within an organization. Five enablers have been identified as part of Masdar's sustainability framework:

- **Governance:**

The structure, responsibilities, and roles necessary to ensure sustainability accountability throughout the organization.

- **Culture:**

The symbols, rewards, and organizational norms that need to be instituted to drive sustainability behavior.

- **Stakeholder Engagement:**

The process of identifying and responding to key issues and expectations from various Masdar stakeholders.

- **Performance Management:**

The process of tracking and measuring Masdar's sustainability performance against its stated sustainability objectives.

- **Tools & Systems:**

The technologies and systems required to assist with sustainability data collection, aggregation and reporting.

- **Reporting & Communication:**

The internal and external messaging that takes place to inform, educate, and start dialogue between Masdar and its various stakeholders.



# Our Approach to Governance

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Governance is the organizational framework by which Masdar ensures accountability for the organizational strategy and tactics related to sustainability. It defines the structure, roles, responsibilities, and related procedures that Masdar must adopt to ensure that responsibility for sustainability excellence occurs from the highest levels of the organization, and that appropriate decisions are made in light of proper guidance and direction from senior leadership within the company. A governance framework helps ensure coordination and communication of efforts across the entire company.

## Masdar Internal Audit Process

Internal Audit is part of the corporate monitoring function within Masdar and contributes to the creation of shareholder value by promoting a risk & control-oriented culture and provides independent and objective assurance to the Board of Directors and Audit Committee about the quality of risk management, business controls and governance procedures across the company. The scope of work of the Internal Audit Function is to determine whether Masdar's systems of risk management, internal controls, and governance processes, as designed and represented by management, are adequate and functioning in a manner to ensure:

- Risks are appropriately identified and managed.
- Interaction with the various governance groups occurs as needed.
- Significant financial, managerial, and operating information is accurate, reliable, and timely.
- Employees' actions are in compliance with policies, standards, procedures, code of ethics and applicable laws and regulations.
- Resources are acquired economically, used efficiently, and adequately protected.
- Programs, plans, and objectives are achieved.
- Quality and continuous improvement are fostered in Masdar's control process.
- Significant legislative or regulatory issues impacting Masdar are complied with and addressed appropriately.
- Opportunities for improving management control, output, and Masdar's image may be identified during audits. They will be communicated to the appropriate level of management.

## Masdar Governance Committees

To ensure the governance framework meets the expectations of stakeholders, Masdar has established a series of committees, each specifically tasked to address areas to foster proper governance and enhance the sustainability efforts of the company.

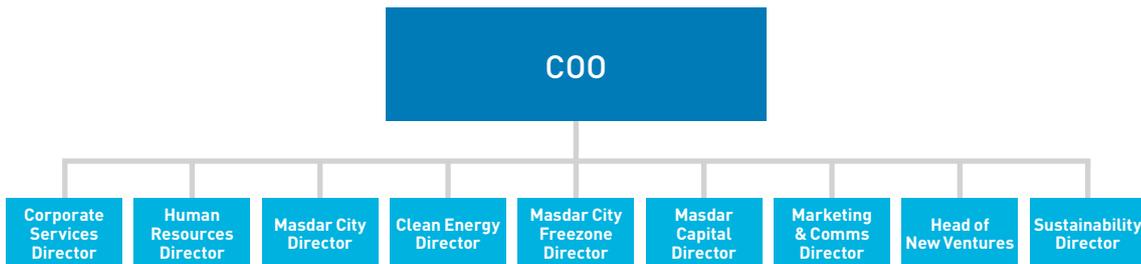
### Masdar Executive Committee (ExCom)



Masdar’s ExCom is the most senior committee within Masdar and is chaired by Masdar CEO. The committee is obliged to meet on a weekly basis and is tasked with highlighting key operational developments and issues related to the company. The committee enables a channel for upward and downward cascading of information, actions and decisions based on the following topics:

- Business update from OpCom
- Company Performance Tracking (monthly)
- Governance/Process
- Internal Audit & Compliance update
- Legal Update
- Shareholder & Stakeholder matters

### Masdar Business Operating Committee (OpCom)



Masdar’s OpCom has been established to highlight key operational developments and issues related to projects within the Business Units. OpCom represents a communication link between the executive management and the business units and departments. The committee members meet once a week and address the following topics:

- Project updates
- COO feedback from ExCom
- Special topics – CEO update
- Quality, Health, Safety & Environment issues
- Matters going to Investment Committee
- Assign and track responsibilities

## Masdar Investment Committee (IC)



\*Board of Director Approval required

In order to ensure that the overall investment process is dealt with in the best interest of the company, the Investment Committee meets when an opportunity for investment is put forward and in need of review. The committee is tasked with evaluating and agreeing upon potential investments and divestments proposed by different business units of the company taking into account the social, environmental impacts along with the economic benefits. The investment must address the following criteria:

<b>Fit with Masdar Strategic Objectives</b>	Build Rep. of AD and Masdar as a global player in Sustainability & Renewable Energy
	Foster Development of Local Knowledge Based Economy
	Critically to a Strategic Masdar Initiative
	Reduction of Carbon Footprint
<b>Financial Attractiveness</b>	Profitability
	Ease of Exit
	Financial Exposure
<b>Risk Profile</b>	Risk
	Risk Mitigation
<b>Ability to Deliver</b>	Masdar Capabilities
	Resource Availability

## Masdar Tender Committee (TC)

TC members: Chairman (CFO), Corporate Services Director (Vice Chairman), Purchasing Manager (Secretary) + eight TC members (subject matter experts)

TC is in place to ensure that procurements and contractual agreements are dealt with in a professional manner in order to maximize the consistency in the interpretation of the procurement process. The committee meetings may be attended by one representative from the legal department as well as the Head of the Internal Audit to ensure that anti-corruption policies are rigorously followed and auditable.



# Our Approach to Organizational Culture

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Many organizations are defined by their organizational culture, at Masdar a significant effort has been taken to develop an organizational culture that can be admired. The development of codes of practices and conduct highlight the philosophy that Masdar is trying to instill in every employee. A main driver is establishing a culture of sustainability, which is when sustainability enhancing practices are performed without even thinking about it. The aim is to have sustainability so integrated into all business activities that sustainability thinking and actions become almost second nature.

## 'Know the Code' – Masdar's Corporate Code of Conduct

**Acting with integrity** - Acting ethically and responsibly in the way we treat our colleagues, the Company, and the Company's assets and information: with respect, care, honesty and fairness at all times.

**Business confidentiality** - Applies to the security and confidentiality of intellectual property and confidential information entrusted by Masdar to employees.

**Digital system use and information technology security** - Relates to the responsible and ethical use of these assets and the data and information stored and processed on them.

**Integrity in dealing with others** - Being fair, transparent, ethical and law abiding in all relationships with individuals and organizations outside the company.

**Conflict of interest** - Ensure that an employee does not takes actions or has interests that may make it difficult to perform his/her work for Masdar objectively, responsibly, ethically and effectively.

**Health, safety, security and the environment** - To recognize that safe operations depend not only on technically sound plant, equipment and facilities but also on competent employees and an active health, safety, security and the environment (HSSE) culture.

**Money Laundering** - Employees are expected to use their own good judgment and common sense when assessing the integrity and ethical business practices of customers and business partners.

## Masdar Culture & People Management Committee

In 2011, Masdar senior management agreed to establish a committee of a cross section of the employees with the aim and objective to enhance and advance the organizational culture that makes Masdar unique. The established committee set about developing a list of priorities and classifying them into implementation groups based on the demands from Masdar's annual employee survey.

Key initiatives put forward by Masdar Culture and People management committee include:

- **Recognition & reward system**
- **Meetings and Language**
- **Business & Uncertainty management**
- **Building trust through empowerment**
- **Lead by example 'Practice what we preach'**
- **Promoting a reading culture**

## Social Activities Committee

A major success of 2012 has been the significant increase in social activities offered as a result of the creation of the social activities committee. The aim is to facilitate more employee interaction in a social environment, increase harmony among Masdar employees and to promote a healthy lifestyle and work life balance for employees. The social activities committee aims to organize two external sporting events or activities, one activity at Masdar offices, and two lunches and learning sessions per month. The committee is composed of various employees that dedicate time outside of their day-to-day responsibilities to create, implement and spread the news of events to all Masdar employees. The social activities committee manages a weekly football match available to all employees and Masdar Institute students.



## Sustainability Awareness - The START Initiative

In 2009, Masdar developed an awareness initiative to further educate employees about the importance of sustainability and understanding how one's behaviors can collectively have either a positive or negative impact on the environment.

This is a continuous campaign that uses workshops and visuals to educate and enhance the employees understanding of sustainability. A series of workshops were conducted in conjunction with the deployment of posters, notebooks, stickers and magnets throughout the office and to employees each with tips on how to behave in a more sustainable manner. A microsite has been developed to showcase a variety of tips and provide a platform for which employees can register ideas that will benefit the company and reduce Masdar's environmental impact.



In December 2011, Masdar launched a waterless carwash program within the Masdar SAF (Sustainable Administration Facilities – Masdar's temporary offices) carparks. The system uses roughly 250ml of water for every wash using a specially designed sponge. The savings compared to conventional driveway car washing results in approximately 250L of water saved each wash. Employees were given the option to pay for either a one off wash or subscribe to a monthly package.

During the reporting year, Masdar employees benefited from approximately 2,400 individual carwashes with approximately 20 employees benefitting from the monthly packages. This initiative resulted in water savings of over 600,000L compared to employees washing their cars using conventional methods.

## Sustainability Awareness - Lunch & Learn sessions

In order to maintain a strong culture of continuous learning and understanding Masdar initiated a series of sessions that are conducted during the lunch hour. Employees are encouraged to bring their lunch and listen and learn about activities within Masdar, as well as outside of Masdar. The spokespersons will be experts in a particular field of sustainability or UAE and Middle Eastern heritage. The lunch and learns tend to include a Q&A session to create interaction. It is understood that not all employees are able to attend the sessions and so each one is recorded and the video placed on the Masdar intranet for easy access by all Masdar staff.

September-11	<b>Strategy Review and Business Planning Process</b>	Rami Abu Laila
October-11	<b>What is CDM?</b>	Beatrix Schmuelling
	<b>Why Carbon Capture Storage (CCS)?</b>	Othman Zarzour
November-11	<b>Carbon abatement projects in the power and industrial sectors</b>	Dr Oliver Behren
	<b>An Introduction to the Emirati Culture</b>	Taryam Al Subaihi
December-11	<b>Challenges with Carbon Capture and Storage</b>	Paul Crooks
	<b>Embrace Arabia – intercultural Awareness workshop</b>	Ali Al Saloom
January-12	<b>Introduction to Sea Water Desalination</b>	Dr Olaf Goebel
	<b>Desalination by Reverse Osmosis</b>	Dr Olaf Goebel
March-12	<b>Journey through change JTC</b>	Mrs Hala Kazim
	<b>Choose to be calm</b>	Sona Bahri
April-12	<b>Ahdaaf</b>	Anas Bukhash
July-12	<b>Algae: From Biofuels to human health</b>	Dr. Hector H. Hernandez
	<b>Risk Management</b>	Abu Jahed Ahad
	<b>Ramadan: A Different Perspective</b>	Dr. Hassan Dawood
	<b>Purification of the Soul</b>	Ali Al Shaali
August-12	<b>Mobilizing Social Networks</b>	Dr. lyad Rahwan

## Kallemna



In order to help create and foster the best possible work environment for everyone in the organization "Kallemna," a whistle-blower system managed by "Ethics Point," has been implemented to allow employees to voice concerns regarding malpractice or wrongdoings and violations of policies. Kallemna is a secure platform which provides an alternative channel to communicate concerns confidentially through a secured landline, and a web-based reporting tool.





# Our Approach to Stakeholder Engagement

For Masdar, a stakeholder is a person, group or an organization that has a direct or indirect stake in the organization because of how they can affect or be affected by the organization's actions, objectives and policies. Examples of stakeholders include employees, investors, community members, customers and more. Stakeholders read reports for various reasons. For example, potential employees might read a sustainability report to determine if the organization's values match their own. Mapping all of Masdar's stakeholders is necessary to identify the universe of potential parties that could be impacted, and subsequently engaged by the organization. A systematic approach to mapping these stakeholders and their roles in impacting Masdar's efforts is highlighted below.

## Stakeholder Mapping:

**Partners** – Through Masdar's projects and activities a number of partnerships have been established both internationally and locally. These partnerships are formed based on the sharing of common values and objectives that allow for mutual benefits.

**Regulatory bodies / public administration** – First and foremost, Masdar has an obligation to meet and satisfy all requirements from regulatory bodies and work closely with other government entities. Masdar is dedicated to advancing the sustainability credentials of Abu Dhabi and the UAE.

**Clients** – Continued dialogue between Masdar and its Clients enables the understanding of concerns and expectations in a changing environment. Providing our Clients with sufficient information to allow their assessment of added value and potential opportunities is a main priority to strengthen relations.

**Employees and executives** – Masdar recognizes that any organization must ensure that the employees collectively embody the organizational values and philosophy. Continuous dialogue is needed to maintain this and understand any concerns or opportunities that will potentially affect the sustainability journey positively or negative allowing for a remedial action planning to be put in place.

**Suppliers and contractors** – It is understood that Masdar must not only focus on the activities of our operations and employees but also embrace the needs and expectations of its suppliers and contractors. This enables Masdar to positively impact those outside of our direct sphere of influence.

**Shareholders** – Understanding the needs and expectations of our shareholder is vital to ensuring progression in accordance to shareholder requirements. Comprehensive communication on project progress allows for adequate guidance and valued feedback.

**NGOs** – Masdar is aware of the importance of its relationships with NGOs and the value in knowledge sharing and cooperation. Many NGOs look at Masdar for guidance and exposure to new technologies and solutions and is deemed as a key initiative towards sustainable development.

**International Governing Bodies** – Masdar plays an active role in the development of policy and implementation of a variety of international initiatives. International governing bodies increasingly look to Masdar to highlight best practices and advancements in sustainability through the role of 'change agent'.

**Local Communities** – Masdar acknowledges that those that can be directly affected positively and negatively from our operations are that of the local surrounding communities. The intent of Masdar is to offer enhanced benefits and services and to embark on two-way communication to assess the impacts of the projects undertaken by Masdar. Education and awareness is crucial to Masdar role with its local communities

**Academia** - Masdar is actively engaged with various academic institutes through the Masdar Institute and also is requested to provide information to aid students with an interest in sustainable development and clean technology. Masdar is actively involved in outreach programs to both educate and establish an interest in young student to guide them into pursuing careers in renewable technologies.

**Sustainability Community and the Media** – Masdar is dedicated to providing a platform for discussion and debate on topic related to sustainability. The activities within Masdar have attracted interest from all over the world and Masdar recognizes that it has an obligation to communicate the progress and continuously embrace a knowledge-sharing philosophy. Masdar understands that the media play a key role in the communication of messages to a wide audience and act as a catalyst to evoke change towards a more sustainable future.

## Engagement Activities

Engaging stakeholders is an important part of our sustainability performance as stakeholder's interests, expectations, and needs not only inform where Masdar should focus its economic, environmental, and social efforts, but also help define what success means to the organization. During the reporting period Masdar conducted a series of stakeholder engagement exercises that significantly benefitted the materiality of Masdar's first sustainability report. Such engagements included:

**Report Engagement workshop @ WFES – (January 2012)** - Masdar hosted a workshop open to all attendees of the World Future Energy Summit to engage and discuss the development of Masdar's first sustainability report. The workshop highlighted the philosophy behind the need to report and encouraged the members of the workshop to provide valuable input into what the report should consist of. Following this exercise, Masdar was able to define the elements that were identified as material to a wide range of stakeholders.

**Employee Satisfaction Survey (July 2012)** - Masdar conducted an employee satisfaction survey that gathered employee feedback on Masdar's policies and procedures.

**Brand Awareness Survey (July 2012)** - Masdar conducted a brand awareness survey that served to establish an understanding and level of knowledge of Masdar and the business objectives. The survey took place through telephone interviews of members of Masdar's contact database. A total of 615 respondents from all parts of the world provided an insight into the perception of Masdar throughout our identified stakeholder map and served to develop the materiality of this report.

**Customer Satisfaction Survey (July 2012)** - Masdar conducted a customer satisfaction survey to gauge the satisfaction of Masdar freezone tenants and to identify strengths and areas of improvement. The survey took place over a 3 month period and targeted tenants at Masdar City who are in part or wholly responsible for their organization's tenancy decisions. The survey reached 68% of all contactable tenants and consisted of face-to-face interviews and telephone interviews, where appropriate.

Key findings of the Customer Satisfaction Survey include:

Reasons for joining Masdar City	
Emphasis on green & renewable energy	37%
Partnership with Masdar	28%
Benefits of Freezone	27%
Investment in my firm	18%

A total of 77 percent of respondents feel that if they had to decide again on taking up tenancy in Masdar City they would make the same decision knowing what they do now. Another key finding from the customer survey was the overall demand for progress updates on Masdar activities. This is one of the main reasons for the development and release of the Masdar's sustainability report.

## Stakeholder Materiality Analysis

The following table outlines the stakeholder engagement process and the resulting findings to be addressed as part of this report.

Key Stakeholders	How Masdar engages with key stakeholders	Material Issues raised through key stakeholder engagement exercise	Masdar's response to issues raised
Partners	Working groups Progress reports Conferences/panels MoU's Survey / Social media	Adherence to international standards Demonstration of ethical practices Showcase best practices Portfolio progress	Governance Supply chain Environment Products & services Performance management
Regulatory Bodies / Public Administration	Meetings Survey Engagement Forums Audits / Committees	Credibility of performance data Compliance efforts Continuous disclosure	Governance Environment Performance Management
Tenants	Helpline Survey / Meetings Social Media / Newsletters One-on-one meetings	Access to business State of the art facilities Networking opportunities Performance data	Economic development Products & Services Community Engagement Reporting & Communication
Customers	Satisfaction Survey One-on-one meetings Helpline Conferences Social Media	Policies Showcase best practices Product responsibilities Supply chain practices Performance against targets	Products & Services Culture Environment
Employees and Executives	Annual Employee Survey Internal Newsletters Intranet / Helpline One-on-one meetings Lunch & Learn sessions Social Media	Job security Career development / Awards Recognition of work (Achievements) Performance against commitments and targets Portfolio Progress	Workforce Products & Services Environment Culture Community involvement
Suppliers and Contractors	Progress meetings Audits Pre-qualification process Tender process Workshops Product Directory	Supply chain management Policies Reputational assessment Organizational overview Insights on the organization's values and drivers Recognition of performance data	Supply Chain Economic development Culture Environment
Shareholders	Progress meetings One-on-one session Working groups Annual reports AGM	Portfolio progress Social impacts Economic Diversification Demonstrating best practices Emiratization	Economic development Community involvement Workforce Supply chain Performance management
Non-Governmental Organization (NGO's)	Surveys Conferences/panels Workshops / Committees Newsletters / Social Media	Performance data Targets and commitments Follow up on past commitments Community relations and programs	Performance Management Tools & Systems Supply Chain Environment
International Governing bodies	Conferences/Panels Working groups Committees Progress Reports Social Media	Lessons learned Progress reports Demonstrating best practices Social Impacts	Products and services Community involvement Environment Supply chain
Local Communities	Helpline Outreach Programs Social events Survey / Newsletters Social Media	Benefits of amenities How the business helps "me" the local citizen Environmental and social impacts Performance data	Community Involvement Environment Economic development Workforce Reporting & Communication
Academia	Conferences MoU's Lunch & Learn sessions Newsletters / Social Media	Engagement and advancement of industry issues Lessons learned and Best Practices Performance data	Culture Performance Management Environment Supply Chain
Sustainability Community and the media	Site Visits Newsletters Brand Awareness Survey Conferences/Panels Social Media	Case studies of exemplary corporate behavior and responsibility Lessons learned & Best Practices Performance data	Products & Services Environment Supply chain Governance Reporting & Communication



# Our Approach to Performance Management

For Masdar, performance management is the process of measuring the organization's sustainability performance against its stated objectives. Performance management is comprised of:

- Objectives
- Key Performance Indicators (KPIs)
- Targets
- The process by which these objectives and KPIs are tracked and measured (assessment process)

## Objectives

Masdar sets operational objectives as a vehicle to define the expected corporate, business unit and individual outcomes to achieve the overall business plan. Incorporating sustainability into the development of annual objectives is a critical step in the integration of sustainability into how Masdar is run.

- **Workforce** - Deploy leading employee programs and standards for all workers directly associated with Masdar operations.
- **Economic development** - Accelerate the advancement of local economies where Masdar operates.
- **Products and services** - Responsibly deliver products and services that promote the transition to low carbon economies and sustainable living
- **Environment** - Manage all operations in such a way as to minimize environmental impact while demonstrating environmental stewardship
- **Supply chain** - Maximize our sphere of influence through ethical business practices and responsible sourcing
- **Community involvement** - Collaborate with and support external stakeholders (e.g. local communities, government, NGOs) to build lasting relationships while tackling relevant sustainability concerns

## Key Performance Indicators (KPIs)

Masdar acknowledges that sustainability performance leadership begins with a selection of strategic KPIs that enables the organization to focus on important issues. The defined KPIs are the measureable pieces of information or data used to track performance against Masdar's high-level sustainability goals and desired outcomes communicated to our stakeholders.

## Performance Management Reporting (PMR)

The PMR provides an update on Masdar’s monthly operational and financial performance when compared to the operational and financial position taken by each Unit in the Masdar Business Plan.

All Units’ key financial and operational updates are compiled for the Masdar Senior Management. These updates are in the form of a scorecard. The scorecards system allows Masdar to address each milestone line item with sufficient detail, which gives the opportunity to capture and explain deviations, and flag them for the Executive Leadership’s attention, when necessary.

An Annual Masdar score is a weighted sum of all Unit and department scorecards which is then issued to senior management for distribution to the board of Directors and Masdar’s shareholder

Unit scores represent a snapshot of Masdar’s actual performance against its planned annual targets. A “compliance” score signifies the achievement of major/strategic objectives as well as compliance with reporting guidelines.

At the year end, the individual employee’s performance assessment is both a reflection of the achievement of individual KPIs of the employee and the performance of the business unit as well as Masdar’s overall performance score. The employee performance evaluation is utilized using the Success Factor software to track, monitor and report individual’s KPI accomplishments.

## Masdar City KPIs

Masdar City has in place a series of KPIs that are essential to achieving the objectives creating a clean tech hub that promotes sustainable development and sustainable living. These 10 KPIs to have been designed to address all aspect of sustainability through design, construction and operation and will be used to assess performance for this reporting period.

Masdar City KPIs	
Performance Criteria	Performance Target
ENERGY: Energy Demand Reduction against Abu Dhabi BAU	50%
ENERGY: Provision of Renewable Energy	75% of Hot Water
WATER: Water Demand Reduction against Abu Dhabi BAU	30%
MATERIALS: Reduction in embodied Carbon in Materials	30%
ESTIDAMA*: Minimum number of Pearls to be achieved under the Pearl Building Rating System	3 Pearl Rating
ECONOMICS: Approved Construction Budget	Not to be exceeded

## Quality, Health, Safety and Environment (QHSE) Performance Management at Masdar

Masdar's QHSE team do their utmost to meet the established strategic goals and attain optimal, sustainable and safe operations by supporting Masdar in the implementation of QHSE policies. In line with Masdar's commitment for continuous improvement of QHSE performance, the department is tasked with:

- Initiating, developing and reviewing the required QHSE codes of practice and guidelines for implementation by Masdar
- To analyze and monitor QHSE performance of all departments and report findings to management and other concerned parties;
- To organize and conduct audits to ensure all departments comply with the QHSE legislations, requirements and corporate expectations;
- To keep abreast of the latest relevant QHSE developments and advise departments and contractors on QHSE issues;
- To provide Health, Safety and Environment (HSE) advice and assistance to ensure HSE requirements are being considered in all company projects;
- Maintain professional relationships, on behalf of Masdar's business units, with the federal and Abu Dhabi authorities to ensure relevant QHSE legislations are applied by the company's business units.

## Environmental Impact Assessment (EIA) at Masdar City

In accordance with the requirements of Federal Environment Law No. 24 of 1999 for the Protection and Development of the Environment, Masdar has prepared an EIA study for the first phase of the development detailing the findings on the project's environmental aspects and impacts and its monitoring and mitigation plans.

The EIA report was approved by the Environmental Agency Abu Dhabi (EAD) in May 2009. Subsequently, Masdar prepared a Construction Environmental Management Plan (CEMP) based on EAD's requirements. The CEMP was approved by EAD following which Masdar obtained a construction no objection certificate (NOC) on 06/09/09.

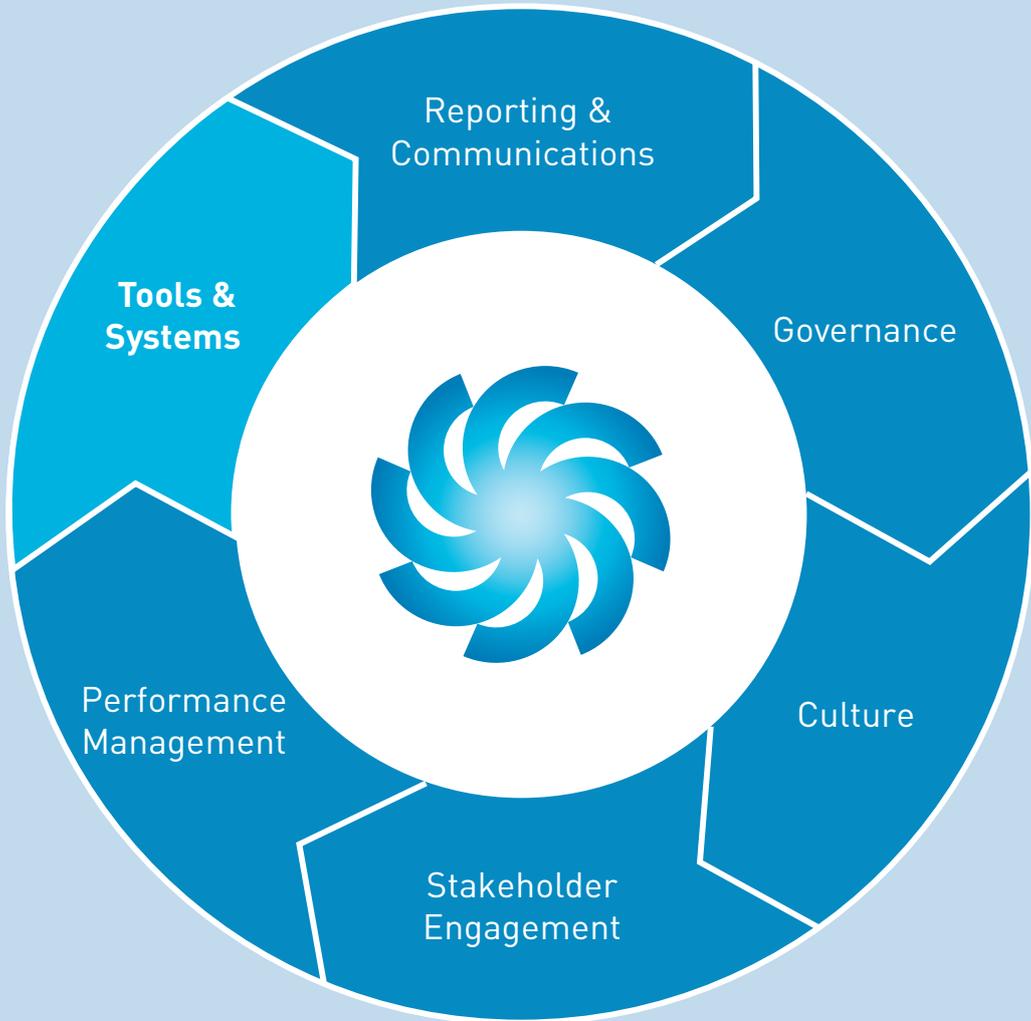


## CEMP at Masdar City

The CEMP is a compliance document that is issued under every construction contract of companies working within Masdar city. CEMP compliance is verified through a set of regular internal and third party audits and inspections. In addition EAD carries out random visits to the construction site.

The following criteria are used to assess the performance of projects within Masdar city against the CEMP:

- **Training & Induction Procedure** - Environmental training is essential for executing work in an environmentally sound fashion during the construction of Masdar City Phase 1. This procedure covers all aspects of training involving those personnel and activities likely to have an effect on the environment.
- **Environmental Complaints Procedure** - Complaints are the primary indicator of nuisance and other community dissatisfaction with site activities. It is important that all complaints are properly and systematically recorded, and acted upon.
- **Environmental Auditing & Inspection Procedure** - This procedure is to set out how the environmental compliance of the construction activities, as documented within CEMP, will be periodically inspected and audited.
- **Air Quality Control Procedure** - This procedure sets out the practices that the Masdar City contractors will adopt to minimize the air quality impacts arising from their construction activities.
- **Noise Control Procedure** - This procedure sets out the practices that the contractors will adopt to minimize noise generated from their construction works and to protect sensitive receptors.
- **Water Management Procedure** - This procedure sets out the practices that contractors will adopt to ensure that water resources are managed sustainably.
- **Materials Management Procedure** - This procedure aims to minimize the environmental impacts through the responsible use of materials during the construction phase.
- **Waste Management Procedure** - This procedure aims to minimize environmental impacts through the appropriate management of materials and waste generated during the construction activities.
- **Energy Management Procedure** - This procedure aims to minimize environmental impacts from energy use associated with the construction activities.
- **Environmental Incident Procedure** - This procedure is to provide details of the response to all environmental incidents that may occur during the construction work.
- **Environmental Monitoring Procedure** - This procedure is to provide details of the environmental monitoring requirements for the construction phase.



# Our Utilization of Tools and Systems

In order for Masdar to analyze the performance against the stated targets and objectives, a series of tools and systems have been implemented. They help introduce standardization and process controls which positively affect the effectiveness and efficiency of the actions taken (e.g. with sustainability data collection, aggregation and reporting).

## Tools

Masdar has partnered with a number of providers of data collection and management tools that support the on-going capture, collection, tracking, analytics and reporting of sustainability performance data.

### **C3 Energy**- Operational Carbon tracking tool

Masdar relies on C3 Energy to manage all of energy and emissions-related consumption production throughout Masdar City, including purchased energy; internally generated energy from solar and wind; purchased water, water consumption, and water treatment; as well as waste management – generation and recycling.

### **Success Factors** – Employee Performance Management tool

Masdar introduced Success Factors, a web-based software that integrates 5 performance levels for rating employee objectives and corporate competencies. The employee performance management tool assists in objective setting, workflows, approvals, tracking, rating and communication of progress of deliverables in real time for all employees.

### **SoFi** – Construction Carbon tracking tool

The Masdar construction carbon tracking tool is designed to collect the relevant qualitative and quantitative information and has capacity for the collection of such information for various entities, phases and projects in Masdar City Construction phase.

### **CAFM** – Computer Aided Facilities Management tool

This tool offers a single, holistic view of all facilities and maintenance activities, and can easily track every location, asset and person. It can analyze the processes, costs and efforts required for optimal operations, and can help understand the impact of acquisitions, utilization, maintenance, improvements, service provision and expenditures.

### **Projectwise** – Document management software

This is a specialized project engineering document management tool. It facilitates sharing, storing, commenting on the technical drawings.

### **EDMS** - Enterprise wide Document Management System

The EDMS is critical for any organization to manage its key asset, which is knowledge management/documents central to sustaining growth while protecting the organization by having retrieval/referencing of documents.

## Systems

To achieve excellence in QHSE performance, Masdar employees and contractors strive to apply Quality, Health Safety and Environment Integrated Management System (QHSE IMS). The purpose of this is to provide a framework to ensure that:

- The products and services of Masdar are designed, delivered and operated to the highest quality standards, thereby meeting the expectations of customers, stakeholders and regulatory bodies.
- Masdar's activities are carried out in environmentally responsible and protective manner and continually meet the underlying environmental performance expectations of Masdar initiative.
- Safe and healthy working conditions are assured to employees, contractors associated with Masdar's activities, and visitors.
- QHSE requirements are considered throughout the project life cycle and during operations.
- Products, services, facilities and activities of Masdar continue to meet regulatory requirements.
- The system provides dynamism for continual improvement in all the aspects of QHSE and flexibility to adapt to changing requirements.

Since 2010, MASDAR developed and implemented an integrated quality, health, safety and environment management system in accordance with the International Standards Organization (ISO). The implementation of this integrated management system has created a structured and rigorous set of processes and controls which are used to manage three key sustainability issues:

- Meeting Customer requirements and satisfaction (ISO9001)
- Operational environmental impact (ISO14001)
- Occupational health and safety (OHAS18001)

Masdar has implemented these systems as a part of an Integrated Management System for Quality, Health & Safety and Environment. The system is approved by Abu Dhabi Environmental, Health & Safety Center (AD EHSC) and certified by an Accredited Certification Body to respective International Standards.

## The Pearl Rating System for Estidama

Developed by the Abu Dhabi Urban Planning Council, the Pearl Rating System (PRS) is a framework for sustainable design, construction and operation of communities, buildings and villas. The PRS is organized into seven categories such as water and energy efficiency and resource management, where there are both mandatory and optional credits. To achieve a 1 Pearl rating, all the mandatory credit requirements must be met. To achieve a higher Pearl rating (2-5 Pearls), all the mandatory credit requirements must be met along with a minimum number of credit points. Masdar City is integrating its performance management process with the PRS to harmonize the efforts towards advancing sustainable development in Abu Dhabi and the UAE.

# CERTIFICATE

Management system as per  
**BS OHSAS 18001 : 2007**

In accordance with TÜV NORD CERT procedures, it is hereby certified that

**MASDAR**  
P.O.Box: 54115, Opposite Presidential Flight  
Khalifa City A, Abu Dhabi,  
United Arab Emirates



applies a management system in line with the above standard for the following scope

**Investment and project management as applied to commercial portfolio holdings, merger and acquisitions, and greenfield project and joint venture development in the fields of**

- a) renewable energy power production;
- b) carbon abatement (clean development mechanisms and carbon reduction) as well as carbon capture and storage and carbon credit portfolio management;
- c) Sustainable real-estate master development and clean tech integration knowhow;
- d) clean technology venture capital; and
- e) opportunistic technology manufacturing as relevant to the overall portfolio

Certificate Registration No. 44 116 091827  
Audit Report No. 3505 3944

Valid until 2013-05-06

Certification Body  
at TÜV NORD CERT GmbH

Essen, 2010-05-07

This certification was conducted in accordance with the TÜV NORD CERT auditing and certification procedures and is subject to regular surveillance audits. This certificate is valid in conjunction with the main certificate.

TÜV NORD CERT GmbH | Langemarkstrasse 20 | 45141 Essen | [www.tuev-nord-cert.com](http://www.tuev-nord-cert.com)



# CERTIFICATE

Management system as per  
**EN ISO 14001 : 2009**

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- d) clean technology venture capital; and
- e) opportunistic technology manufacturing as relevant to the overall portfolio

Certificate Registration No. 44 104 091827  
Audit Report No. 3505 3943

Valid until 2013-05-06

Certification Body  
at TÜV NORD CERT GmbH

Essen, 2010-05-07

This certification was conducted in accordance with the TÜV NORD CERT auditing and certification procedures and is subject to regular surveillance audits.

TÜV NORD CERT GmbH | Langemarkstrasse 20 | 45141 Essen | [www.tuev-nord-cert.com](http://www.tuev-nord-cert.com)



# CERTIFICATE

Management system as per  
**EN ISO 9001 : 2008**

In accordance with TÜV NORD CERT procedures, it is hereby certified that

**MASDAR**  
P.O.Box: 54115, Opposite Presidential Flight  
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- d) clean technology venture capital; and
- e) opportunistic technology manufacturing as relevant to the overall portfolio

Certificate Registration No. 44 100 091827  
Audit Report No. 3505 3942

Valid until 2013-05-06

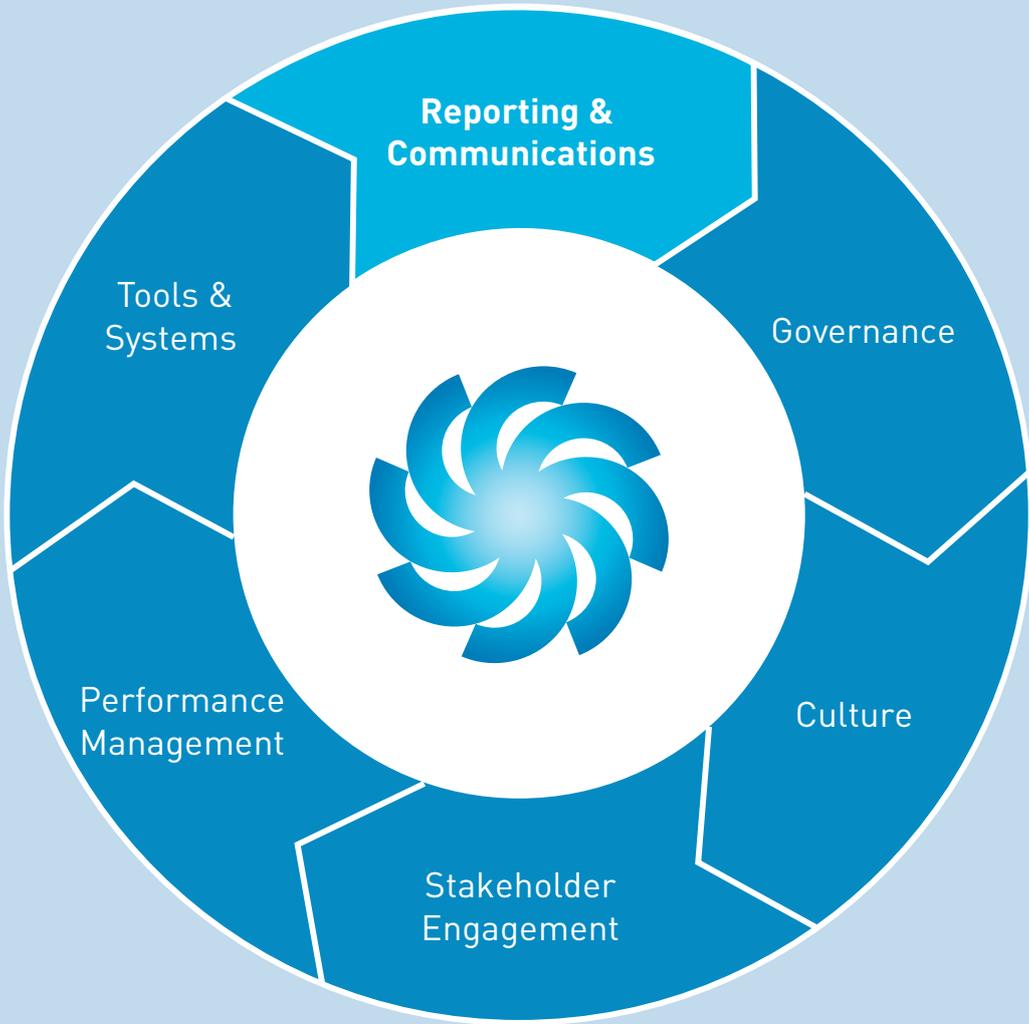
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# Our Approach to Reporting & Communications

For Masdar, effective communication to internal and external stakeholders facilitates awareness, education, and engagement. Crafting the right message and delivering it through the most appropriate vehicle is a critical component of any stakeholder engagement strategy.

## Internal stakeholder Communication



### Internal Newsletters (Wavelength)

Masdar continues to publish an informative newsletter for all employees to stay up to date with current activities in the renewable and sustainability sector as well as updates on Masdar projects and initiatives. The newsletter also acts to inform employees of upcoming events and provides a platform to learn about UAE and Arabic traditions through the culture corner. Originally published and printed in February 2012 the wavelength shifted to a digital version and saved approximately 5400 copies from being printed.

### Engagement forums (Town halls)

Masdar has established a program that allows for employees to take part in townhall-style meetings. Senior management from both Masdar and Mubadala are invited to provide updates on the progress of the wider portfolio of projects and initiatives. The town hall meetings allow senior management to respond to questions from employees and feel it is a useful platform to ensure that all employees are at the same level of understanding of current and future plans within Masdar.

### Social media

Masdar is active in the social media domain and utilizes these outlets to convey information about the innovative and progressing work that Masdar is taking part in. Masdar uses Twitter as the primary place for the broadcasting timely updates, links to the website and press releases. Masdar also use Facebook to post photos of activities and conduct competitions. Both Twitter and Facebook are crucial for receiving feedback from both internal and external stakeholders. Masdar has a defined corporate policy that states the expected behavior of Masdar employees and their use of social media.

### Engaging Intranet

The use of the intranet portal 'The Source' allows employees to have access to all of the up-to-date policies and all useful documents. The intranet has links to the various portals such as the upward mobility portal (online learning portal) and is where to find all updates and information about the latest activities within Masdar and beyond.

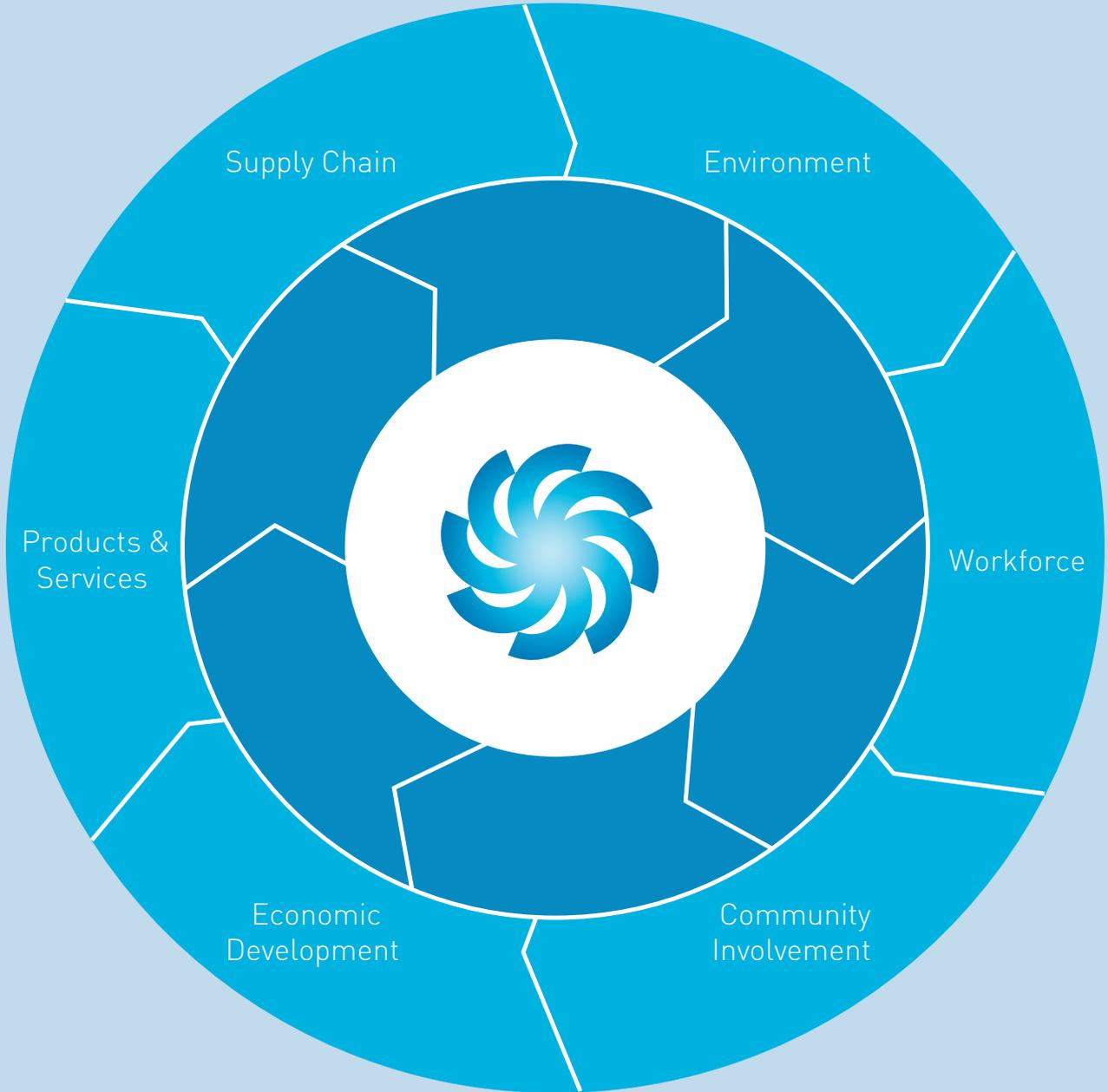
## External Stakeholder Communication

Masdar uses several methods to deliver significant messages to its external stakeholders. The role of Masdar is not only to provide an insight to its activities but to help people understand why sustainability is important in Abu Dhabi and the region. The following methods of communication are used to engage with Masdar's external stakeholders:



- Press Releases • Press conferences • Forums and Meetings
- Op-eds • Features • Q&A • Interviews

A unique method of communicating to external stakeholders is that of a quarterly newsletter known as 'The Masdar Times'. The aim is to provide external stakeholders with an overview of the many sustainability initiatives in the UAE and abroad. It also provides information on Masdar-specific activities and events. This is a published newsletter and distributed to key stakeholders. The newsletter is printed on 100percent recycled paper from a post-consumer fibre that is sustainably sourced.



# Our Material Themes & Issues

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Based on the current practices at Masdar, Six themes have been identified to achieve Masdar's sustainability goals. They are:

**Workforce** - Ensuring a safe, secure, healthy and rewarding workplace while recognizing the abilities and diversity of all of Masdar employees. This will help them reach their full potential through employee empowerment, engagement and a spirit of continuous learning.

**Economic development** - Redefining the term 'profitability' to include sustainability and stimulating local economies to make Abu Dhabi and the Middle East global leaders in renewable energy technology and sustainable development.

**Products and services** - Developing safe and responsible products and services, by ensuring that what is designed, built, sold, or invested in, is based on sound science, innovative research and deployment of sustainable principles.

**Environment** - Continually seeking to innovate and implement leading environmental management practices to proactively understand, manage and mitigate negative environmental impacts from Masdar's global operations, stewarding the health of local and global ecosystems.

**Supply chain** - Constantly seeking and driving improvement in the quality, cost effectiveness and sustainability of the goods and services purchased through the application of holistic lifecycle considerations, ethical and fair business practices, and responsible procurement policies and programs.

**Community involvement** - Fostering meaningful and lasting relationships with local citizens, civil society organizations, academia and government entities in the communities within which Masdar operates. At the same time promoting self-development, skill building and contributing knowledge to solving some of our most pressing social concerns.



# Our Workforce

# Our Workforce

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The workforce represents the area Masdar has the greatest “social” impact. Masdar has the opportunity of extending the impact of that contact through actions which seek to:

- Ensure a safe, secure, healthy and rewarding workplace.
- Recognize the abilities and diversity of all employees.
- Promote continuous learning and development for all employees.
- Train and develop employee core competencies, skills, knowledge and abilities to meet present and future job requirements.
- Create opportunities for personal and professional growth while encouraging teamwork.
- Provide leadership development and mentoring support.

This section of Masdar’s sustainability report highlights Masdar’s progress in moving towards the corporate vision and strategic objective of deploying world-class employee programs and standards for all employees directly associated with Masdar operations.

This is achieved through a number of means such as:

- On-the-Job training
- Business Unit training or rotational training
- Continuing education
- Corporate Awareness Training
- Ad hoc assignments / Secondments
- Online Learning
- In-house training programs
- Self-development/Self Study programs
- External training
- Coaching & Mentoring programs



## 233 Total Direct Hires

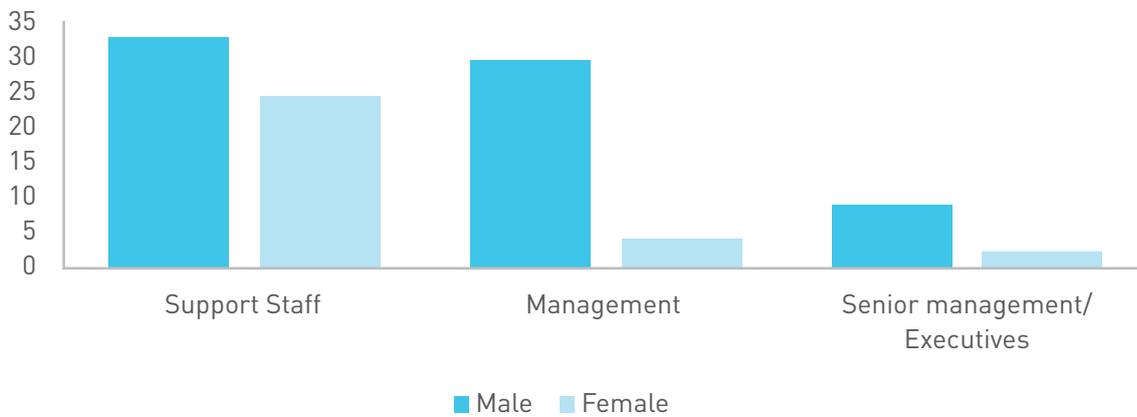
[September 2012]

## Masdar Employee Breakdown

Masdar believes that a diversified mix of employees is necessary to ensure the best minds are brought in to work together to achieve the organization's objectives. A diverse mix of nationalities allows for the collaboration of thoughts and experiences crucial to solving the global issues in promoting renewable energy and low carbon economies. All data is based on calculations from the end of September 2012, and all future assessments will be similar to this to ensure comparability unless otherwise stated.

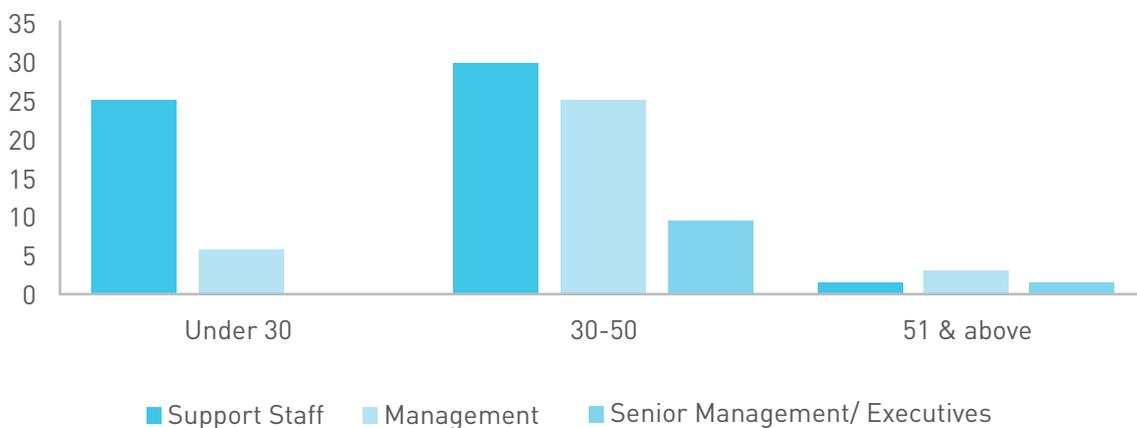
### Total Masdar Employee by Gender (%)

Masdar is dedicated ensure that each employee is given equal opportunities to excel and advance his or her career. Below provides an understanding of the gender balance of direct hires at Masdar as of September 2012 and will be used to compare in future reports.



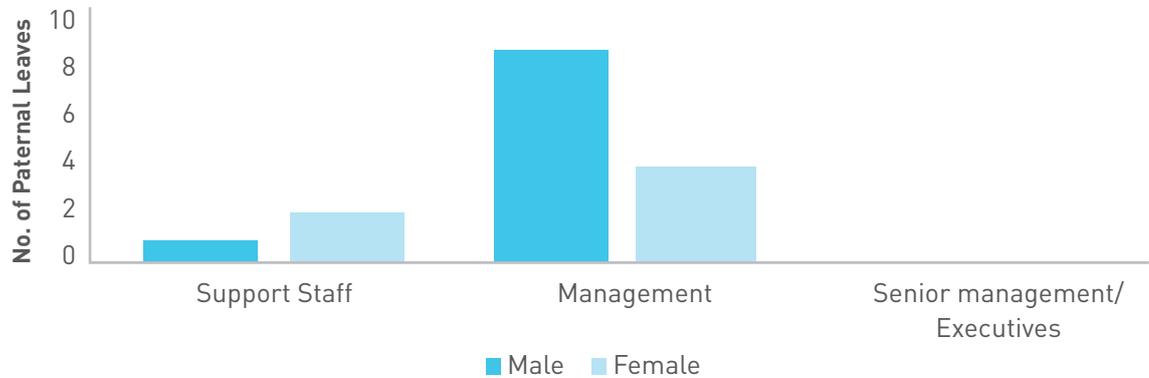
### Total Masdar Employees by Age Group (%)

Masdar looks to utilize talents and develop young minds to lead the way in the future deployment of sustainable solutions within Abu Dhabi and around the world, highlighting the continued efforts to advance and provide opportunities for career growth in those that excel in their roles.



## Total Paternal Leaves at Masdar (by gender)

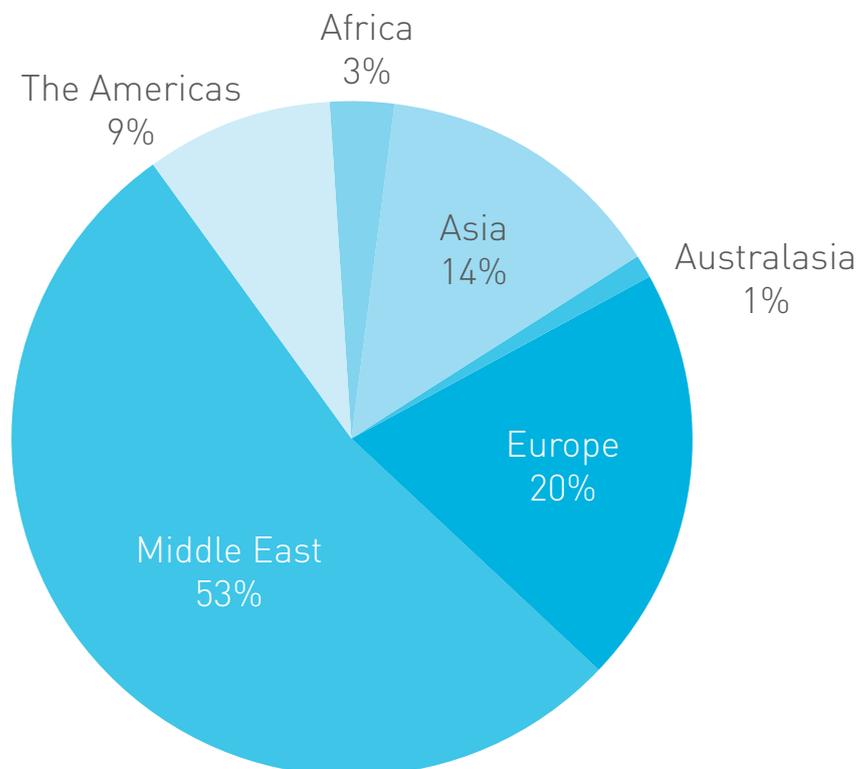
In keeping with the commitments to provide a working environment that allows for a healthy work-life balance, Masdar manages the paternity leaves and ensures that where possible and appropriate, employees every opportunity to return to work with strong support and flexibility.



Masdar offers assurance that all employees who take paternal leave are able to benefit the organization and meet family commitments.

## Total Masdar Employees by Origin (%)

A breakdown of the employee by origin firmly underlines the diverse workforce at Masdar. Not surprisingly, the majority of employees are from Middle Eastern origin, and the second largest group is European origin. This is justified by the increased number of projects within Europe.



## Masdar Employee Turnover

Masdar has made transitions in its focus of resources and its scale of activities. This has enabled Masdar to harness its in-house expertise to deliver an array of projects. Masdar must continue to introduce new ideas and concepts through active recruitment. In addition to making new hires, Masdar has recognized the need of 'right-sizing' so that it has the appropriate resources for the defined activities in its business plan.



# 12 New Hires

during reporting period



# 51 Voluntary exits

during reporting period

## Masdar Benefits Plan per Employee type

The compensation and benefits structure at Masdar is designed to attract, motivate and retain employees who will help Masdar achieve its strategies and objectives. Its policy is to pay fair, equitable and competitive salaries to employees.

### Full Time Employee Benefits:

- Salary
- Annual Leave
- Health Insurance
- Life Insurance
- Child Education Assistance
- Housing Allowance
- Furniture Allowance
- Vacation Travel Allowance
- Repatriation tickets for expats
- Visa expenses and medical expenses for employee, spouse and children

### Temporary Employee Benefits:

- Salary
- Health Insurance
- Visa expenses and medical expenses for employee only

### Internship Benefits:

- Internship Salary for UAE Nationals only

## Career development at Masdar – Employee Training Programs

The training portfolio serves as a learning strategy for Masdar’s employees for professional growth and career development. It also creates a productive corporate learning environment that can benefit everyone.

Masdar provides training courses that lead to high-level certificates or professional development units (PDUs). Each training event is tied to business requirements, professional growth and career development that enhance retention and employee engagement. Masdar Training Policies are extensive, and provide opportunities for the employee to embark on personal professional development with various reimbursement policies.

Masdar encourages professional growth by supporting and providing access to:

- Certificate/credential programs and exams
- In-House Competency Based Training Courses
- Externally Based Specific Training Courses

In 2012, Masdar implemented a Learning Management System (LMS) called the Upward Mobility Portal. It serves as the platform by which employees can access on line programs and apply for training programs offered by Masdar. Since March 2012, Masdar employees have undertaken 64 individual online training courses including:

- Project Management (8 Modules)
- Finance for Non Finance Professionals (6 Modules)
- Business English Writing (3 Modules)
- Mentoring (2 Module)
- MS Office 2010

Additionally during the reporting period, Masdar employees participated in more than 43 in-house and external training courses. Below shows the total number of hours of training during Q4’11 to Q3’12.

Type of Training during reporting period (hours)	UAE National	Expatriates
In-House Training	3584	5544
External Training	1488	1112
Total	5072*	6656

*\*Not including six month training course for 1 UAE National*



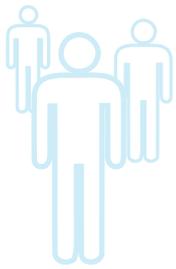
# 50 Average hours of training

per employee during reporting period

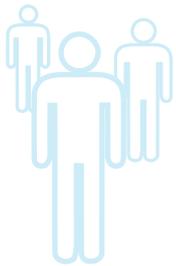
## Career Development at Masdar – Employee Mentoring Program

The Mentoring program is among the career development initiatives that allow employees with limited work experiences to learn, grow, and develop with the guidance of a seasoned staff member. This program provides opportunities for discussion, skill-building activities and experiences that enhance the working relationship and assist with professional growth. Protégés are allowed to choose their mentor according to which field interests them.

In order to develop the workforce, the transfer of knowledge between different professional levels is an important tool in ensure that potential future leaders of the company will have adequate knowledge to further the company's ambitions.



# 11 Enrolled Protégés



# 48 Mentors

Available senior managers enlisted:

Sustainability Director

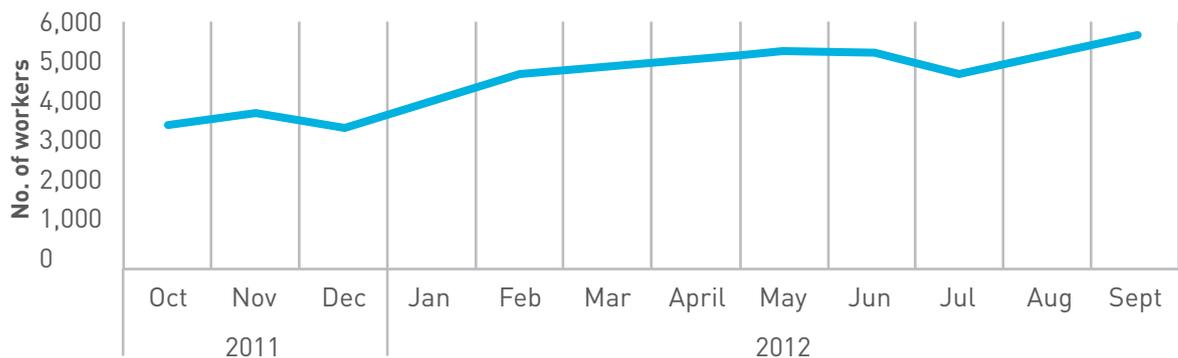
CFO

General Counsel

## Health and Safety Practices at Masdar

Masdar understands the responsibility to provide a safe working environment not only in the corporate setting but also in projects. Masdar ensures that employees are well-educated in the procedures for issues related to health and safety, with fire drills and employee first aid and fire warden training throughout the organization. During the reporting period, no first aid incidences or lost time injuries were recorded in the SAF offices. The below data therefore relates to Masdar City construction activities only and does not include Masdar Institute operations.

The major health and safety concerns for Masdar are those within the project sector and, more specifically, in Masdar City construction projects. The below graph highlights the increase in the workforce involved in Masdar City construction projects, which has jumped from 3,474 workers in October 2011 to 5,672 in September 2012, up 63 percent. The concerns arise from the nature of the work and an increase in the number of people involved in these projects



# 12,927,422 man-hours

Without a Lost Time Injury



# 1 Lost Time Injury



# 3.82 / 1,000 workers

Average monthly First Aid incidences



# 0 Fatalities

The Health and safety team at Masdar rigorously monitors the numbers of incidents and uses proactive measures to ensure the safety of the Masdar City workforce at all times. These proactive measures include:

- **Health and Safety Inspections** – Inspections are designed to ensure that contractors continue to operate within the guidelines outline by Masdar, and to ensure the safety of all staff at all times.
- **Health and Safety Training** - Specialized training to site construction teams and construction workforce include topics such as working with hazardous materials and waste, materials handling and incident response training.
- **Tool Box Talks** - Task-specific health and safety trainings are to be provided on a daily basis (on average) to the members of the construction workforce and contract staff in order to ensure their specific activities are done with health and safety procedures in mind.



# 910 Health & Safety Inspections



# 29,856 man hours

Health & Safety Training



# 64,122 man hours

Tool Box Talks

## Masdar City Heat Stress Awareness Program

In June 2012, at the peak of summer in Abu Dhabi, Masdar participated in a Heat Stress Preventive campaign supporting the government's efforts to educate construction workers about heat stress and how to avoid it. Masdar has issued safety bulletins to project contractors that outline mandatory requirements, such as providing rehydration fluids and supplements to workers before they arrive on site. These reduce their risk of heat stroke and heat exhaustion. The safety bulletins also communicate the standards that contractors should implement to prevent heat stress on work sites. Educational heat stress posters have been distributed in different languages in coordination with Health Authority – Abu Dhabi (HAAD), and the contractors

The heat stress program was initiated as part of a broader campaign that Masdar's Health and Safety department launched this year. The program included periodic awareness campaigns on other construction site hazards, such as working safely at height, working with electrical connections and working at excavations.



The background is a solid teal color. Three jagged, upward-trending arrows are overlaid on the background, starting from the bottom left and moving towards the top right. The arrows are a lighter shade of teal and have a stepped, zig-zag appearance. The text 'Economic Development' is centered in the upper half of the image.

# Economic Development

# Our Impact on Economic Development

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The ongoing efforts of Masdar are to sustain a long-term, economically viable business and to advance the local economies around the world where Masdar operates.

The progress of Masdar is underlined in this section of the report, which bears witness to the key role Masdar plays in generating new opportunities and encourage the advancement of Abu Dhabi's economic diversification, in line with the Abu Dhabi 2030 vision.

Masdar has identified the activities that have a positive impact on Abu Dhabi's economic growth and diversification, as well as a selection of financial details which are vital to establish a more detailed overview of the performance in a financial sense. The following areas have been addressed in this section to highlight the economic impacts:

- **Adding to the global renewable energy mix**
- **Supporting and strengthening local businesses**
- **Supporting and strengthening the local workforce**
- **Providing opportunities for new businesses in Abu Dhabi**
- **Stimulating and promoting new markets**
- **Establishing strategic partnerships**

## Masdar's Financials at a glance

For any sustainability report, it is essential to provide details of the economic status. However as state-owned enterprise subsidiary, Masdar is limited in the level of financial information that it can publicly disclose. Mubadala (Masdar's parent company) releases financial reports including financial details of Masdar's activities. To provide an understanding of the scale of Masdar's operations, the following information has been made available.



**CAPEX During Reporting Period**  
**AED 1,914m**

Up 4% on CAPEX during Q4'10 -Q3'11



**Investment Value**  
**AED 366m**

Down 7% on Sept 2011



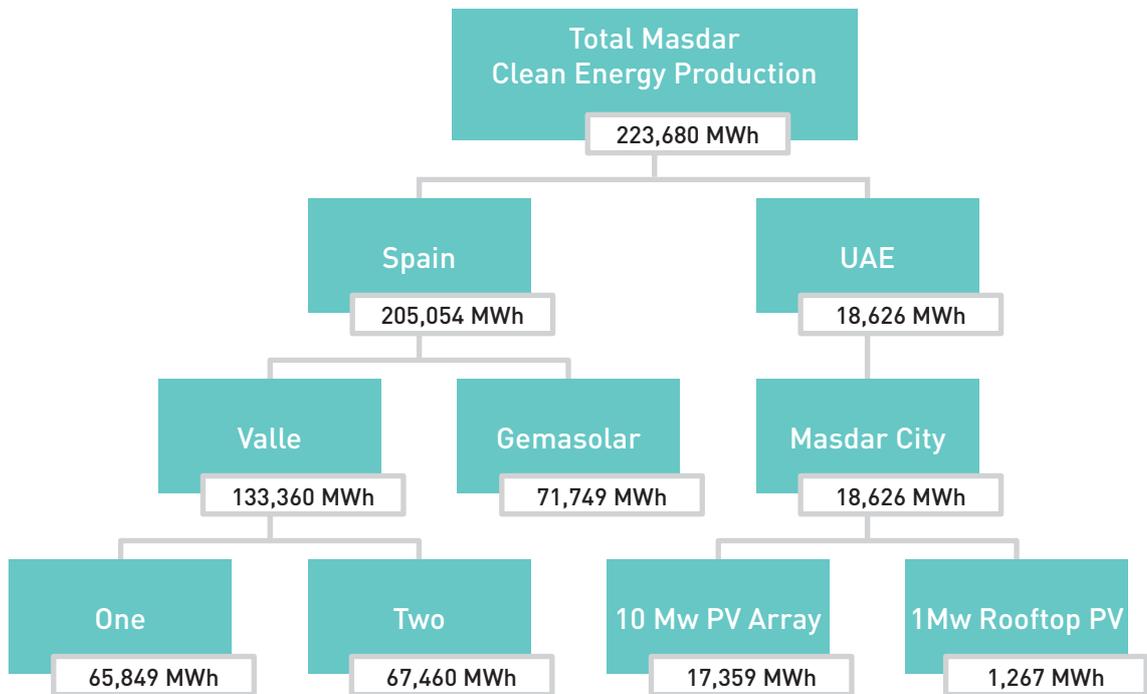
**Equity AED 7,131m**

Up 11% on Sept 2011

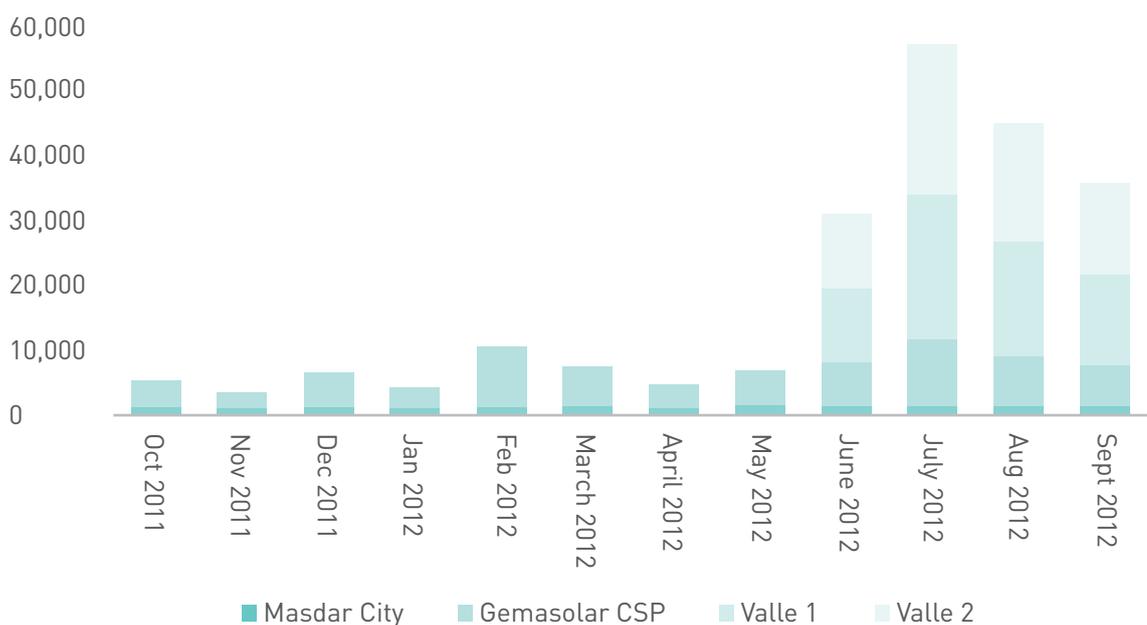
## Adding to the global renewable energy mix

A main aspect to Masdar's operations is spearheading the transition from traditional forms of power to renewable energy. Masdar has continued to develop a portfolio of investments that adjust the energy mix in their respective countries. Masdar is answering the call from the Abu Dhabi Leadership to provide non-conventional energy supplies to benefit an ever growing economy.

Below is the total energy production in Masdar's portfolio during the reporting year:



Monthly Power generation during reporting period



## Support and strengthening the local workforce

In line with the UAE governments drive to promote the employment of its citizens to enhance their opportunities (Emiratization). Masdar has maintained its commitment to enhancing the competency levels of the local workforce by providing opportunities for growth in a series of attractive business functions. To support the Emiratization strategy at Masdar, the company has initiated a career development program for all UAE nationals. The career development program is conducted in partnership between the UAE national, direct line manager, business unit director and Human Resources (HR) department. Career development programs at Masdar have a specific structure which is based on competency requirements for the employee's current or target job.



# 37%\* UAE Nationals employed at Masdar

(Male 41% Female 59%) Sept 2012

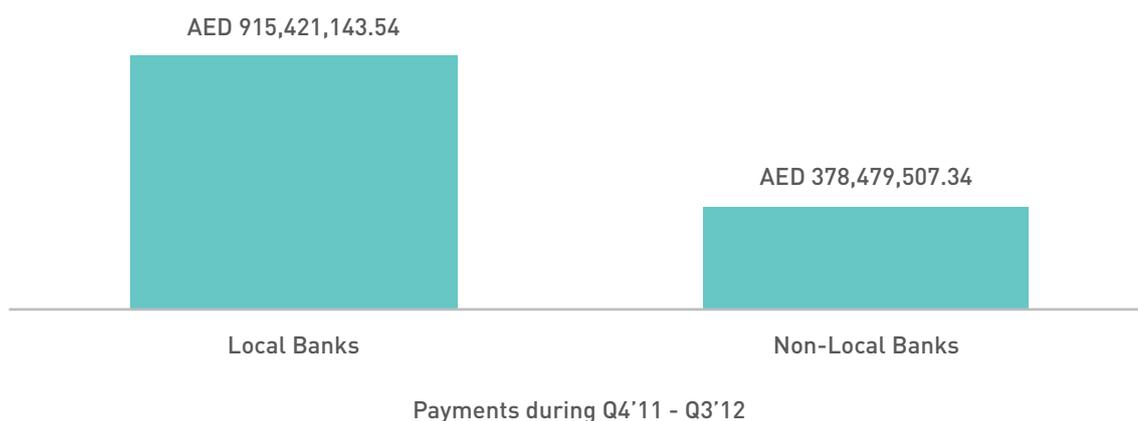


\*Masdar remains committed to working towards its 40% Emiratization target

## Support and strengthening local businesses

Masdar recognizes that the support of local companies will have a positive effect on the economic diversification that is outlined in the Abu Dhabi 2030 vision. In line with the objectives set out as part of economic development, Masdar has in place a series of policies and procedures that encourage the usage of locally based suppliers of both services and products. In supporting local companies, Masdar is also enhancing the employment opportunities within the UAE and emphasizing the capabilities of these companies regionally and globally.

Masdar is able to show the total spending on local suppliers of products and services. The calculation is based on the funds transferred into local banks against those funds transferred into international banks.



During the reporting period, over 70 percent of all payments were made to local banks, highlighting the commitment Masdar has made to support and stimulate local businesses and the local economy within Abu Dhabi and the UAE.

## Providing opportunities for new businesses in Abu Dhabi

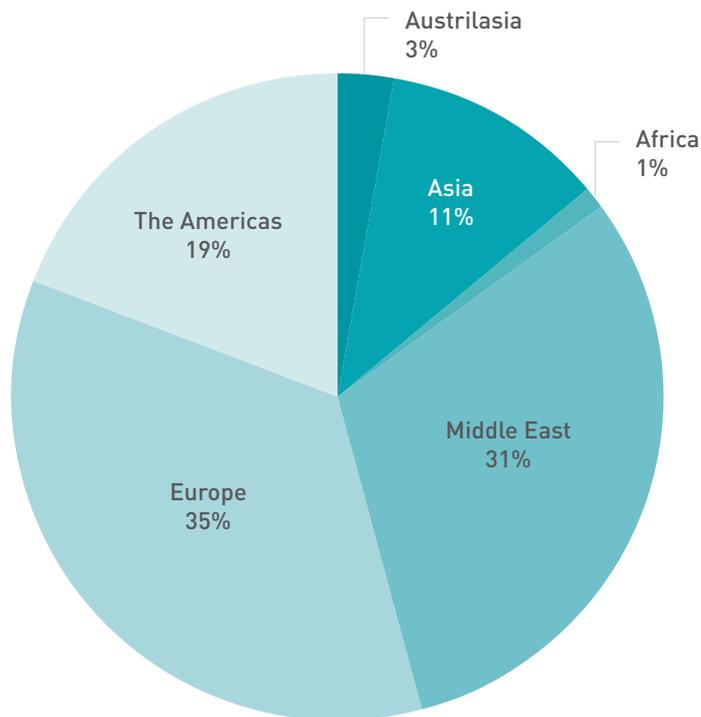
Masdar City operates as a 'Special Economic Zone', with a focus on clean technology and renewable energy. The City demonstrates the advantages of industry clustering by offering the offices as well as the research and testing facilities that companies need to operate in this high-tech knowledge-intensive sector. The benefits of setting up in Masdar City freezone for international companies are:

- **100% foreign ownership with no restrictions on capital movements, profits or quotas**
- **Strong IP protection framework**
- **0% import tariffs**
- **0 % corporate or individual tax**
- **0 currency restrictions**

At the end of the reporting period, a total of 77 companies have taken the opportunity to register with Masdar City freezone. The companies within the freezone come from a wide range of countries and are licensed under various legal frameworks. In keeping with the vision of making Abu Dhabi and Masdar City a hub for clean technology and sustainable development, Masdar has attracted companies from all parts of the world to establish themselves in Masdar City Freezone and take advantage of the unique opportunities of setting up in the Middle East. Additionally, these companies benefit from opportunities with Masdar, Masdar's strategic partners and other freezone companies

The following tables and charts show the type and origin of the 77 companies within Masdar city freezone.

Company Legal Framework	Total company type breakdown
Limited Liability Company (LLC)	47
Branch (Foreign Company)	20
Branch (UAE Company)	1
Branch (Retail)	9



## Masdar City's One-Stop Shop

The 'One-Stop Shop' provides a single point of contact for companies interested in setting up business operations in Masdar City. It acts as their interface with various Abu Dhabi government authorities and various service providers. Every aspect of licensing and operating from Masdar has been refined and reengineered where necessary, to ensure organizations operating in the city can focus all their resources and efforts on their core activities.

With one central location, the 'One-Stop Shop' handles services associated with:

- Leasing of commercial space
- Incorporation of new business entities
- Issuance and Renewal of Commercial License
- Government Relations Services (Immigration, Empost, Customs, Department of Economic Development)
- Fit-out and Facilities Management Services



## 192 Visas processed through Masdar's One-stop shop

### 'One-Stop Shop' Testimonials

*"It took us less than two weeks to move in. With the One-Stop Shop services, setting up in Masdar City's cleantech cluster couldn't be any easier."*

**Khaled Mohammed Ibrahim Al Midfa, Chairman & CEO, Gulf Group Limited.**

*"Moving to Masdar City was one of the best business decisions we took in 2010. With the One-Stop Shop Setting up was quick and efficient."*

**Rudolph Waels, Managing Partner, Armalia Partners.**

*"With the One-Stop Shop, every aspect of setting up in Masdar City's cleantech cluster was extremely easy."*

**Fredrik Bodin, Swedish Trade Council.**

*"Masdar City does not only help save the environment, but also our time and energy. Setting up our business here was hassle-free."*

**Pedro Mugarra, Managing Director, SENER Limited.**

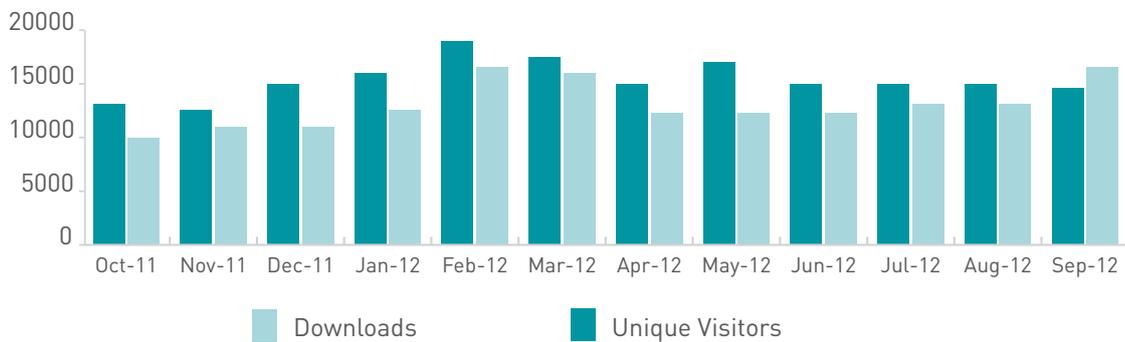
## Stimulating and promoting new markets



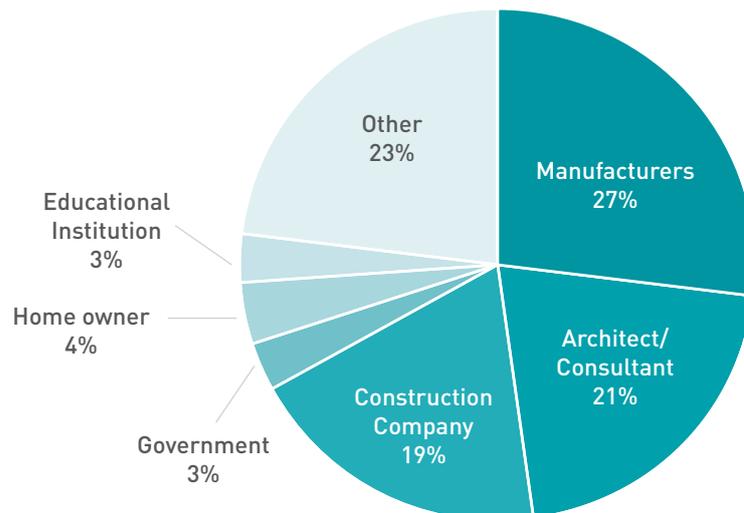
**THE  
FUTURE  
BUILD™**  
AN INITIATIVE OF Masdar

The Future Build has been developed by Masdar City following rigorous research into the availability of sustainable materials in the UAE for use in Masdar City. It is the first resource of its kind to originate in the Arab world, The Future Build provides the building community with a range of online and offline tools and services to help them achieve their green building objectives - in an efficient, cost-effective manner.

The web based portal hosts a database of independently assessed green building products and materials, as well as updated news, new products, articles and features relevant to the field. It also includes tools such as xD Sustainability Manager to manage sustainable building certification such as the Estidama Pearl Rating System and LEED. One way of assessing the impact of The Future Build is to analyze the traffic on the website and the quantity of downloaded resources, such as brochures and specifications of products. Another way is hearing from subscribers on how their business has been affected by The Future Build portal.



The Future Build has the ability to facilitate a Request for Information (RFI) service between potential customers and registered suppliers and manufacturers. Within the reporting period, it was established that the users of The Future Build database come from various business types and that the majority of users are architects and construction companies. They utilize the database for suitable materials to meet the ever-increasing green criteria in the construction industry.



*In June 2012, Masdar's The Future Build was awarded 'Best Contribution to the Reputation of Procurement Profession' at the CIPS MENA Supply Management Awards 2012 in Doha, Qatar.*

## The Future Build Testimonials

The assessment of data based on traffic and type of visitors to the website allows for an advanced understanding of the impact of The Future Build. However a true reflection can be determined from customer feedback and testimonials regarding the impact of The Future Build as a platform to promote an organization's green products. The following testimonials from reputable companies outline the benefits of the companies subscribing to The Future Build.

*"Our listing with the Future Build Portal has proven to be a definite benefit for raising awareness of both my company, Green Building Solutions International (GBSI), as well as how building envelope issues impact sustainability and the reduction of energy waste. The organization of the Portal makes it simple for potential customers to find my services and see the ways GBSI can help meeting the 'green' code requirements and improve their bottom line. In addition, as an Estidama PQP and LEED AP I already see the time and money saving benefits of the new XD Sustainability Manager tracking tool."*

**William Whistler, Managing Director / LEED AP, Estidama PQP, Green Building Solutions International**

*"The Future Build portal is a dream come true for us, just as is the Masdar initiative. Having a platform from which we can market our green products to a global audience provides an opportunity to increase sales and carry out further research and development in this growing market. Future Build benefits everyone designing and constructing green buildings that are safe to live in, affordable to operate, and less damaging to local, regional, and global environments. Masdar's leadership in sustainable supply chain is transforming the supply market. Green products are not only the right thing to use, they are good for health, save money, and good for the environment. We are delighted to be a founding member of The Future Build and to have supplied green extrusions to Masdar City."*

**Modar Al Mekdad, General Manager, Gulf Extrusions**

*"The Mapei group is completely committed to the development and use of green and sustainable products for the construction and building industries worldwide. "The Future Build" portal is an important step towards the adoption of such products in this region and we believe will act as a useful reference point for contractors, engineers, architects and specifiers generally, to make the most appropriate material selection. Mapei recognizes the efforts of Masdar in this regard, and we are delighted that our products have been evaluated and selected as part of this initiative."*

**Laith Haboub, Business Development Director, Mapei UAE**

*"We see 'The Future Build' as a useful tool that will not only help professionals source the green products available in the region, but also help to educate architects, consultants and contractors to select the most suitable products for their project. This portal will help us to promote sustainable products, which when implemented properly in a project, are what makes it possible to achieve Estidama credit points. I sincerely appreciate the efforts Masdar has made in evaluating our products and making them available to the construction community through 'The Future Build' portal."*

**Sverre Knudsen, General Manager, Jotun Abu Dhabi L.L.C**



Dr. Steven Chu,  
12th United State Secretary of Energy visits Masdar City

## Strategic Partnerships

Masdar engages in strategic partnerships to accelerate technology development and economic returns. The partners will provide technology, competencies, and global scale-up opportunities for new developments. These provide accelerated returns to the Masdar investment and a significant injection of knowledge for local human development.

Masdar has also attracted significant foreign investment into Abu Dhabi via strategic partnerships involving Masdar Capital limited partnerships, research funding and commercial technology development.

The engagement of global Fortune 500 companies in direct co-development of new business domains also provides the basis for economic diversification. At the same time, the results of new developments in energy efficiency and renewable energy production also provide direct benefits to the Abu Dhabi economy, which depends on energy-intensive production of potable water and air-conditioning.



## SIEMENS

- **SIEMENS** regional headquarters relocated to the City (2.0000 employees)
- Investment in USD 20 Mn in the development and application of new technologies
- Cooperation to test and develop new technologies such as "smart grids / buildings"
- Sharing of intellectual property rights



# Our Products & Services

# Our Products and Services

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For Masdar, our largest impression is the impact of our products and services. These impacts relate to how that specific products/services are developed and brought to market. Masdar, by the nature of its business, sell products and services which are directly linked to a broader sustainable agenda. Masdar's challenge is to ensure that these products and services are developed and brought to market. The products and services section of this report serves to offer an overview and update on the progress of Masdar's portfolio.

- **Advancing a Knowledge-Based Economy in the UAE**
- **Investing in Future Technologies**
- **Low Carbon Energy Projects**
- **Sustainable Urban Development**
- **Engaging and Incentivizing the Global Sustainability Agenda**

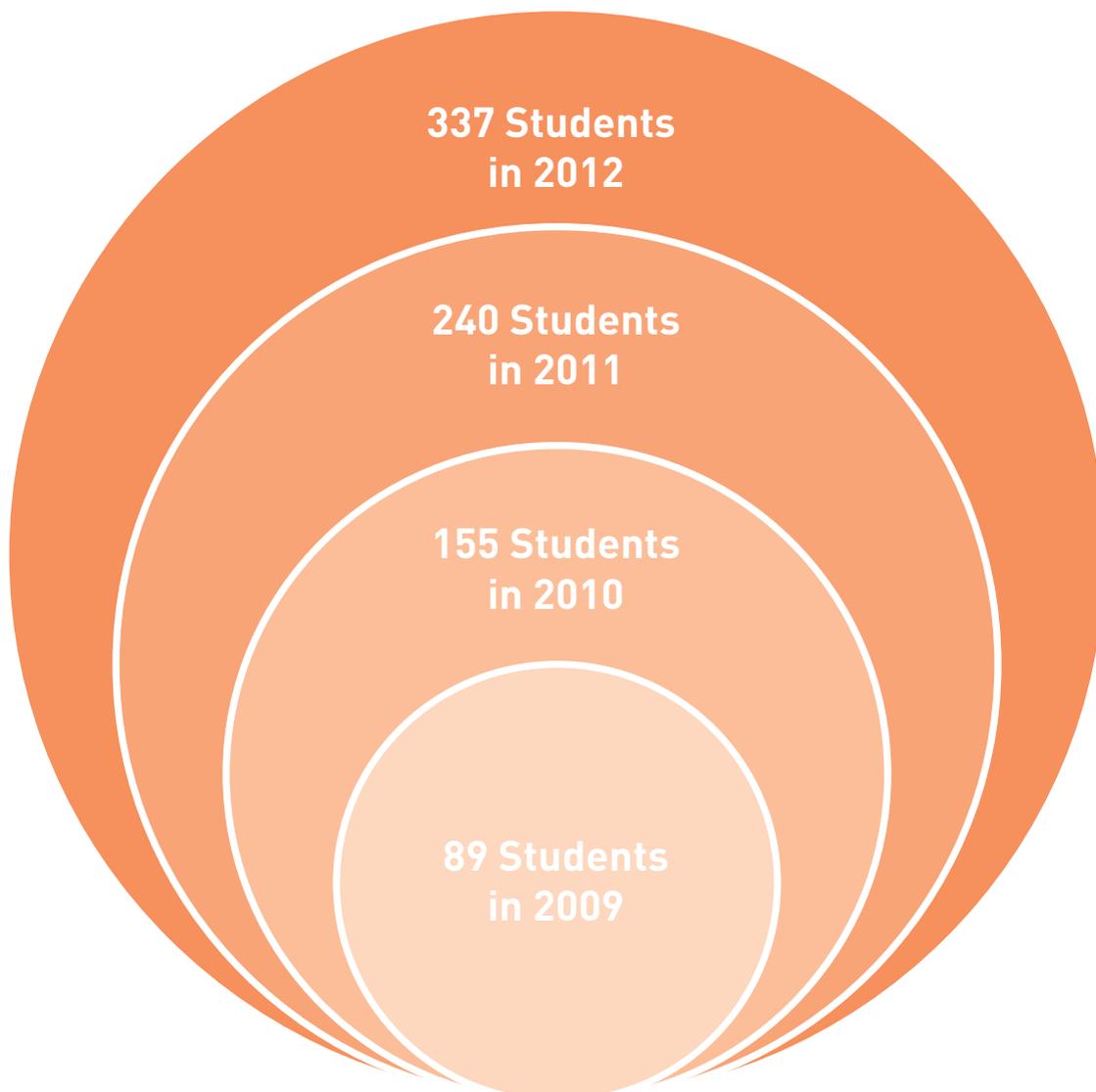


## Advancing a Knowledge-Based Economy in the UAE

The Masdar Institute of Science and Technology is an independent, research-driven graduate-level university developed with the on-going support and cooperation of the Massachusetts Institute of Technology (MIT). It is focused on the science and engineering of advanced alternative energy, environmental technologies and sustainability. The graduate programs integrate education, research and scholarly activities to prepare graduate students to be innovators, creative scientists, researchers and critical thinkers in the areas of technology development, systems integration and policy. Masdar Institute partners with industry and government to foster a diversified, knowledge-based economy in Abu Dhabi and the UAE.

### Masdar Institute - Quick Facts

- Eight Master's programs
- Aged between 20 and 37 years
- 39 different nationalities
- 42% UAE Nationals
- 33% female, 67% male
- To date, 127 graduating students
- Student to faculty ratio = 4.6:1



## Investing in Future Technologies

To support the development of new technologies and projects, and generate positive returns for Abu Dhabi, Masdar Capital is investing in the commercialization of tomorrow's most promising technologies through its two clean tech funds totalling US\$540 million.

Through these funds, Masdar Capital also seeks to demonstrate, commercializes, and promote renewable technologies in the UAE, and to identify synergies between its investments and other Masdar activities, as well as the long-term energy and development program of the UAE. Masdar Capital has been an active investor in the clean tech marketplace for five years, and will continue to raise new funds to take advantage of profitable sectors while growing its assets under management.

### Masdar Clean Tech Fund - Quick Facts

- Launched in 2006
- Co-managed by Masdar Capital, Consensus Business Group and Credit Suisse, with LP participation from Siemens AG
- Investment areas: waste treatment, biofuels, clean-water technologies



**\$250m Fully invested  
Venture Capital fund**

### DB Masdar Clean Tech Fund - Quick Facts

- Launched in January 2010
- Co-managed by Masdar Capital and Deutsche Bank Climate Change Advisors (DBCCA), the DB Masdar
- Investment areas: clean energy, environmental resources, energy and material efficiency



**\$290m Secured  
financial commitments**

Notable portfolio companies include:

**eCullet** (Palo Alto, CA) uses an advanced processing technology to deliver quality recycled glass. The company is helping promote a cleaner and safer environment.

**EnerTech Environmental, Inc.** (Atlanta, GA) addresses the problems of traditional waste management methods and simultaneously creates renewable energy. EnerTech's patented SlurryCarb™ technology cleanly and economically converts biosolids and other high moisture wastes into a high-grade, renewable fuel, with significant cost savings.

**FRX Polymers Inc.** (Chelmsford, MA) is commercializing a novel family of non-halogen, transparent, high melt flowing, fire resistant plastics.

## Low Carbon Energy Projects

To diversify Abu Dhabi's energy mix and expand the emirate's range of commercial energy expertise, Masdar Clean Energy invests in the development of large-scale clean energy projects, ranging from utility-scale wind and solar to energy efficiency and carbon capture and storage (CCS). Masdar Clean Energy is involved with pioneering projects around the world and across the technological landscape.

### Concentrated Solar Power Generation

A joint venture between Masdar and the Spanish engineering group SENER, Torresol was established in 2008 with the aim of becoming a world leader in the growing Concentrated Solar Power (CSP) sector.

Valle 1 & 2 consists of the conventional parabolic trough collectors. It began producing electricity in June 2012. Gemasolar is Torresol Energy's first project to use central tower technology and heliostats. The plant incorporates significant technological innovations, including the solar receiver system, and also a molten salt heat storage system that is able to reach temperatures of over 550°C. This is the first commercial plant to apply this type of technology in the world.

#### *Torresol Energy - Quick Facts*

- Three projects: Gemasolar; Valle 1; Valle 2
- Gemasolar (19.9Mw): Operational in May 2011
- Valle 1 and Valle 2 (50Mw each): Operational in June 2012

### SHAMS 1

One of Masdar's flagship projects, Shams 1 will be the largest CSP plant in the Middle East and one of the largest in the world. Shams 1 will directly contribute toward Abu Dhabi's target of achieving 7 percent renewable energy power generation capacity by the year 2020.

#### *Shams 1 - Quick Facts:*

- Land Area: 2.5 Km<sup>2</sup>
- Installed Capacity: 100 MW
- Solar field consist of 768 parabolic trough collectors
- Construction completed in 2012
- Fully commissioned and operational in Q1 2013



**219.9Mw Total CSP  
installed capacity**



**11.5% Global CSP  
installed capacity\***

\*Based on 1.9Gw installed capacity in March 2012 (IRENA CSP Cost Analysis, June 2012)

## Photovoltaic Power Generation

Masdar's 10mw Solar PV Plant @ Masdar City

The 10MW solar photovoltaic (PV) power plant was inaugurated at Masdar City in June 2009.

*10Mw Solar PV Plant - Quick Facts*

- Largest solar power plant in the region
- Land Area: 210,000m<sup>2</sup>



# 87,780 Individual PV panels installed

- 15MW PV plant in the city of Nouakchott, Mauritania
- 500 Kw grid connected PV plant in the island of Vava'u in the Kingdom of Tonga

## Photovoltaic Manufacturing Facilities – Masdar PV

The German facility is the first-ever fully Abu Dhabi owned and operated high-tech venture in the heart of Europe and is fully operational producing amorphous silicon thin film photovoltaic modules.

Masdar PV Facts And Figures:

- Latest generation of equipment from the world's leading supplier, Applied Materials.
- High-volume processing of ultra-large glass substrates are eight times larger and five times more powerful (in total watt) than that of the current market leader



# 200Mw Annual production capacity of the facility

## Offshore Wind Power Generation Projects

### London Array

A joint venture between DONG Energy, E.ON and Masdar, located in the outer Thames Estuary in the UK, the London Array will be one of the world's largest offshore wind farms. When fully operational, London Array will make a substantial contribution to the UK Government's target of providing 15.4 percent of all electricity supply from renewable sources by 2015; based on the current schedule the London Array project would represent nearly 7 percent of this target

#### *London Array – Quick Facts*

- Site Area: 245km<sup>2</sup>
- 175 Siemens 3.6MW turbines installed
- Installed capacity (Phase 1): 630Mw
- Over 400km of cables (array and export)
- First power generated and sent to UK grid in October 2012



**400,000 homes powered  
at total capacity**

### Onshore Wind Power Generation - Seychelles

*In January 2009, Masdar signed a Memorandum of Understanding (MoU) with the Seychelles Government to investigate renewable energy opportunities on the island nation. Initial studies have indicated that wind energy is viable on the main island of Mahe.*

*The recommendation was to develop a wind power plant with 8-turbines of a capacity of 6MW that corresponds to 10-15 percent of Mahe Island's installed capacity.*

#### *Seychelles - Quick Facts*

- Installed capacity: 6MW over 2 sites
- Project start: Q1 2013
- Emissions reductions: 10,000 tCO<sub>2</sub> per annum



**3.5m liters potential  
diesel savings per annum**

### Masdar Carbon Capture and Storage (CCS) Program

Masdar has completed the front end engineering and design of the Abu Dhabi CCS Network and the first element of this Network, the Emirates Steel Industries (ESI) Carbon Capture Facility, will commence operations by 2015.

#### *Masdar Carbon Capture and Storage Quick Facts*

- One of the world's first integrated CCUS networks for capture, use and storage of CO<sub>2</sub>.
- Aims by 2017 to capture 5mil. tons per annum of CO<sub>2</sub>.
- Efficiently utilizing CO<sub>2</sub> instead of natural gas in support of oil and gas production

## Sustainable Urban Development – Masdar City

One of the world's most sustainable communities for technology, Masdar City is an emerging global hub for knowledge, business, research and development.

Located 17km from downtown Abu Dhabi, the capital of the United Arab Emirates, Masdar City positions companies located here at the heart of this global industry. A special economic zone where businesses can thrive and innovation can flourish, Masdar City is a modern Arabian urban development that, like its forerunners, is in tune with its surroundings. Masdar City follows the principles of a sustainable urban development, with careful integration of land use & built form planning, transportation and infrastructure.

The built environment of the city is defined by dense neighbourhoods and low-medium rise, high density accommodation. The city is pedestrian friendly with multiple modes of transport available in close proximity. Critical to the success of the City will be the implementation of a transportation network, and the design and installation of an infrastructure network that supplies the individual city blocks. Masdar City is a true demonstration of the concept of sustainable transportation.

### *Masdar City - Quick Facts*

- 3,800,000m<sup>2</sup> Gross Floor Area
- First completed buildings - Masdar Institute Phase 1 (GFA – 34356m<sup>2</sup>)
- 140 people/hectare = Projected residential density
- Home to Siemens Regional HQ and the International Renewable Energy Agency (IRENA)



*“Masdar City is a city that points towards the future, that will set standards, not only for the region but worldwide. Germany is very proud to be able to participate here at the forefront together with Masdar in all areas of renewable energy and waste management. You can actually say that all our sustainable technologies developed in Germany can be developed even further here”*

**German Chancellor Angela Merkel, on her visit to Masdar City**

*Masdar City received the Global Energy Efficiency Visionaries award (Africa-Middle East region) at Energy Efficiency (EE) Global Forum 2012 held in Orlando, USA.*

## Major Construction Projects



### Masdar Institute Phase 2 (MIST1b)

**GFA: 44806m<sup>2</sup>**

The second phases of the Masdar Institute will double the size of the university's campus by adding 221 residential apartments in three blocks and three laboratory buildings. Just as the Knowledge Centre is the signature structure for Masdar Institute Phase 1a, a multi-use hall will be the signature structure in Phase 1b. This sport building and performance hall will have an open-air swimming pool adjacent to, and on the same level as, one of the green finger linear parks.



### Incubator Building

**GFA: 9709m<sup>2</sup>**

Rising within the campus of the Masdar Institute of Science and Technology, the Incubator Building is Masdar City's first commercial building. Integrating retail and office space, the Incubator will house a range of businesses from start-ups and SMEs to regional offices of large multinational corporations. Companies established within the Incubator Building will benefit from Masdar City's One-Stop Shop registration and service facilities.

The four-story, Incubator Building, designed by Foster and Partners, meets the rigorous sustainability and energy-efficiency standards required at Masdar City.



## Siemens Headquarters GFA:21,720m<sup>2</sup>

Siemens new headquarters building for the Middle East region, under construction in Masdar City, has been designed to optimize its natural environment and carbon efficiency. This will allow it to offer a truly sustainable and commercially viable solution aligned with Masdar's vision for the low carbon city. The table below addresses the performance to date of the Siemens HQ building with regard to Masdar City's defined KPIs, as mentioned previously in this report.

Masdar City KPIs		Siemens Building
Criteria	Performance Target	Design Achieved
<b>ENERGY: Energy Demand Reduction</b>	50%	65%
<b>ENERGY: Provision of Renewable Energy</b>	75% of Hot Water	75% of Hot Water
<b>WATER: Water Demand Reduction</b>	30%	53% (Interior Potable Water)
<b>MATERIALS: Reduction in embodied Carbon in Materials</b>	30%	>30% (to be verified during construction)
<b>ESTIDAMA: Minimum number of Pearls to be achieved under the Pearl Building Rating System</b>	3 Pearl Rating	3 Pearl Rating and LEED Platinum
<b>ECONOMICS: Approved Construction Budget</b>	Not to be exceeded	Currently below budget

*\*The above KPIs have only been applied to the Siemens & Masdar HQ buildings due to release of KPIs into design specifications.*



## Masdar Headquarters

**Size: 31,461m<sup>2</sup>**

The Masdar and IRENA Headquarter building (HQ) echoes the agility and mission of Masdar. With a modern modular and low-carbon design, the building will respond to the varied needs of its tenants and visitors. The building's façade will act as the first line of defense against heat and will also connect the headquarters of two separate and independent institutions: Masdar and the International Renewable Energy Agency (IRENA).

The new building design relies heavily on industry lessons learned and best practices. Vertical and horizontal shading is provided according to facade orientation; vertical shading is constructed from fritted glass to preserve the building aesthetics. Meanwhile solar water heaters (Flat Plate Collector) supply 75 percent of the domestic hot water demand and 1000m<sup>2</sup> of PV panels will supply renewable electric power to the building. Masdar broke ground in 2012 and expected Completion is set for summer of 2014.

## Masdar City Pilot Projects

Masdar engineered, built and is operating small-to-medium-scale pilot plants of promising technologies to be utilized in Masdar City.

### Solar Cooling Pilot Plants

Solar Cooling involves the transformation of thermal energy (heat in the form of hot water or steam typically) coming from solar thermal collectors by so-called thermal cooling devices. These devices typically use a thermochemical process to convert the heat into cooling/dehumidification effect. The goal of the Solar Cooling Pilot Project is to test different advanced solar/efficient cooling technologies on the existing Masdar site office site in view of assessing their future contribution to Masdar City's cooling technology mix.

The solar cooling pilots currently being operated at Masdar City:

**Single Effect Absorption Chiller Pilot System** - The first solar absorption cooling system to be installed in the UAE is a 5-ton "single effect" absorption chiller cooling three offices in SAF 1. This system runs on "low temperature" hot water at about 80-90 degrees C provided by a small collector field (80m<sup>2</sup>) of flat-plate solar thermal collectors located behind SAF 1. All major components of this system (chiller, storage system, cooling tower, solar collectors, fan-coil units) were offered to Masdar free of charge by YAZAKI of Japan. It has been running for more than 3 years without break-down or need for maintenance.

**Double Effect Absorption Chiller Pilot System** - Block 6 is cooled, unlike all the other SAF office blocks, not by "split-type" A/C units but by a chilled water cooling system utilizing advanced technologies for the production and delivery of the cooling. The chilled water is produced by the Double Effect Absorption Chiller Pilot System and a 70TR (Refrigeration Tons) capacity electric chiller that is located behind the SAF1 office, next to the YAZAKI absorption system. This chiller is installed as a back-up chiller for the solar-driven double effect absorption chiller plant for periods where the solar radiation is not sufficient. The total conditioned space spans an area of about 1700 m<sup>2</sup>. The conditioned fresh air is produced by an advanced and highly efficient Air Handling Unit (AHU) installed in the courtyard area.

### Daylighting Systems

Masdar is currently testing both passive and active daylighting systems of the following types:

**Solatube Passive Daylighting System** - This advanced daylighting system was installed by SOLATUBE in March 2010 in an office room of module 6 of the SAF2 offices in Masdar City. The pilot system is harvesting daylight to save energy, reduce operating costs, reduce carbon footprint and create a more comfortable environment for the occupants of the areas that it is lighting.

**3M-Targetti Active Daylighting System** - This system was installed by M/s. TARGETTI in February 2010 in the visitors center of the SAF1 office. It is an active daylighting system using a collector with a mirror array to track the path of the sun during the day to provide maximum and constant illumination and emits the collected daylight through a continuous lighting duct over a length of 12 meter. The active daylighting system replaces six of conventional fluorescent light fixtures having a total capacity of 432W. The electrical consumption of the active daylighting system and the electrical consumption of an identical array of 6. of fluorescent lights in the same visitor center are both measured to evaluate the performance and energy savings potential of the active daylighting system.

## Facilities management at Masdar

A key driver for any organization is the satisfaction of the clients or people they service. At Masdar, how we manage the facilities and ensuring a safe and healthy place to live and work is paramount. To this affect, a series of guidelines and standards have been establish to assist in the sustainable facilities management commitments put forward by Masdar.

To ensure tenant and customer satisfaction at Masdar the agreement with the FM contractor is based on KPI's with failure to meet the KPI requirements resulting in a monthly deductible. There are a total of 42 KPIs to which are used a targets for suitable management of the facilities. The KPI categories are list below with an example requirement:

	Service Delivery	Examples of Specific Requirements	Performance standard
1	Management Service	Performance monitoring and reporting	Provide monthly performance reports no more than 5 working days after relevant contract month
2	Buildings and Asset Maintenance Management Service	Planned Preventative Maintenance (PPM) – Scheduled Monthly Tasks Completed	Target Service Level - 90% of scheduled PPM tasks completed in reporting month
3	Help Desk Service	Calls to be answered within 30 seconds or 3 rings.	No failure to answer 95% of all calls within 30 seconds and in an appropriate manner.
4	Cleaning Service	The Contractor shall perform cleaning activities within the agreed times as set out in the cleaning schedule.	No failure to clean within the times set out in the cleaning schedules.
5	Pest Control Service	Preventative pest control measures will be provided where required for compliance with statutory provisions and otherwise where deemed necessary by the Contractor. Masdar to ensure that the premises remain free of pests. This requirement applies to the infestation by pests which can be deemed as preventable.	No failure to achieve the minimum statutory requirements with regard to pest control.
6	Grounds Maintenance Management Service	All access routes remain open, sufficient and comply with Disability Discrimination requirements shall be free from obstruction and segregated from vehicular traffic.	No failure to comply with the requirement.

During the reporting year, Masdar received 3266 calls to the helpline and the below diagram highlights the response type for these issues raised within Masdar offices.

 **98.5%\*** **Calls fixed**  
in allocated time period

 **1.3%\*** **Calls not fixed**  
in allocated time period

*\*Remaining 1 call was cancelled*



Hillary Clinton, 67th United States Secretary of State visits Masdar City

نعمل من أجل توفير الطاقة لأجيال الغد  
Working to Power the Future

Masdar مصدر  
A MUBADALA COMPANY  
مصدر شركة مبيعا

Masdar مصدر  
INSTITUTE

Masdar مصدر  
A MUBADALA COMPANY

Masdar مصدر  
POWER

Masdar مصدر  
الطاقة

ZAY  
FUT  
ENERG



## Engaging and Incentivizing the Global Sustainability Agenda



### World Future Energy Summit 2012

Following its inception in 2008, the World Future Energy Summit (WFES) has fast emerged as the leading renewable energy conference and exhibition in the Middle East. Hosted by Masdar, the World Future Energy Summit provides a crucial interdisciplinary platform to facilitate practical progress in renewable energy and clean technology.

#### *WFES 2012- Quick Facts*

- Number of exhibiting companies: 623
- Number of attendees: 26,200 (excluding students - 4500)
- Official delegations: 53 (up 51% on WFES'11)
- 40,000 m<sup>2</sup> gross
- 20 national pavilions

## 137 Countries represented and 42 Products launched at WFES 2012

#### *Exhibitor's facts and feedback:*

- Number of exhibitors from the PV and energy efficiency industries has increased.
- Overall exhibitor's satisfaction grew from 61% in 2011 to 84%.
- Quality of visitors is the main reason to exhibit at WFES for 54.5% of surveyed exhibitors; only 11% exhibit based on numbers

#### *Visitor's facts and feedback:*

- Majority of visitors (56%) attend WFES to 1) learn, 2) source and 3) trade (market immaturity)
- 87% of visitors found WFES relevant in terms of new products and exhibited solutions
- Solar (PV & CSP) and energy efficiency are most important for the visitors
- 93% of surveyed visitors said they were satisfied with their overall visit to the event
- Remarkable increase in the number of visitors from the Arab world and India



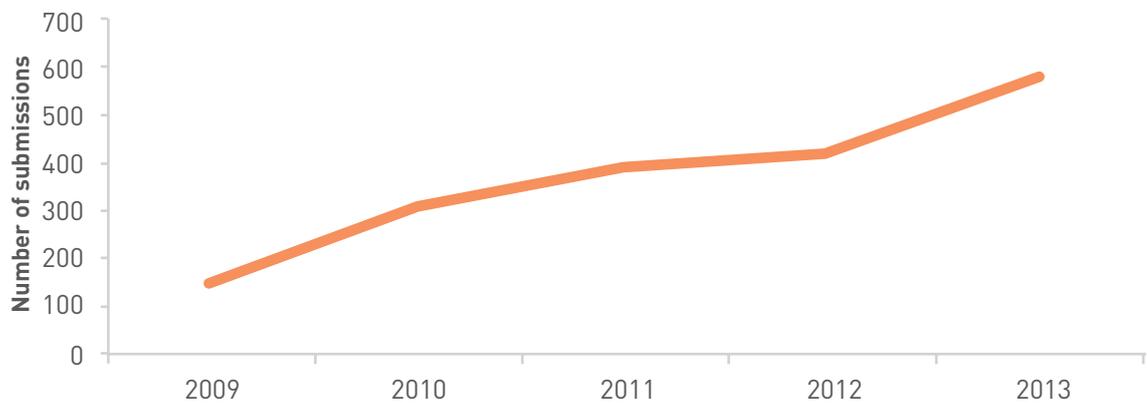
Photo by: Ryan Carter, Philip Cheung / Crown Prince Court - Abu Dhabi

## The Zayed Future Energy Prize

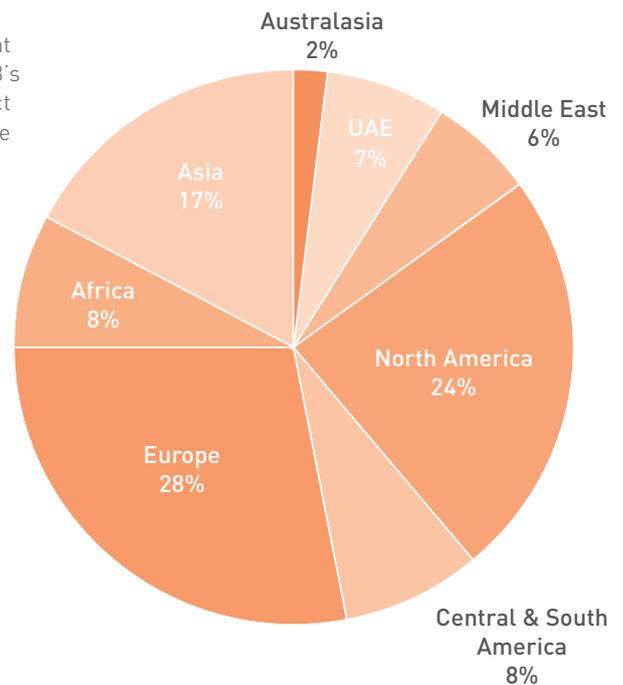
In 2012, the Zayed Future Energy Prize, which is managed by Masdar, increased its total prize fund to US\$4 million, making it the world's largest annual prize purse for future energy solutions. A breakdown of the categories is as follows:

- Large Corporation: Recognition award (no monetary value)
- Small and Medium Sized Enterprises (SME): \$1.5 million
- Non-Governmental Organization (NGO): \$1.5 million
- Lifetime Achievement Award: \$500,000 – Candidates for the Lifetime Achievement Award must be nominated by a second party to be eligible.
- Global High School Prize: \$500,000 divided amongst 5 regions with each school awarded up to US\$100,000 (Africa, Asia, Americas, Oceania, and Europe)

The assessment of the prize can be emphasized when showing the submissions trends for the various award categories. During 2012, the submissions for the 2013 awards ceremony, held during Abu Dhabi Sustainability Week, saw an increase of 36 percent on the previous year's submissions count.



The chart below shows the extent of acknowledgement of the prize by breaking down the submissions for 2013's award by origin and further signifying the global impact that prize is able to offer. This reaffirms the importance of the award and the global participation will only serve to assist in addressing the challenges and opportunities in the renewable energy and sustainable development industry.



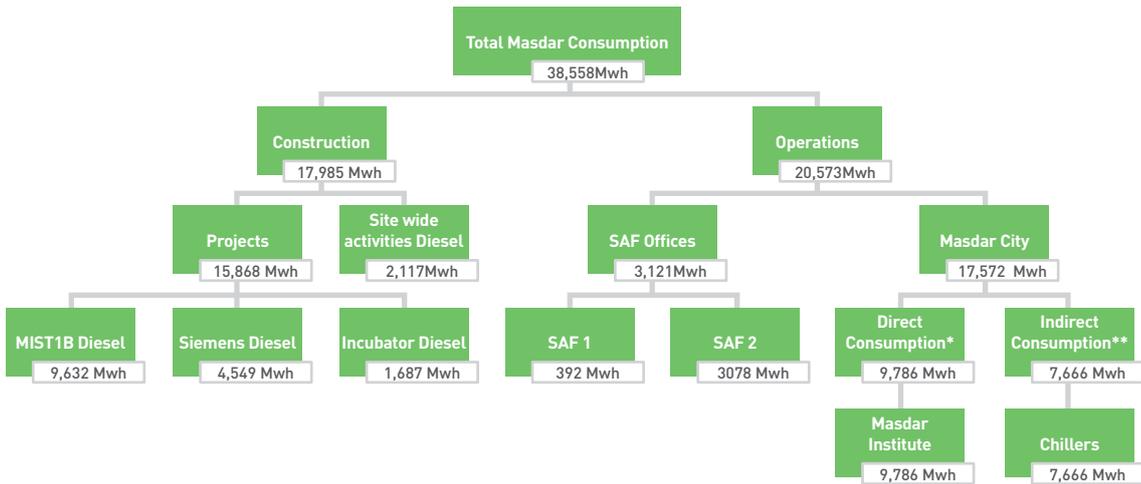
# Our Environmental Impacts





## Energy Management at Masdar

As shown in the Masdar City KPIs, energy consumption is a major aspect when assessing the performance of Masdar City buildings. A detailed breakdown of the energy consumption of Masdar operations for the reporting period is provided to showcase the impact of sustainable features implemented as part of Masdar City's sustainable design principles. Within the construction sections, the energy is generated by diesel powered generators that serve the major projects and site wide activities. The operational breakdown consists of Masdar City and the SAF offices.



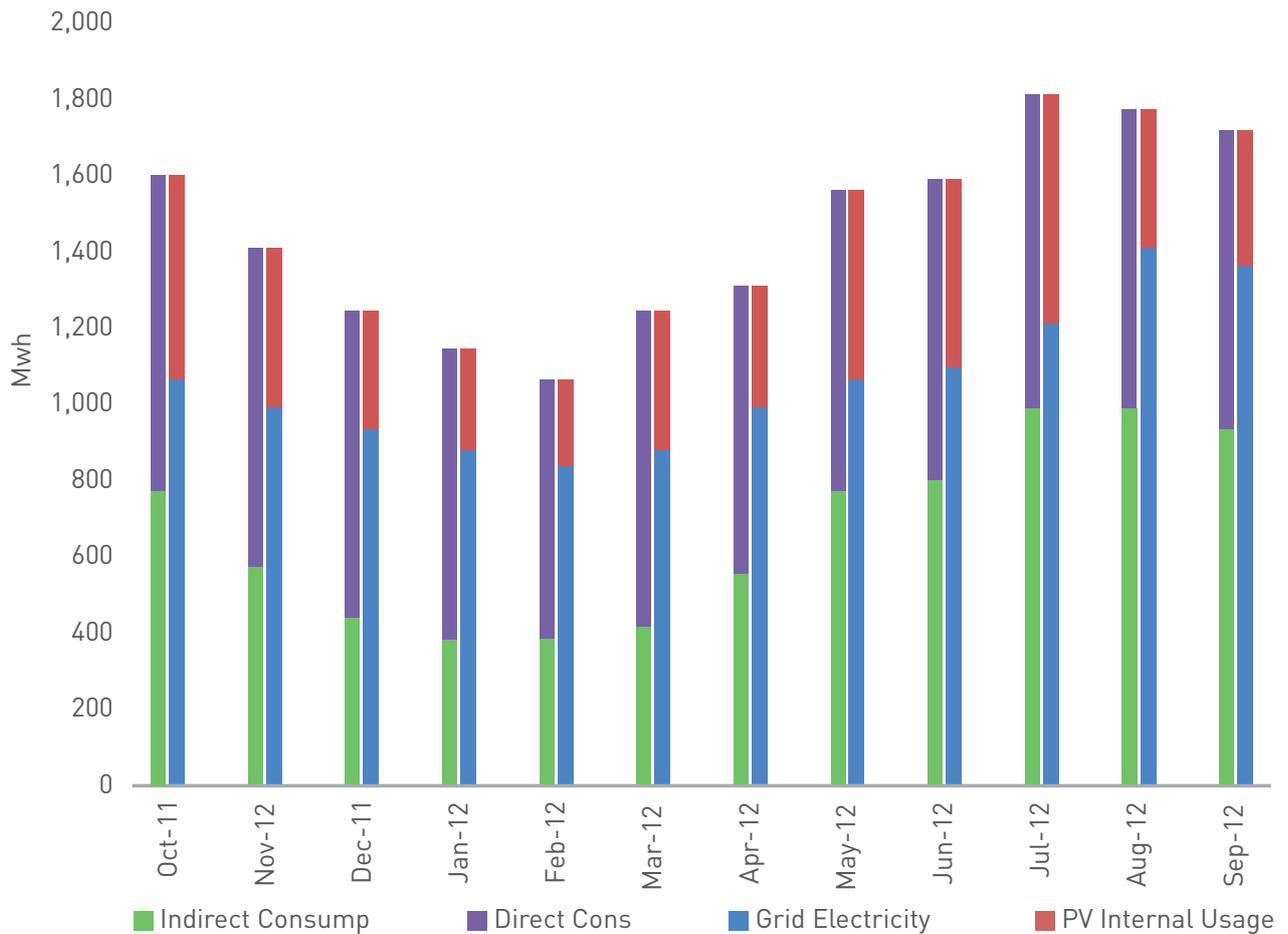
\*The implementation of Btu data monitoring was completed during the reporting period and therefore does not provide comprehensive information to be reported on. Masdar will emphasize this data inclusion in future reports.

\*\*Indirect consumption is the external electricity used for cooling the Masdar institute building.

## Masdar City Energy Balance

The installation of advance monitoring systems with the facilities in Masdar City allows for a detailed assessment of the energy balance on a monthly basis during the reporting period of Q4 2011 to Q3 2012. Using the C3 software, Masdar is able to highlight the production of renewable energy versus the electricity taken from the grid against the consumption of energy for direct and indirect usage.

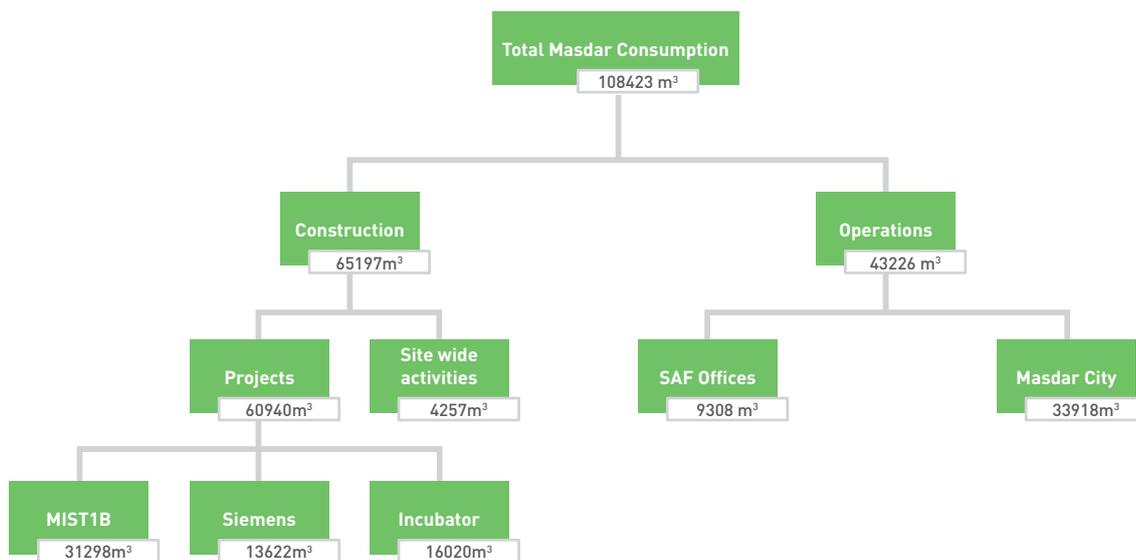
The graph below emphasizes the impacts of climatic conditions in terms of seasonal deviations and that of energy consumed by the chillers as part of the cooling system with Masdar City. It is also interesting to note the performance of the onsite renewable energy production during the course of the reporting year and the fluctuations due to available day lighting.



## Water Management at Masdar

Masdar City has been designed to maximize the efficiency of water use, utilizing a broad array of water reduction technologies such as smart water appliances into offices and homes. These include low-flushing toilets, showers and landscaping. Masdar uses waste wood from construction and recycles it in to wood chips that are then spread over the landscaped areas to reduce evaporation and therefore reduce the water needed for irrigation. This is reduced further as a majority of plants have been selected based on the low water demand found in native plants. Through technology and behavior change, Masdar works hard to maximize the water efficiency management in both operations and construction activities.

All water used for construction is delivered to projects via water tanker trucks whilst all water used in Masdar operations is obtained from Abu Dhabi Distribution Company (ADDC) system. The total consumption levels of water during the reporting period have been collected and shown in the following section.

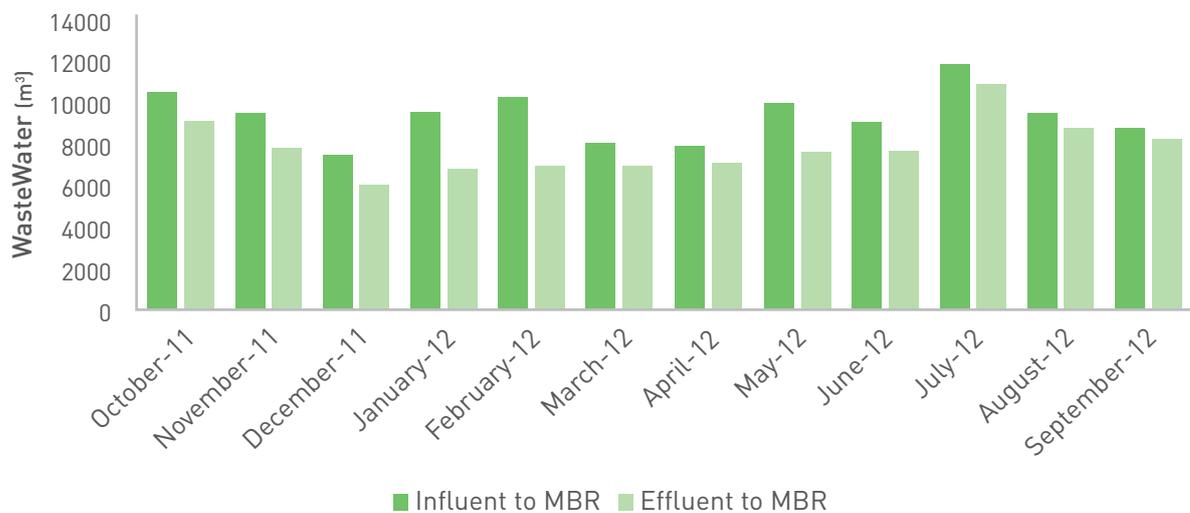


## Wastewater Recycling at Masdar

The Masdar MBR (Membrane BioReactor) Plant is a sewage treatment plant that began operations in March 2010 and was installed in Masdar City in order to treat a sewage water volume of up to 1,500m<sup>3</sup>/day. The products of this plant are: treated water, which is reused for irrigation, and bio solids. The main components of the plant are: fine screens, anoxic and aerobic tanks, and membrane modules. There are three GE (General Electric) Zenon membrane modules, each with a capacity of 500m<sup>3</sup>/day.

Currently there are three sources of wastewater for the MBR Plant:

- Masdar Institute and North Car Park
- SAF offices
- Tanker trucks (wastewater from construction on site)



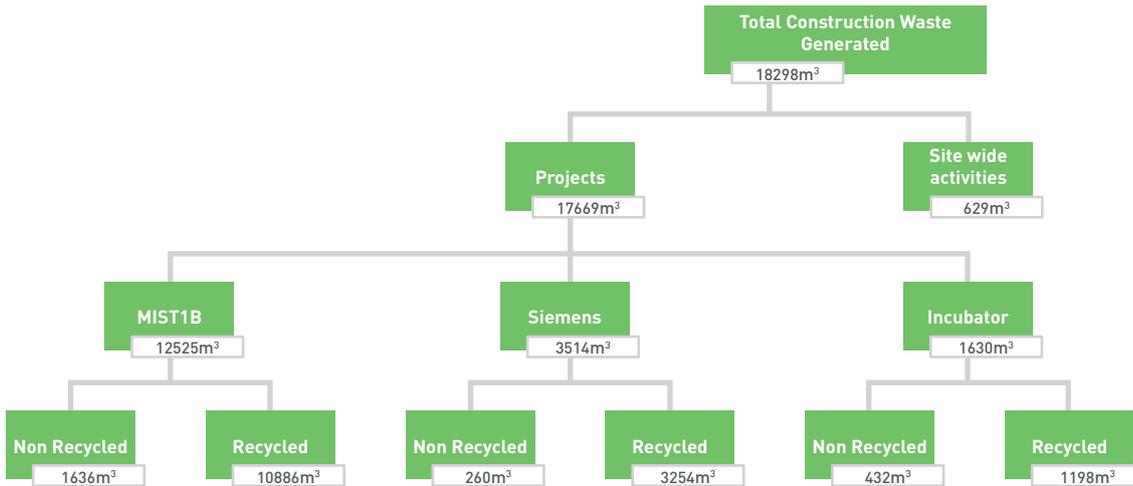
<b>Total during reporting period</b>	111,311m <sup>3</sup>	93,133m <sup>3</sup>
<b>Inc. -3% accuracy factor</b>	107,971m <sup>3</sup>	N/A

The differences between the total water consumption and total influent to the MBR plant can be attributed to a -3 percent accuracy factor when estimating water tanker truck volumes extracted from Masdar construction project sites.

All of the wastewater generated on site is treated on site, including that generated by construction works at Masdar. No wastewater tanker trucks are permitted to leave the premises until they have discharged at the MBR Plant. Additionally, all recycled water produced by the Plant is diverted to a large on-site water tank before being reused within Masdar for irrigation purposes. This offsets the potable or irrigation water that would have had to be purchased. In summary, 100 percent of the wastewater generated within Masdar is treated at the Masdar City MBR Plant, and 100 percent of the treated water produced, is used in Masdar City.

## Construction Waste Management at Masdar City

Masdar City is working to minimize waste during the construction process by seeking to reuse and recycle all waste steel, concrete and wood. In order to achieve this, nearly all Masdar City construction waste is brought by contractors to the onsite Material Recycling Centre (MRC), which is then separately stored. Wood is stockpiled for reuse in building the city or processing in a wood chipper to benefit the landscaped areas. Steel, other metals and plastics are collected and sent offsite for recycling. Concrete waste is ground down using a crusher for reuse in construction. This material is particularly handy as infill, given the loose soil conditions at Masdar City. In addition, excavated sand is being stockpiled (rather than trucked away as is common on UAE construction sites) for reuse as general backfill. The below data highlights a breakdown of the construction waste accumulated over the reporting period, and how much has been recycled per project.



## 86.8%\* Construction waste diverted from Landfill

*\*This is a conservative figure as project non recycled waste includes food waste generated by the construction workforce, which is not categorized as a construction waste. Masdar is developing a mechanism to segregate food waste from general waste to allow for a more accurate recycled percentage.*

## Hazardous Waste Management at Masdar

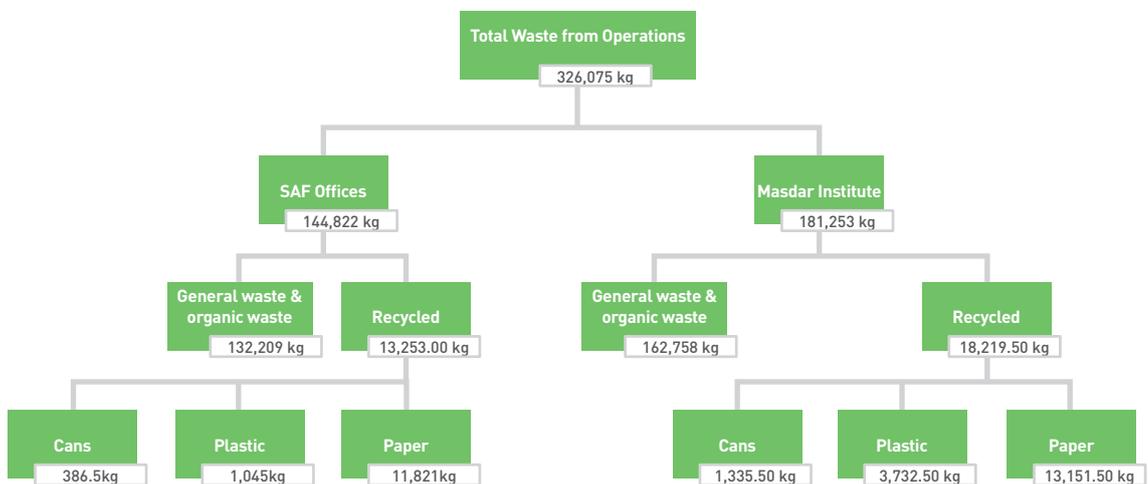
In compliance with the requirements of Federal Law 21 of 2005, all hazardous waste (mainly used batteries, chemical waste, used oil) arising from construction and operational activities within Masdar City are collected, transferred and disposed by a licensed Service Provider (approved by the Abu Dhabi Centre for Waste Management). All licenses, receipts and records are kept at the premises as provided by the services providers and are subject to regular auditing.

		2011			2012								
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Operational Hazardous waste (Oil & Grease)	kg	No data			200	-	200	-	-	100	-	300	-
Operational hazardous waste (Medical waste)	kg	No data			-	1	1	1.5	1.5	1	1	1	2
Construction Hazardous waste	m³	No Data			18	20	2	0.01	15.25	20.3	15.8	38	0.3

## Operational Waste Management at Masdar

Within Masdar SAF office, all individual employee waste bins have been removed and replaced by conveniently placed recycling bins. These encourage the segregation of waste materials at source. Masdar has conducted a series of waste audits on the SAF offices and has found that the majority of waste by weight is that of food waste from the onsite cafeteria. During the end of September 2012, Masdar introduced a transportable composting system and began trials to assess the effectiveness of the system in the UAE's climatic conditions. During a three-week period, Masdar managed to remove nearly one ton of food waste from the normal general waste stream which, once it is broken down, can be used as a replacement for purchased compost to be used in the landscaped areas in Masdar City. The composting system will be continuously tested and documented as a potential temporary solution to dealing with Masdar's generated food waste until a permanent solution that caters for Masdar City is finalized.

Within Masdar City, the latest technologies have been deployed and installed to ensure that minimum amount of waste goes to the landfill. At the first phase of the Masdar Institute, the buildings have been designed to maximize segregation at source with the development of a three waste chute design for dry, wet and non-recyclables. Along with the design elements, Masdar facilities management teams work closely with the tenants and occupants to ensure a comprehensive understanding of how to use the building. As part of the orientation for new students at the Masdar Institute, they are encouraged to attend a waste management workshop that shows them how they should dispose of each type of waste.



**9.7% Operational waste diverted from Landfill**

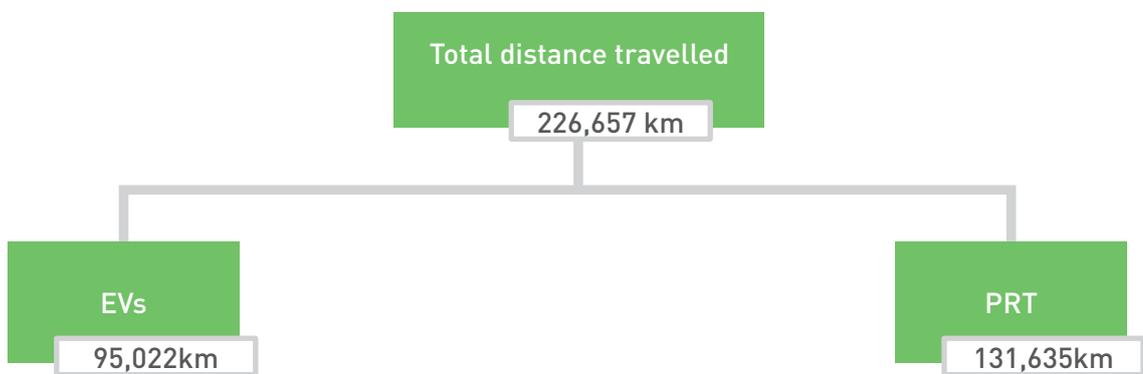


## Sustainable Transportation Systems at Masdar

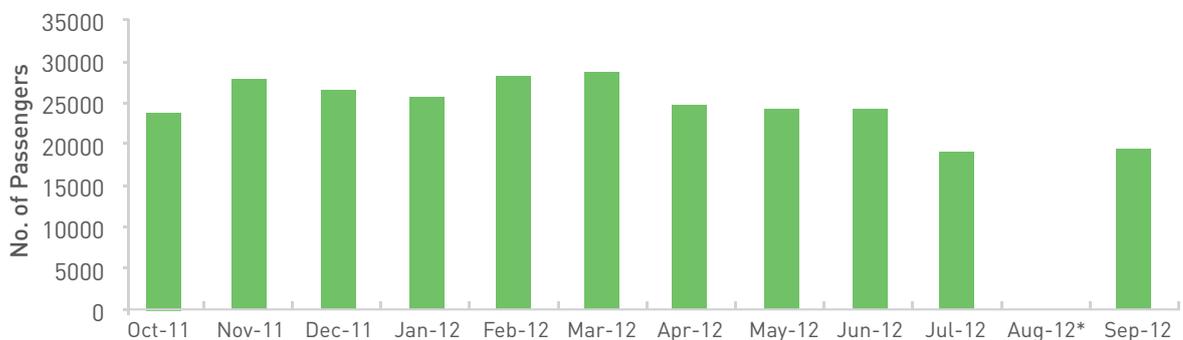
Masdar has two alternative transportation systems in currently in place at Masdar City, these are:

**The Personal Rapid Transit System (PRT)** – The driverless vehicles are controlled by an advanced navigation system; they use magnets embedded in the corridor to know their position and onboard sensors to detect any obstacles in their path; a wireless connection keeps them linked to the central computer, which guides them on their journey and ensures smooth operation among all vehicles.

**Mitsubishi Electric Vehicles (EV)** - Initiated in January 2011, the pilot uses a fleet of Mitsubishi Motor i-MiEV new generation electric vehicles. The i-MiEV's are powered by a 16kwh lithium-ion battery, have a top speed of 130kph and can be charged from empty to 80 percent in 30 minutes using the rapid charging station in Masdar SAF Offices. This pilot project also looks at testing and validating the performance of electric vehicles as well as various charging solutions, given the region's climate and patterns of vehicle usage. As well as in Masdar City, the i-MiEV takes passengers to various locations in Abu Dhabi such as the Al Mamoura building and Abu Dhabi National Exhibition Centre (ADNEC).



Masdar has been tracking the total number of passengers to use the PRT since it was activated and it is calculated that the PRT will have its 500,000<sup>th</sup> passenger in the early part of 2013 which further emphasizes the usage of this piloting technology.



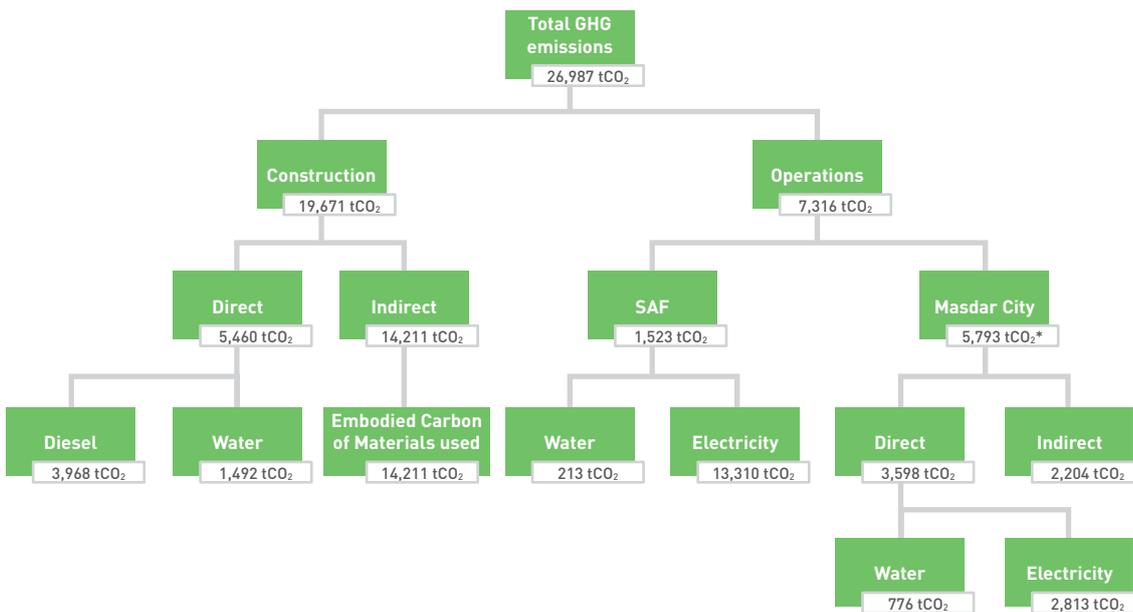
*\*PRT operations shut down for PRT track remedial & MI power works*

**Abu Dhabi Bus Service:** Masdar has worked with the Abu Dhabi Department of Transportation to include Masdar City into the Abu Dhabi City Bus network. The bus service is available every 30 minutes between 8.00am and 9.00pm and is utilized by staff, students and visitors to Masdar.

## Masdar GHG Emissions Calculations

From the beginning Masdar and Masdar City in particular have pay close attention to the greenhouse gas (GHG) emissions from both construction and the operations of Masdar City. Much work have be undertaken to ensure the correct monitoring and minimization of GHG emissions. The buildings are designed to incorporate maximum energy and water efficiency and the materials selected are analyzed to track the embodied carbon emissions. Masdar will continue to monitor the GHG emissions related to the organizational activities and will assess the methods of reduction and offsetting the emissions as options to lessen the impact.

The below hierarchy shows the total GHG emissions and the focus areas for the majority of the direct and indirect impacts. It is worth mentioning that the construction emission are a one-off event, and will fluctuate during Masdar's future reports. The on-going operational impact will also increase as new projects come on line.



## Methodology

The GHG calculations have followed the World Resources Institute (WRI) proposed methodology however instead of using the IPCC emission factors for purchased electricity; Masdar has used the emission factors put forward by Masdar Institute members (Dr. Scott Kennedy, Dr. Sgouris Sgouridis, Pei-Yun Lin, Arslan Khalid). The emission factors used are listed below for grid energy consumption and potable water. The embodied carbon of materials used in the construction activities is addressed in more detail in the supply chain section of this report.

- Electricity 0.42 tCO<sub>2</sub>/MWh
- Water (potable) 0.02288 tCO<sub>2</sub>/m<sup>3</sup>
- Diesel 2.67 tCO<sub>2</sub>/m<sup>3</sup> \*\*
- Embodied Carbon for materials See Supply Chain section

\*As per the WRI reporting requirements, the above chart only includes the GHG emissions for purchased electricity (11946Mwh) and does not include the total consumed electricity (17452Mwh) due to the remaining (5506Mwh) electricity being supplied from internal PV usage. It is important to point out that the internal PV usage has resulted in a reduction of 2,313 tCO<sub>2</sub> against only consuming electricity from the grid.

\*\*[http://www.carbontrust.com/media/18223/ctl153\\_conversion\\_factors.pdf](http://www.carbontrust.com/media/18223/ctl153_conversion_factors.pdf)

## Biodiversity in Masdar City

The Masdar City site is primarily a brown-field development site that was once a municipality tree nursery site that had been created by the importation of sweet sand to infill an area that was formerly "sabkha" (salt flat). As part of Masdar's environmental impact assessment conducted in 2009, the habitats observed on site were assessed in terms of their quality and potential value to species, particularly those species which are rare or threatened in the UAE. Specific species identified on site were reviewed to determine their rarity or threat by reviewing their status on the International Union for Conservation of Nature Red List of Threatened Species (IUCN, 2008). The surveys indicated there were no threatened species present in Masdar City site, and with no impact to the marine environment. A biodiversity action plan has been developed to maintain levels of habitat through the construction phases. The map below of Masdar City site highlights the areas that have been identified as a biodiversity protection area for Phase 1 of construction. This area has been preserved to allow for habitat to not be significantly impacted from the construction activities.



Biodiversity Areas are highlighted in green.

Light green are construction projects & buildings in operation

Turquoise are dewatering ponds

Dark blue are the SAF offices

## Air Quality Monitoring At Masdar City

The baseline air-quality monitoring program at Masdar City site was initiated in 2008 to provide a full understanding of the existing environment at Masdar City.

The study was followed by a continuous air quality monitoring program to measure and identify pollution sources during the construction phase of Masdar City. This program was carried out in 2010 using the Masdar-owned Air Quality Monitoring Station. During that year of continuous air quality monitoring during construction, there were no exceedances recorded against the Environmental Agency's guidelines, except for a few instances for ozone (O3) and dust levels (PM10). However, these parameter readings did not exceed the Masdar baseline values taken prior to construction.

As a result of not exceeding the majority of EAD air quality monitoring criteria, Masdar has not continued with uninterrupted air quality monitoring and therefore does not have an air quality data for the reporting period. However, below is the initial study on the Masdar City site as part of the EIA study in 2009. Masdar will readdress air-quality monitoring when there is a significant change in the activities and number of projects underway to again assess the compliance towards the EAD requirements. The table below shows the maximum average concentration of continuous air-quality monitoring parameters between March 2010 and September 2010.

## Air Quality Table

Pollutants	Average Times	Standards					Results
		Dubai Municipality Maximum Allowable Limits )	UAE Maximum Allowable Limits (µg/m3)	EU Air Quality Limit Values (µg/m3)	WHO Air Quality Guidelines (AQG)	UAE (µg/m3)	Maximum Average Value (µg/m3)
NO2	1-Hour	-	400	200 (max. 18 exceedances allowed per year)		-	126.87
	24-Hour	-	150	-		-	128.15
SO2	1-Hour	-	350	350		-	32.57
	24-Hour	-	150	125		-	55.68
CO	1-Hour	-	30,000	-		-	1814.83
	8-Hour		10,000	10,000		-	1536.60
O3	1-Hour	-	200	-		-	149.07
	8-Hour		120	120		-	134.00
PM10	24-Hour	-	150	50 (max. 35 exceedances allowed per year)		-	300.25
Benzene	1-Hour	50*	-	-	-	-	2.80
H2S	24-Hour		-	-		150	12.80
Toluene	24-Hour		-	-		8,000	4.80
Xylene	1-Hour		-	-		66.200	14.15

Note: Bold indicates air quality exceedances

\*There is no UAE annual average limit value for benzene. Dubai Air Quality Standards (Dubai Municipality, 2008) is used as a local limit. EU limit value is also included in the table for comparison purposes.



London Array The World's largest offshore wind farm

## CEMP Compliance of Masdar City Projects

The work done in ensuring compliance to the construction environmental management plan has led to Masdar being rated as one of the best managed construction sites in Abu Dhabi\*. This has come about from frequent monitoring and a rigorous training program conducted during the reporting period to enable the correct implementation of Masdar's CEMP requirements. As a result, Masdar continues to offer best practice advice and guidance to other developers and construction contractors. The performance over the reporting period is highlighted below and shows the non-compliance or observations that have been acknowledge against the various CEMP assessment criteria complied by an EAD approved auditing company and conducted on a quarterly basis. All audit reports once finalized are submitted to EAD as a reference of the activities and performance of Masdar City projects.



**70 Internal Environmental Audits**



**13 Minor Environmental Incidents\*\***



**16,427Mh's Environmental Training**



**5,474Mh's Environmental Inductions**



**137 Environmental Inspections**



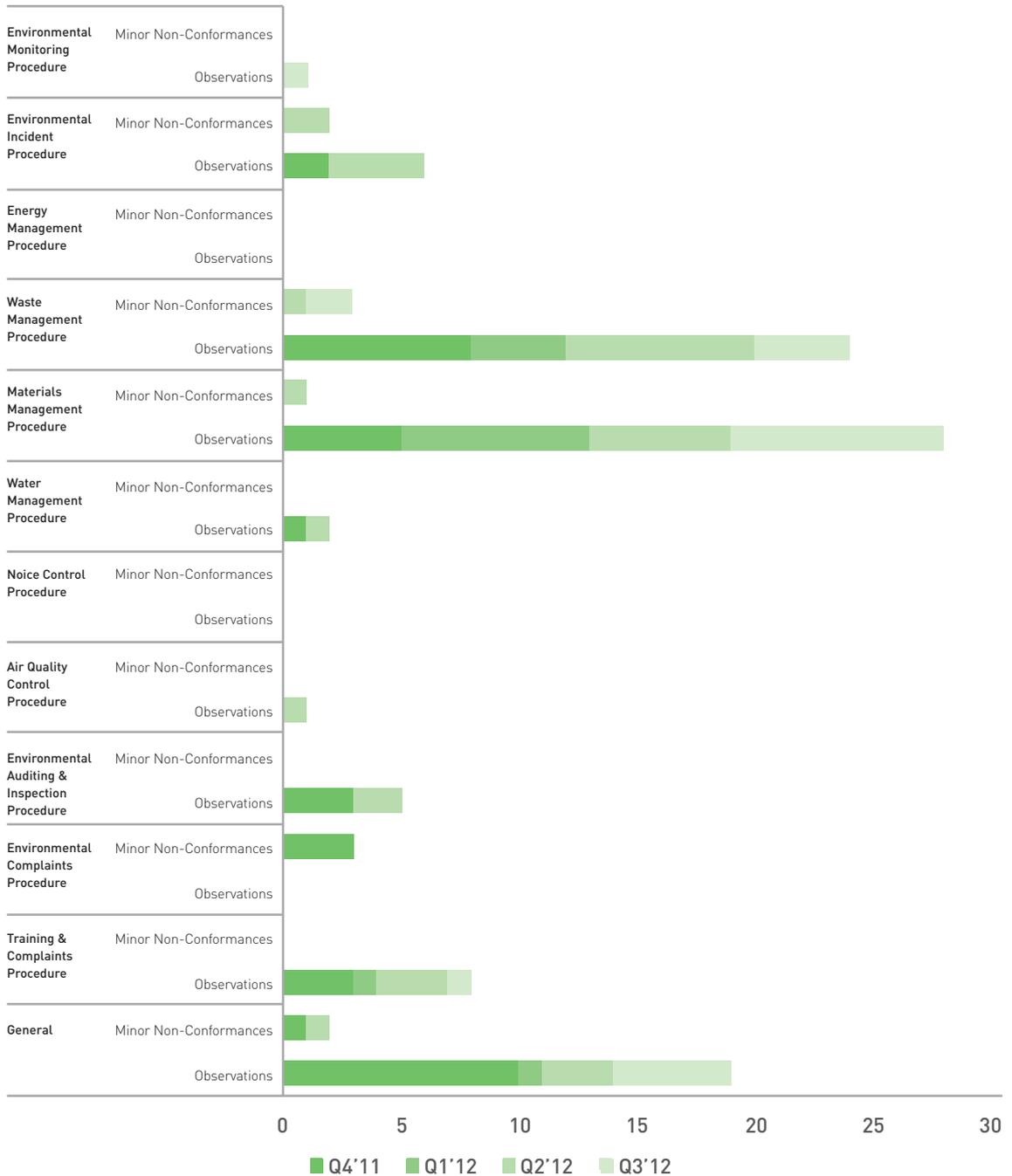
**0 Complaints from local community**

*\*Based on feedback from external auditors*

*\*\*Minor Environmental incidents were characterized as small, containable spills within construction project site boundaries. The recorded spills were easily brought under control and prevented from re-occurring by the Contractors and caused no interruption to services.*

## External Audits CEMP compliance at Masdar City

As part of Masdar's obligation to EAD, an external environmental auditor is contracted to externally assess and verify the Masdar's compliance to the agree CEMP. The audits are conducted on a quarterly basis and the below table highlights the results of the audits in terms of non-conformances and observations related to the reporting year.



The background is a solid purple color with several large, semi-transparent circular arrows of varying sizes and orientations scattered across it. The arrows are a lighter shade of purple, creating a sense of movement and flow.

# Our Supply Chain Management

# Our Supply Chain Management

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For Masdar, the supply chain sustainability theme is about constantly seeking and driving improvement in the quality, cost effectiveness and sustainability of the goods and services purchased through the application of both strategic and operational supply chain management practices (e.g., strategic sourcing, life cycle assessment, whole life cycle costing, supplier assessments, responsible procurement policies and programs), while ensuring ethical and fair business standards are upheld.

Masdar procurement strategy is to increase competitive advantage in the procurement process by ordering products or services from a selection of vendors. The main aims of Masdar's procurement strategy focus on:

- Promoting the delivery of 'best value' through good procurement practices
- Facilitating the development of effective and coordinated procurement activities within Masdar
- Sourcing on a global basis while giving priority to Abu Dhabi based vendors and Masdar freezone registered companies
- Continuous assessment of processes and procedures against best practices such as strategic procurement tools and approaches.

In 2012, Masdar has worked to gain recognition of excellence in procurement and supply chain practices. The Chartered Institute of Purchasing & Supply (CIPS) has a global accreditation that is awarded to businesses and organizations for achieving the highest international standards in their procurement and supply-chain policies and procedures. The certification is awarded after a series of rigorous comprehensive and systemic reviews carried out by an independent auditor. Masdar Procurement and Contracts department received a silver award by CIPS in October 2012, acknowledging the department's and Masdar's commitments to best practice management of contracts and procurement.

To address issues surrounding supply chain ethics, Masdar has developed a procurement portal that allows for the pre-qualification of companies that wish to do business with Masdar. The purpose of the portal is to vet the capabilities of companies and their ability to meet Masdar's sustainability requirements. The procurement portal is the first phase for companies to confirm their adherence to the primary elements of the supply chain code of conduct. Potential companies first must acknowledge the five prerequisites, which are part of Masdar Supply Chain Code of Conduct. They are as follows:

- The supplier must comply with all relevant local and national laws and regulations with regard to employment practices, benefits, health and safety and anti-discrimination.
- The supplier must not use child, forced or involuntary labor in any form.
- The supplier must comply with all relevant local and national laws and regulations with regard to occupational health and safety and the provision of health related benefits to employees.
- The supplier must comply with all relevant local and national laws and regulations with regard to land and water management, waste and recycling, the handling and disposal of toxic substances, discharges and emissions, noise, transportation of products, waste.
- The supplier must strictly comply with all laws and regulations on bribery, corruption and prohibited business practices.

In addition to the prerequisites, the supply chain code of conduct is available for potential suppliers to Masdar and subscribers to The Future Build to complete an extension of the prerequisites on the procurement portal to showcase their ethical practices and policies in place to mitigate unethical practices in their own supply chain. A total of 270 suppliers of products and services have completed the supply chain code of conduct in full and provided a declaration of compliance ensuring they meet the requirements.



## Materials at Masdar City

The Masdar Supply chain team at Masdar City works with suppliers and strategic partners to analyze the entire product lifecycle, and to work out where carbon savings can be made, either through:

- **More efficient production processes, logistics plans**
- **Procuring or producing locally wherever possible**
- **Introducing more recycled material and renewable energy into the production process.**

The overall approach to material sourcing for Masdar is to consider the environmental impact of materials. Where required materials are not available, Masdar engages with suppliers to create the infrastructure required to deliver the materials e.g. encouraging suppliers to use recycled materials in their products, such as concrete and Aluminum or working with wood suppliers to follow sustainable forestry standards.

The tracking of high impact materials on all major projects is made possible with the utilization of the SoFi software provided by PE international. The following tables show the quantities of the high impact construction materials and post-consumer recycled content used in Masdar projects in the reported period.

	Concrete	Steel	Masonry*	Aluminum	Total
	Tons	Tons	Tons	Tons	Tons
<b>Oct-11</b>	4829	287	1267	17	6400
<b>Nov 11</b>	12	304	0	20	336
<b>Dec-11</b>	270	0	0	20	290
<b>Jan-12</b>	3797	433	11	20	4261
<b>Feb-12</b>	2324	283	192	20	2819
<b>Mar-12</b>	4995	578	0	24	5597
<b>Apr-12</b>	6051	187	128	0	6366
<b>May-12</b>	11590	599	274	0	12463
<b>Jun-12</b>	12204	555	1672	0	14432
<b>Jul-12</b>	4952	72	374	0	5398
<b>Aug-12</b>	747	66	44	0	858
<b>Sept-12</b>	1436	54	450	0	1939
<b>Total</b>	<b>53208</b>	<b>3418</b>	<b>4412</b>	<b>121</b>	<b>61159</b>

Materials Used (Oct-11 - Sept 12)	Quantity (Tons)	Recycled Content (Tons)	Recycled (%)
<b>Concrete</b>	53,200	3,458	6.5
<b>Steel</b>	3,419	3,200	93.59
<b>Aluminum</b>	121	109	90

\*Masonry materials used during the reporting period do not have any recycled content

## Embodied Carbon Comparisons to Business as Usual

In an effort to quantify the impact of Masdar's work towards low carbon construction activities the following diagram highlights the embodied carbon savings achieved against the business as usual construction activities of a similar project.

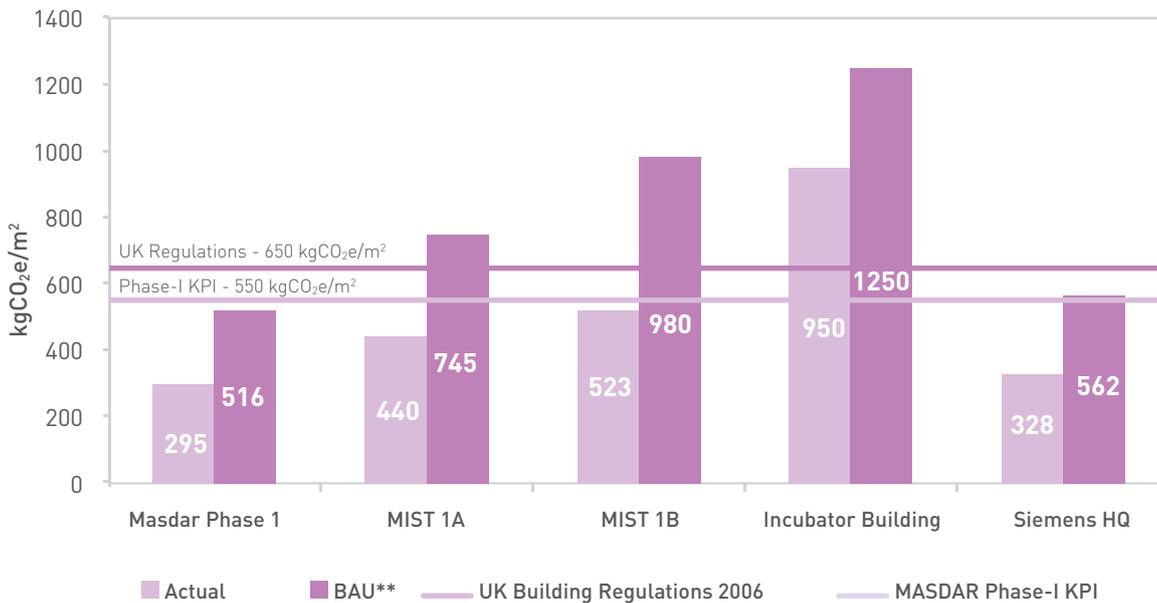
Embodied Carbon Numbers:

Material Type	Business As Usual	Masdar Used	Embodied Carbon Ref.
Concrete	280 kgCO <sub>2</sub> /m <sup>3</sup> – 433 kgCO <sub>2</sub> /m <sup>3</sup>	116 kgCO <sub>2</sub> /m <sup>3</sup> – 260 kgCO <sub>2</sub> /m <sup>3</sup>	EPD in accordance to ISO 14025
Steel	1.724 tCO <sub>2</sub> /ton	0.517 tCO <sub>2</sub> /ton	ICE*
Aluminum	18.903 tCO <sub>2</sub> /ton	1.736 tCO <sub>2</sub> /ton	LCA in accordance to ISO 14040

\*For Inventory of Carbon and Energy, University of Bath, UK (<http://www.bath.ac.uk/research/features/embodiedenergy.html>)



The below data looks at Masdar city projects (completed and construction) total embodied carbon. Masdar uses the UK regulations as an international benchmark and has set a target for the developments of Masdar City phase 1.



\*\* Business As Usual (BAU) numbers are based on the lowest recycled content normally achieved as standard practice in the UK. Reference: The Waste & Resources Action Programme Plan (WRAP), [www.wrap.org.uk](http://www.wrap.org.uk)

## Our work on Green Concrete in Masdar City

The ready-mix concrete used to build Masdar City contributes significantly to the city's carbon footprint. However, a variety of steps have been taken to improve the sustainability of this concrete with regard to the sourcing of materials and innovative design mixes and systems. The green, ready-mix concrete used in Masdar City's construction is produced on site by Al Falah Ready Mix, using two automated batching plants.

The batching plant replaces a portion of the concrete's Portland cement by 40-60 percent with a supplementary cementing material (SCM), for example, blast furnace slag (GGBS) from iron production to produce the concrete. This reduces GHGs and air pollution, and because GGBS is a by-product of other industrial processes and are typically directed to landfills, using these materials as raw materials for another process further reduces waste. The GGBS also improve the concrete's strength and durability, while reducing its embodied CO<sub>2</sub> by as much as 58 percent.

By using supplementary cementing material, Masdar replaced approximately 3,000 tons of cement with GGBS in its concrete in the reporting period, saving around 3,300 tons of CO<sub>2</sub> emissions.



## Our work on Green Aluminum in Masdar City

One of the initiatives of Masdar supply chain is the development of green Aluminum used in the façade panels and windows of the Masdar Institute, where, working with Rio Tinto Alcan, the team developed a 90 percent recycled Aluminum sheet, which lowered the embodied carbon from 56kg CO<sub>2</sub> per m<sup>2</sup> to 6.7kg CO<sub>2</sub> per M<sup>2</sup>.

Following this success, the team was asked to replicate the process for Aluminum extrusions. The challenge this time was that different alloys are used when making Aluminum extrusions. Whilst sheet Aluminum uses a 3000 alloy (e.g. old coke cans), extrusions need a much stronger 6000 alloy that is made from recycled engine parts and consumer durables such as windows and doors. There are no appropriate waste-recycling facilities, or re-melters that can handle recycled material in the region. So the team had to look to Europe to provide the green billet. European refiners and re-melters are well equipped with state-of-the-art technology to clean exhaust gases of dust, acidic compounds (HCL, HF, and SO<sub>2</sub>), volatile organic carbon, dioxins and furans. The final product came from a supplier who could provide billet with an 80% recycled content produced in a re-melter powered by renewable energy. This material was then shipped to the largest UAE Aluminum extruder who tested the billet and discovered that it exceeded international standards as laid down by Gulf Extrusions.

# Our Community Involvement



# Our Community Involvement

Community involvements address the external interactions Masdar has beyond commercially based supplier and customer relationships. Masdar's corporate vision and objectives highlight the company's desire to be a leader not only within Abu Dhabi, but on the global stage as well. To achieve this leadership, Masdar needs to define and execute on a community involvement agenda which involves:

- Fostering meaningful and lasting relationships with local citizens, civil society organizations, academia, and government entities in the local and global communities within which Masdar operates; while
- Promoting self-development, skill building and the contribution knowledge to solving some of our most pressing social concerns (e.g. climate change, fossil fuel dependency)

Two main streams have been identified within the community involvement agenda. These are:

- **Policy contribution** – How does the company engage the government and contribute to public policy on industry relevant sustainability topics?
- **Corporate philanthropy** – How does the company contribute directly to the betterment of society through social events, sponsorships and corporate alliances?

In keeping with the concept of knowledge sharing, Masdar and the various business units have developed a strong network of memberships and affiliations as well as involvement with initiatives that support the advancement of sustainable development.

Below is a selection of these associations:

- **Heroes of the UAE**
- **Emirates Solar industries Association**
- **EU-GCC Clean Energy Network**
- **Emirates Green Building Council**



In May 2012, Dr Sultan Ahmed Al Jaber received this year's United Nations' **Champions of the Earth** award. Organized by United Nations Environment Programme (UNEP), the award seeks to honour individuals whose actions and leadership have made a far-reaching positive impact on the environment.

## Masdar and the Sustainability Community

Masdar is dedicated to embracing the responsibility placed on the Abu Dhabi leadership, to act as a change agent both locally and internationally. The activities in which Masdar is involved act as strong reference points in the development of policy and understanding on successful implementation of renewable energy and sustainable development projects. Masdar is happy to add value to discussions on lessons learned through our experience, and actively participates in supporting global initiatives. During the reporting period, Masdar was involved in many panel discussions and conferences, and significantly contributed in shaping steps towards a sustainable future.



### United Nations Conference for Sustainable Development - RIO+20

In June 2012, Masdar was part of a UAE delegation that attended and actively participated in the RIO+20 conferences. Along with its participation in UN high-level negotiations at the Rio+20 Summit, officials from Masdar and Masdar Institute steered or participated in critical technical discussions including:

- Black Gold and the Green Economy: Hydrocarbon Exporters' Perspectives
- CCUS: Part of the Solution to Combat Climate Change
- Adapted Wind Resource Modelling in the GCC Region
- Private Equity Investment
- Exploring Investment Opportunities in Wind and Solar
- Dual Chamber Tubular Reactor for Continuous Transesterification of Waste Cooking Oil
- Potential Application of Biodegradable Material as Softener in Water Treatment
- Masdar Institute's Role in Shaping the Future Energy Landscape.

At the UN Secretary General's special reception on June 21 in Rio, Masdar CEO Dr. Sultan Ahmed Al Jaber announced the launch of Abu Dhabi Sustainability Week. To be held January 13-17, 2013, Abu Dhabi Sustainability Week will convene heads of state, business leaders, policy makers, researchers, academics and innovators to work collaboratively in addressing the economic and political hurdles to water security and energy. The events at the Abu Dhabi Sustainability Week will include the Assembly of the International Renewable Energy Agency; the World Future Energy Summit; the International Renewable Energy Conference in Abu Dhabi; the Zayed Future Energy Prize awards ceremony and the recently launched, International Water Summit, which will have its inaugural gathering during ADSW.

Masdar's other announcements at Rio+20 included the UAE Solar Atlas, a comprehensive online geographic database developed by the Masdar Institute of Science and Technology, IRENA and other partners. The Atlas will provide governments, NGOs and private enterprises with high-quality renewable energy resource data and will aid stakeholders analyzing the feasibility of proposed renewable energy projects. The new Atlas will be freely available online in digital format beginning in early 2013.

## Masdar as a Change Agent

### Sustainable Energy for All Initiative

The UAE and Masdar actively engaged with the UN's Sustainable energy for all initiative with Dr. Sultan Ahmed Al Jaber as a principle member of the high level group and Dr. Nawal Al Hosany as a member of the working group. The group includes distinguished global leaders from around the world – business, finance, governments and civil society. It will mobilize a broad range of stakeholders who can catalyze commitments and form partnerships. The United Nations Secretary-General recently launched the pioneering new initiative, "Sustainable Energy for All," to mobilize urgent global action. The Initiative brings all sectors of society to the table: business, governments, investors, community groups and academia. The United Nations is the ideal institution to convene this broad swathe of actors and forge common cause in support of three inter-linked objectives:

- Ensure universal access to modern energy services.
- Double the rate of improvement in energy efficiency.
- Double the share of renewable energy in the global energy mix.

These objectives are complementary. Progress in achieving one can help with progress toward the others. All are to be achieved by 2030, and all are necessary to achieve sustainable energy for all. The Secretary-General's Initiative contributes to the International Year of Sustainable Energy for All in 2012, as declared by all UN Member States, by mobilizing action from all key stakeholders. The International Year of Sustainable Energy for All was announced in Abu Dhabi during the World Future Energy Summit in January 2012.

Masdar's commitment to the Sustainable Energy for All Initiative includes:

- **A grid-connected PV plant in the island of Vava'u in Tonga that will supply 13 percent of the island's demand. This will save 180,000L of diesel oil annually and 400 ton of Carbon Dioxide**
- **A project in Afghanistan - where 8 isolated villages will receive Solar Home System with appliances. The benefits will reach 600 households**
- **The Zayed Future Energy Prize committed its newly launched Global High School Prize of U\$500,000 dollars distributed over 5 geographic regions to the Sustainable Energy for all Goals.**
- **A 15MW PV project in Mauritania which will supply 10 percent of the country's energy needs.**



## The Sustainable Development Solutions Network (SDSN)

The UN Secretary-General announced the launch of the United Nations Sustainable Development Solutions Network (SDSN) on August 9, 2012 with Dr Sultan Al Jaber representing Masdar and the UAE as a member of the SDSN.

The Solutions Network is built of scientific and technical expertise from academia, civil society, and the private sector in support of sustainable-development problem-solving at local, national, and global levels. This Solutions Network will accelerate joint learning and help to overcome the compartmentalization of technical and policy work by promoting integrated approaches to the interconnected economic, social and environmental challenges confronting the world. The SDSN will work closely with United Nations agencies, multilateral financing institutions, as well as other international organizations.

The Network will also provide technical support to the High-level Panel of Eminent Persons on the Post-2015 Development Agenda. Over time the SDSN will launch projects to pilot or roll-out solutions to sustainable development challenges and assist countries in developing sustainable long-term development pathways.



## The International Peace Institutes Task Force on Energy Security

Masdar CEO, Dr. Sultan Ahmed Al Jaber is a patron of the International Peace Institutes Task Force on Energy Security. The purpose of the task force is to look at the impact of energy on security, and to strengthen multi-lateral mechanisms to promote cooperation and prevent or defuse energy-related conflicts.

Consistent with the methodology used for previous IPI Task Forces on Strengthening Multilateral Security Capacity, the Task Force on Energy and Security will involve experts from multi-lateral organizations, UN Member States, the private sector, and civil society (particularly think tanks and academia). In a series of meetings over two years, the task force will examine the inter-relationship between energy and security, focus on specific case studies where energy is a potential source of conflict, and come up with recommendations for improving multi-lateral cooperation in this field.



## Global Sustainable Cities Network (GSCN)

Masdar City currently serves as the Secretariat for the GSCN which aims to provide an open platform for ground breaking sustainable city initiatives throughout the world to share knowledge that can be utilized and incorporated throughout the initiatives' respective development life cycles.

The GSCN has five initial priority focus areas:

- Conducting information exchange related to domestic regulatory and policy mechanisms in order to identify gaps and best practices
- Identifying common-interest technology domains and transfer opportunities
- Enhancing global sustainable city monitoring practices and indicators, including methods and tools
- Developing and publishing a country level comparative study
- Contributing to the 2012 United Nations Conference on Sustainable Development (Rio+20) and the United Nations Sustainable Energy For All (SE4All) initiative regarding the role for sustainable city development and related energy issues

Knowledge-sharing activities for these domains are carried out within the context of urban planning processes and green city governance architecture. The initial priority focus areas serve as the basis of a roadmap for these technology domains that will help the initiative publish (via the Clean Energy Solutions Center) a report detailing current and planned projects, best practices, and policy mechanisms by the fourth Clean Energy Ministerial.

Current partners include China, Denmark, Finland, Sweden, and the United Arab Emirates (selected city/initiative within each country).



## Abu Dhabi Sustainability Group (ADSG)

In addition to its international efforts, Masdar is actively involved in local sustainability initiatives and is a member of the Abu Dhabi Sustainability Group (ADSG). Initiated by EAD, the Abu Dhabi sustainability group is a membership organization that welcomes public and private entities in Abu Dhabi to share knowledge and experience to assist in policy development recommendations and create an open dialogue with all members. ADSG has a series of task force groups that are designed to address pressing issues that the members face in their organizational activities. Masdar is proud to have a number of its employees actively involved in sharing expertise in the various taskforces. The chairperson of the sustainable procurement task force is Zuha Moussa, Head of Procurement & Contracts at Masdar. Additionally, Masdar is a member of the General Secretariat and is represented by Dr. Nawal Al Hosany. Masdar hosted an awareness workshop for ADSG members to learn more about the 2012 ZFEP winners, Carbon Disclosure Project held in Masdar City. The workshop highlighted the benefits of carbon reporting, and identified the benefits to Abu Dhabi and UAE entities.

## START Initiative & Abu Dhabi Entities

Having developed the Start initiative as an internal awareness program for employees, Masdar has made available the data and developed collateral to be used by other entities, free of charge. Government entities such as Aldar and Abu Dhabi Airports Company (ADAC) have taken all or aspects of the START program to implement and enhance an internal awareness program of their own. The START initiative has also been adopted abroad by the UAE embassy in Washington DC as part of an on-going sustainability program.

## Youth Outreach at Masdar

# YFEL

## YOUNG FUTURE ENERGY LEADERS

Masdar is continuing to engage students from schools across the UAE as part of its outreach program. Over the past two years, Masdar has put in concerted efforts towards spreading the message of sustainable development among the youth. The Young Future Energy Leaders (YFEL) program – an initiative lead by Masdar Institute, has been made an integral part of WEFS in a bid to attract brightest young talents interested in applying their skills to the renewable energy sector. In addition to inviting students to Masdar, Masdar also visits schools which are unable to schedule a visit to trigger students' interest towards research and development (R&D) in renewable energy. Masdar attended the Science Fair organized by the Emirates National School - Mohammed Bin Zayed City Girl's Campus, and attended a similar Science Fair being held in the boy's campus of the same school in the following week.

Through the outreach program, Masdar encourages the development of a spirit of inquisitiveness among the youth towards innovative future energy solutions. It also reaffirms the company's commitment to engage the youth to create a clean and safe environment by harnessing sustainable sources of energy, thus countervailing threats posed by climate change and global warming.

## 2011 visits

**20 Schools (750 Students Abu Dhabi & Dubai)**

## 2012 visits

**62 Schools**

**1863 Students (Abu Dhabi, Dubai, Sharjah,  
Liwa & Al Ain)**

**200 Students @ WFES '10**

**2,000 Students @ WFES '11**

**4,500 Students @ WFES '12**

## Market Day @ Masdar City

In October 2011, more than 10,000 people from across the UAE gathered for the second 'The Market @ Masdar City', the family-focused street fair and organic market held at Masdar City.

The event organized by Masdar and supported by the Environment Agency-Abu Dhabi (EAD), aimed to inform, educate, and engage visitors about sustainability issues including; water conservation, energy efficiency, renewable energy, and clean technology while showcasing elements of Masdar City. Families also enjoyed the opportunity to explore wares from over 35 exhibitors. These included organic produce, cosmetics, and skincare products from RIPE Market, Solace Organics, the Organic Foods and Café, @Home, Ekotribe, and the Philippine Community Fund – The Little Fair Trade Shop. The shop has pledged to reinvest profits back into the communities where the products were manufactured. Additionally, UAE based K's Cookies, Baby Cakes, Hessa Al Mazrouei T-shirt, and Foa Al Ward participated. Also at the market day, children learned about sustainability and environmental stewardship from a "Mad Scientist workshop.

The line-up of entertainment included live music, raffle draws, balloon artists, and children's entertainers dressed in costumes made from recycled materials.



**8,000 Visitors**

**Market Day @ Masdar City April 2011**



**10,000 Visitors**

**Market Day @ Masdar City Oct 2011**





### Al Hilal bank eGrab Initiative

In June 2012, Masdar agreed to support an initiative launched by Al Hila Bank to provide a mobile banking service. The initiative named 'eGrab' will offer personal banking services on the go by deploying a bus that is fitted with all the necessary needs for the banks clients.

The bus is powered by 100 percent electricity, and Masdar is supporting this initiative by offsetting the emissions generated from the electricity used by the bus on an annual basis. Masdar is proud to be part of this positive initiative to provide access to banking services in an environmentally friendly manner.



### Masdar and the 'Recycle to Smile' Initiative

Each year, Masdar picks an organization to work with and support during the holy month of Ramadan. In 2012, Masdar participated in a project called 'Recycle to Smile,' a collaboration between Operation Smile UAE and IndustryRE. The campaign is designed to raise funds through electronic waste recycling. IndustryRE committed to recycle old, unrepared or unwanted donations of mobile phones, laptops, mp3 players and other electronic devices. The money raised from the recycling was then donated to Operation Smile UAE to provide free surgery to children with facial deformities. Masdar employees provided their unwanted electronic goods and helped to support this good cause. They also promoted sustainability through recycling.

## Closing remarks

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This report will significantly improve our stakeholders' understanding of how Masdar operates, and will pave the way for future reports. The process of producing this report has allowed us to identify opportunities where the best practices of one section of the organization can benefit another. Information in this report will form a baseline for all new reporting data, and will allow Masdar to establish clearly defined targets and indicators that will help us evaluate the company's sustainability performance in the future.

Following the release of this report, we will make continued efforts to assess the material issues that our stakeholders tell us can best communicate our achievements.

This is the first comprehensive report of all of Masdar's activities and accomplishments. It is crucial that we understand the reader's opinion of how well the report has provided insight into Masdar's operations and activities. Throughout 2013, we will conduct a series of engagement exercises with our stakeholders, allowing them to provide feedback and guidance on how to generate more value from the reporting process.

For updates on Masdar and our activities please follow us:



@Masdar  
@ZFEP  
@MasdarInstitute  
@WFES



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MasdarInstitute  
WFES

# Appendix

## List of Rare or Uncommon Birds Observed at the Masdar City Site – EIA 2009

Common Name	Latine Name	Sightings	IUCN RL	UAE RDL	EHS Management System *	Habitat	Specialist Comments	Value
Black-crowned Sparrow-lark	<i>Eremoptria nigriceps elanauchen</i>	Numerous sightings across the site during both survey periods.	Least Concern	Non-threatened	Category III	Undisturbed desert; sandy areas with gravel plains between the dunes.	Under pressure from human activities	Medium
Black-winged Stilt	<i>Himantopus himantopus</i>	Three individuals flying over site.	Least Concern	Threatened in the UAE	Category II	Wetlands		High
Blue cheeked Bee-eater	<i>Merops persicus</i>	One sighting.	Least Concern	Rare UAE Breeder	Category III	Semi desert		Medium
Chestnut bellied Sand grouse	<i>Pterocies exustus erlangeri</i>	A pair sighted flying over the site. Known to breed at the airport.	Least Concern	Threatened in the UAE	Category I	Coastal deserts		High
Common Kestrel	<i>Falco tinnunculus rupicolaeformis</i>	One sighting during Breeding bird survey, 2 sightings during migratory. All individuals were flying over the site towards the airport.	Least Concern	Rare UAE Breeder	Category II	Open habitat and shrubland.		Medium
Common Quail	<i>Coturnix coturnix</i>	One sighting in the southern part of the site.	Least Concern	Pioneer species	Category II	Scrubland and habitats with a lot of cover.	Uncommon passage migrant and scarce winter visitor	Medium
Eurasian Curlew	<i>Numenius arquata</i>	Two birds flying over the site.	Near Threatened	Not threatened	Category II	Coastal wetlands		High
Eurasian Hoopoe	<i>Upupa epops</i>	One sighting	Least Concern	Rare UAE Breeder	Category III	Semi desert environment		High
Egyptian Nightjar	<i>Caprimulgus aegyptius</i>	One along the central track.	Least Concern	Unknown	Category II	Dry, open country	Uncommon passage migrant and scarce winter visitor	Medium
Desert Lesser Whitethroat	<i>Sylvia curruca</i>	One sighting during breeding bird survey, 6 sightings during migratory bird survey.	Least Concern	Important Rare Birds within UAE	Category II			High

## List of Rare or Uncommon Birds Observed at the Masdar City Site – EIA 2009

Common Name	Latine Name	Sightings	IUCN RL	UAE RDL	EHS Management System *	Habitat	Specialist Comments	Value
Green Sandpiper	Tringa ochropus	One flying around and landing near the drainage area.	Least Concern	Not threatened	Category II	Wetlands	Uncommon passage migrant and scarce winter visitor	Medium
Grey Wagtail	Motacilla cinerea	One flying over the area.	Least Concern	Unknown	Category III	More commonly found in mountains than along the coast	Uncommon passage migrant and scarce winter visitor	Medium
Menetries Warbler	Sylvia mystacea	Four sightings	Least Concern	Important Rare Birds within UAE (winter migrant)	Category II	Dry, open habitats in semi-desert scrub.		High
Purple Heron	Ardea purpurea	One, flying towards the airport.	Least Concern	Not threatened	Category II	Lakes and wetlands	Uncommon passage migrant and scarce winter visitor	Medium
Rose-coloured Starling	Sturnus roseus	One sitting in the trees just south of the main office.	Least Concern	Not threatened	Category III	Open agricultural land and scrubland	Uncommon passage migrant and scarce winter visitor	Medium
Rufous tailed Scrub Robin	Cercotrichas galactotoes	2 sightings, one during breeding bird survey, one during migratory bird survey	Least Concern	Rare UAE Breeder	Category III	Scrub, but has colonised desert plantations		High
Upcher's Warbler	Hippolais Languida	A total of five sightings	Least Concern	Important Rare Birds within UAE (migrant)	Category II	Semi-desert and scrub		High

\*EHS Management Systems (EAD, 2008b) Categorization:

Category I Has the highest conservation, cultural and economic value in the UAE

Category II has a higher conservation; cultural and economic value that Category III, but less than Category I

Category III Has a lower conservation, cultural and economic value that Category II species

## Reporting Principles for Defining Content

This report has used the most current to date Global Reporting Initiative Guidelines; the GRI 3.1 requirements have been used as assessment criteria to enrich the integrity of the Masdar's sustainability report for 2011/12.

### **Reporting Period**

In order for the launch of Masdar's first Sustainability Report to coincide with Abu Dhabi Sustainability Week in January 2013, the reporting period has been determined to include data and activities that fall under Q4 2011 up until Q3 2012 to allow for sufficient time for the collection and validation of relevant data. This period will be the set period for subsequent reports until otherwise stated to allow for comparability.

### **Materiality**

It is understood that this report reflects the material issues that have been raised by the key stakeholders and has prioritized the main sustainability themes which have been established to maintain Masdar's sustainability journey.

### **Prioritizing topics within the report**

The topics identified in this report reflect the priorities put forward by the shareholder. As a state owned enterprise subsidiary, Masdar is not required to prioritize the disclosure of detailed financial information and instead focus on the offering of significant transparency in labor practices, governance along with environmental and economic development impacts. The report is used to provide further understanding of Masdar's activities and performance.

### **Boundary**

The defined boundary for this report is to provide an outline of all operations with a detailed focus on the UAE based activities that are solely controlled by Masdar. To that affect the report will consist of a detailed breakdown of Masdar's corporate functions along with Masdar City activities. Joint ventures will not be included in this report with a plan to enhance the scope and widen the boundary over the next 5 years to ultimately include all Masdar activities regionally and internationally.

### **Externally Assured**

This report has been externally verified by RSK according to AA1000APS (2008) at a moderate level of assurance and was evaluated against the GRI 3.1 framework.

### **Stakeholder Inclusiveness**

As part of this reporting exercise we feel we have successfully acknowledged all keys stakeholders and their specific issues related to Masdar's activities. The elements focused on in this report are in response to the communications with these stakeholders.

### **Sustainability Context**

We at Masdar feel that this report highlights and includes the major sustainability related impacts that affect the defined operations and activities. The report addresses identified Economic, Environmental and Social issues with reference to regional and global significance.

## Reporting Principles for Defining Quality

### **Balance**

In developing this report we feel we have highlighted both positive and less positive performances in the selected activities outlined. The report is balanced in its content to provide a true account of Masdar's operations.

### **Comparability**

The report has been structured to ensure that where available previous performance data has been disclosed to allow for comparisons to the current performance data of the report period. As this is the first report, it will largely act as a baseline for future reporting performance data.

### **Accuracy**

We believe that the information in both quantitative and qualitative data is accurate and auditable. Any limitations and estimations have been clearly identified

### **Timeliness**

This report is inclusive of the most up to date information and allows for a relevant assessment of the organizations current Economic, Environmental and social status of operations and activities.

### **Clarity**

This report has been designed and worded to ensure that the reader is able to understand and comprehend the message and information provided in a clear and concise manner.

### **Reliability**

The report has been designed and subjected to a rigorous review internally. We have used various tools to ensure that the calculations and information is reliable with recognized methodologies that can allow for the verification of data.

Indicator No.	G3.1 Indicators	Location in report
1.1	Statement from the most senior decision-maker of the organization	7
1.2	Description of key impacts, risks, and opportunities.	7
2.1	Name of the organization.	11
2.2	Primary brands, products, and/or services.	11
2.3	Operational structure of the organization, including main divisions, operating companies, subsidiaries, and joint ventures.	13
2.4	Location of organization's headquarters.	PO Box 54115, Masdar City, Abu Dhabi, UAE
2.5	Number of countries where the organization operates, and names of countries with either major operations or that are specifically relevant to the sustainability issues covered in the report.	12
2.6	Nature of ownership and legal form.	State owned enterprise subsidiary
2.7	Markets served (including geographic breakdown, sectors served, and types of customers/beneficiaries).	12
2.8	Scale of the reporting organization.	71-87
2.9	Significant changes during the reporting period regarding size, structure, or ownership.	N/A - First sustainability report
2.1	Awards received in the reporting period.	66, 77, 79, 89, 105, 111
3.1	Reporting period (e.g., fiscal/calendar year) for information provided.	Q4 2011 - Q3 2012
3.2	Date of most recent previous report (if any).	N/A - First sustainability report
3.3	Reporting cycle (annual, biennial, etc.)	Annual
3.4	Contact point for questions.	5
3.5	Process for defining report content.	123
3.6	Boundary of the report (e.g., countries, divisions, subsidiaries, leased facilities, joint ventures, suppliers). See GRI Boundary Protocol for further guidance.	123
3.7	State any specific limitations on the scope or boundary of the report (see completeness Principle for explanation of scope).	123
3.8	Basis for reporting on joint ventures, subsidiaries, leased facilities, outsourced operations, and other entities that can significantly affect comparability from period to period and/or between organizations.	123
3.9	Data measurement techniques and the bases of calculations, including assumptions and techniques underlying estimations applied to the compilation of the Indicators and other information in the report.	123
3.1	Explanation of the effect of any re-statements of information provided in earlier reports, and the reasons for such re-statement (e.g., mergers/acquisitions, change of base years/ periods, nature of business, measurement methods).	N/A - First sustainability report
3.11	Significant changes from previous reporting periods in the scope, boundary, or measurement methods applied in the report.	N/A - First sustainability report
3.12	Table identifying the location of the Standard Disclosures in the report.	124-129
3.13	Policy and current practice with regard to seeking external assurance for the report.	123, 130-133
4.1	Governance structure of the organization, including committees under the highest governance body responsible for specific tasks, such as setting strategy or organizational oversight.	13, 21-23

Indicator No.	G3.1 Indicators	Location in report
4.2	Indicate whether the Chair of the highest governance body is also an executive officer.	13
4.3	For organizations that have a unitary board structure, state the number and gender of members of the highest governance body that are independent and/or non-executive members.	13
4.4	Mechanisms for shareholders and employees to provide recommendations or direction to the highest governance body.	21, 33
4.5	Linkage between compensation for members of the highest governance body, senior managers, and executives.	36
4.6	Processes in place for the highest governance body to ensure conflicts of interest are avoided.	21, 28
4.7	Process for determining the composition, qualifications and expertise of the members of the highest governance body and its committees, including any consideration of gender and other indicators of diversity.	Selection based on qualification and experience in the energy sector according to shareholder
4.8	Internally developed statements of mission or values, codes of conduct, and principles relevant to economic, environmental, and social performance and the status of their implementation.	16-17, 25, 105
4.9	Procedures of the highest governance body for overseeing the organization's identification and management of economic, environmental, and social performance, including relevant risks and opportunities, and adherence or compliance with internationally agreed standards, codes of conduct, and principles.	21-23, 36-37
4.1	Processes for evaluating the highest governance body's own performance, particularly with respect to economic, environmental, and social performance.	Proprietary information
4.11	Explanation of whether and how the precautionary approach or principle is addressed by the organization.	22-23
4.12	Externally developed economic, environmental, and social charters, principles, or other initiatives to which the organization subscribes or endorses.	42, 111-115
4.13	Memberships in associations (such as industry associations) and/or national/international advocacy organizations.	111-115
4.14	List of stakeholder groups engaged by the organization.	31
4.15	Basis for identification and selection of stakeholders with whom to engage.	31
4.16	Approaches to stakeholder engagement, including frequency of engagement by type and by stakeholder group.	32
4.17	Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting.	33
EC1	Direct economic value generated and distributed, including revenues, operating costs, employee compensation, donations and other community investments, retained earnings, and payments to capital providers and governments.	60, 63
EC2	Financial implications and other risks and opportunities for the organization's activities due to climate change.	11, 15, 22
EC3	Coverage of the organization's defined benefit plan obligations.	Benefit plans for only full time UAE Nationals include a monthly contribution of 5% of the employee monthly salary and 15% from the employer. The fund is externally managed by Abu Dhabi Retirement Pensions & Benefits Fund
EC4	Significant financial assistance received from government.	Masdar is a state owned enterprise subsidiary

Indicator No.	G3.1 Indicators	Location in report
EC5	Range of ratios of standard entry level wage by gender compared to local minimum wage at significant locations of operation.	No minimum wage in UAE (Only significant location in reporting boundary)
EC6	Policy, practices, and proportion of spending on locally-based suppliers at significant locations of operation.	63, 105 (locally based is defined as UAE for this reporting boundary)
EC7	Procedures for local hiring and proportion of senior management hired from the local community at significant locations of operation.	62 (Senior management is defined as 'C' level, directors and heads of departments)
EC8	Development and impact of infrastructure investments and services provided primarily for public benefit through commercial, in-kind, or pro bono engagement.	74-76
EC9	Understanding and describing significant indirect economic impacts, including the extent of impacts.	64-69
EN1	Materials used by weight or volume.	107
EN2	Percentage of materials used that are recycled input materials.	107
EN3	Direct energy consumption by primary energy source.	90-91 - Total Consumption 138,808,800MJ
EN4	Indirect energy consumption by primary source.	90-91
EN5	Energy saved due to conservation and efficiency improvements.	89
EN6	Initiatives to provide energy-efficient or renewable energy based products and services, and reductions in energy requirements as a result of these initiatives.	83
EN7	Initiatives to reduce indirect energy consumption and reductions achieved.	83
EN8	Total water withdrawal by source.	92 - Only municipal water withdrawn
EN9	Water sources significantly affected by withdrawal of water.	Water sourced from municipal supply only
EN10	Percentage and total volume of water recycled and reused.	92-93
EN11	Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas.	99
EN12	Description of significant impacts of activities, products, and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas.	99
EN13	Habitats protected or restored.	121-122
EN14	Strategies, current actions, and future plans for managing impacts on biodiversity.	39, 102-103
EN15	Number of IUCN Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk.	121-122
EN16	Total direct and indirect greenhouse gas emissions by weight.	98, 108
EN17	Other relevant indirect greenhouse gas emissions by weight.	98, 108
EN18	Initiatives to reduce greenhouse gas emissions and reductions achieved.	108
EN19	Emissions of ozone-depleting substances by weight.	No known uses of ozone depleting substances in construction and operations
EN20	NOx, SOx, and other significant air emissions by type and weight.	100
EN21	Total water discharge by quality and destination.	93
EN22	Total weight of waste by type and disposal method.	94-95
EN23	Total number and volume of significant spills.	102
EN24	Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III, and VIII, and percentage of transported waste shipped internationally.	94

Indicator No.	G3.1 Indicators	Location in report
EN25	Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the reporting organization's discharges of water and runoff.	All water treated and reused onsite
EN26	Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation.	36-38, 79, 94-95, 97
EN27	Percentage of products sold and their packaging materials that are reclaimed by category.	Masdar does not sell packaged products with the defined boundary
EN28	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations.	Zero in reporting period
EN29	Significant environmental impacts of transporting products and other goods and materials used for the organization's operations, and transporting members of the workforce.	97
EN30	Total environmental protection expenditures and investments by type.	Zero in reporting period
LA1	Total workforce by employment type, employment contract, and region broken down by gender.	50-51
LA2	Total number and rate of new employee hires and employee turnover by age group, gender, and region.	52
LA3	Benefits provided to full-time employees that are not provided to temporary or part-time employees, by major operations.	52
LA15	Return to work and retention rates after parental leave, by gender.	51
LA4	Percentage of employees covered by collective bargaining agreements.	0%
LA5	Minimum notice period(s) regarding significant operational changes, including whether it is specified in collective agreements.	12 weeks' notice period
LA6	Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs.	100% (ExCom & OpCom level)
LA7	Rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities by region and gender.	55 – LTIs calculated on schedule work days
LA8	Education, training, counseling, prevention, and risk-control programs in place to assist workforce members, their families, or community members regarding serious diseases.	53-54, 56-57
LA9	Health and safety topics covered in formal agreements with trade unions.	N/A - No trade unions in UAE
LA10	Average hours of training per year per employee by gender and by employee category.	53
LA11	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings.	53-54
LA12	Percentage of employees receiving regular performance and career development reviews by gender.	100% male and females
LA13	Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity.	Board of Directors - 100% male 80% UAE Nationals 20% Expats
LA14	Ratio of basic salary of men to women by employee category.	Masdar does not differentiate between genders in compensation and promotes equal opportunities.
HR1	Percentage and total number of significant investment agreements and contracts that include human rights clauses or that have undergone human rights screening.	100% - 23, 105
HR2	Percentage of significant suppliers, contractors, and other business partners that have undergone human rights screening and actions taken.	100% - 105-106

Indicator No.	G3.1 Indicators	Location in report
HR3	Total hours of employee training on policies and procedures concerning aspects of human rights that are relevant to operations, including the percentage of employees trained.	100% employees trained
HR4	Total number of incidents of discrimination and corrective actions taken.	Zero incidents in reporting period
HR5	Operations and significant suppliers identified in which the right to exercise freedom of association and collective bargaining may be at significant risk, and actions taken to support these rights.	Zero – No collective bargaining in the UAE
HR6	Operations and significant suppliers identified as having significant risk for incidents of child labor, and measures taken to contribute to the elimination of child labor.	22-23, 105
HR7	Operations and significant suppliers identified as having significant risk for incidents of forced or compulsory labor, and measures to contribute to the elimination of all forms of forced or compulsory labor.	22-23, 105
HR8	Percentage of security personnel trained in the organization's policies or procedures concerning aspects of human rights that are relevant to operations.	Security services provided by third party
HR9	Total number of incidents of violations involving rights of indigenous people and actions taken.	Zero in reporting period
HR10	Percentage and total number of operations that have been subject to human rights reviews and/or impact assessments.	22-23, 37, 55-56
HR11	Number of grievances related to human rights filed, addressed, and resolved through formal grievance mechanisms.	Zero grievances related to human rights in reporting period
S01	Percentage of operations with implemented local community engagement, impact assessments, and development programs.	32-37
S09	Operations with significant potential or actual negative impacts on local communities.	74-81
S010	Prevention and mitigation measures implemented in operations with significant potential or actual negative impacts on local communities.	36-42, 102-103
S02	Percentage and total number of business units analyzed for risks related to corruption.	100% - 21-23, 105
S03	Percentage of employees trained in organization's anti-corruption policies and procedures.	100% - 21, 25, 105
S04	Actions taken in response to incidents of corruption.	Zero incidents of corruption in reporting period
S05	Public policy positions and participation in public policy development and lobbying.	112-115
S06	Total value of financial and in-kind contributions to political parties, politicians, and related institutions by country.	No financial contributions to political parties during the reporting period
S07	Total number of legal actions for anti-competitive behavior, anti-trust, and monopoly practices and their outcomes.	Zero legal action for anti-competitive behavior, etc during reporting period
S08	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations.	Zero significant fines during reporting period
PR1	Life cycle stages in which health and safety impacts of products and services are assessed for improvement, and percentage of significant products and services categories subject to such procedures.	36-37
PR2	Total number of incidents of non-compliance with regulations and voluntary codes concerning health and safety impacts of products and services during their life cycle, by type of outcomes.	Zero incidents of non-compliance during reporting period

Indicator No.	G3.1 Indicators	Location in report
PR3	Type of product and service information required by procedures, and percentage of significant products and services subject to such information requirements.	N/A for activities during reporting period
PR4	Total number of incidents of non-compliance with regulations and voluntary codes concerning product and service information and labeling, by type of outcomes.	N/A for activities during reporting period
PR5	Practices related to customer satisfaction, including results of surveys measuring customer satisfaction.	32, 65, 67, 85
PR6	Programs for adherence to laws, standards, and voluntary codes related to marketing communications, including advertising, promotion, and sponsorship.	Masdar adheres to UAE laws and regulations related to marketing communications and does not sell any products that are banned in certain markets or subject to public debate
PR7	Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion, and sponsorship by type of outcomes.	Zero number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications
PR8	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data.	Zero complaints regarding breach of customer privacy
PR9	Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services.	Zero fines for non-compliance during reporting period

G3 DMA	Description	Location in report
DMA EC	Disclosure on Management Approach - Economic	21-23, 35-39, 42-43
DMA EN	Disclosure on Management Approach - Environmental	21-23, 35-39, 42-43
DMA LA	Disclosure on Management Approach - Labor Practices	21-23, 35-39, 42-43
DMA HR	Disclosure on Management Approach - Human Rights	21-23, 35-39, 42-43 (Security Services provided by 3 <sup>rd</sup> party)
DMA SO	Disclosure on Management Approach - Society	21-23, 35-39, 42-43
DMA PR	Disclosure on Management Approach - Product responsibility	21-23, 35-39, 42-43



PO Box 46112  
Al Ghaith Tower, Suite 1202  
Hamdan bin Mohamed St  
Abu Dhabi  
United Arab Emirates  
Telephone: +971 (0)2 627 3400  
Fax: +971 (0)2 627 5764  
[www.rsk.co.uk](http://www.rsk.co.uk)

## Assurance Statement

### Background

RSK Environment Llc (RSK) was commissioned by Abu Dhabi Future Energy Company (MASDAR) to carry out assurance of MASDAR's Corporate Sustainability Report 2011-12 ('the Report') in its printed format against the Global Reporting Initiative (GRI) 2011 Sustainability Reporting Guidelines Version 3.1. This independent assurance report is made solely to MASDAR in accordance with the terms of RSK's proposed scope.

The assurance engagement is based on the assumption that the data and information provided to RSK is complete and sufficient. RSK expressly disclaims any liability or co-responsibility for any decision a person or entity would make based on this assurance statement.

### Responsibility

MASDAR were are responsible for preparing the Report and the information and statements within it. They were are responsible for identification of stakeholders and material issues, for defining objectives with respect to sustainability performance, and for establishing and maintaining appropriate performance management and internal control systems from which the reported information is derived.

RSK's responsibility was to is to express our conclusions in relation to the assurance scope.

### Scope of Assurance

The scope of work agreed upon with MASDAR includes the following:

- assess the robustness of the data management system, information flow and controls;
- undertake an audit trail on selected claims and data streams to determine the level of accuracy in collection, recording and accumulation;
- Examine and review documents, data and other information made available to RSK by the MASDAR;
- Visit head-office;
- Conduct interviews with individuals (including data owners from different divisions and functions) of MASDAR where possible;
- Review MASDAR's approach to stakeholder engagement;



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- Perform sample-based audits of the mechanisms for implementing MASDAR's own sustainability-related policies, as described in the Report;
- Perform sample-based audits of the processes for generating, gathering and managing the quantitative and qualitative data included in the Report.

The assurance was made according to AA1000APS (2008) at a moderate level of assurance.

### **Limitations**

The absence of a significant body of established practice on which to draw allows for the selection of different but acceptable measurement techniques which can result in materially different measurements and can impact comparability. The precision of different measurement techniques may also vary.

Inherent limitations affect the conversion of electricity and fuel used to carbon emissions. Conversion of electricity and fuel used to carbon emissions is based upon information and factors derived by independent third parties. RSK's assurance work has not included examination of the derivation of those factors and other third-party information. Our assurance work has not included challenging the scientific work undertaken by independent third parties when calculating these emissions factors.

### **Our Independence**

RSK did not provide any services to MASDAR during 2011-12 that could conflict with the independence of our work. RSK was not involved in the preparation of any statements or data included in the Report except for this Assurance Statement.

### **Methodology**

RSK planned and performed the work to obtain all the evidence, information and explanations that were considered necessary in relation to the above scope.

Verification of the full Report, was based on GRI Guidelines and the AA1000 Assurance Standard (2008), RSK throughout the assurance process, concentrated on the issues that are believed to be most material for both MASDAR and its stakeholders.

As part of the verification RSK has:

- Challenged the sustainability-related statements and claims made in the Report and assessed the robustness of the data management system, information flow and controls;
- Executed the audit trail on selected items and data streams to determine the level of accuracy in collection, and recoding;
- Examined and reviewed documents, data and other information made available to RSK by MASDAR;
- Undertaken a visit to MASDAR head-office;
- Conducted interviews with 11 representatives from different divisions and functions of MASDAR;
- Reviewed MASDAR's approach to stakeholder engagement;



- Performed sample-based audits of the mechanisms for implementing MASDAR's own sustainability-related policies, as described in the Report;
- Performed sample-based audits of the processes for generating, gathering and managing the quantitative and qualitative data included in the Report;
- Reviewed the process of acquiring information and economic data from the MASDAR's 2011-12 financial audited accounts and authorized and issued management accounts.

### Conclusions

In RSK's opinion, the Report provides a fair representation of MASDAR's policies, management systems, initiatives and projects. The Report meets the general content and quality requirements of the Global Reporting Initiative (GRI) 2011 Sustainability Reporting Guidelines Version 3.1, and RSK confirms that the GRI requirements for Application Level 'A+' have been met.

- **Materiality:** MASDAR has demonstrated internal processes that are effective in bringing out issues of significance, and these issues are covered in the Report. RSK recommends that MASDAR strengthens formal processes for stakeholder engagement and assessing materiality in order to better understand, manage and improve its sustainability performance.
- **Completeness:** Based on RSK's review and within the reporting boundary defined by MASDAR, RSK is not aware that the Report omits relevant information that would significantly influence stakeholder assessments or decisions or that reflect significant economic, environmental and social impacts. The completeness of quantitative data reported can be further improved in certain environmental parameters.
- **Accuracy:** The data measurement techniques and bases for calculations have been adequately described to RSK. Although no systematic errors have been detected, RSK has identified some manual errors which have subsequently been corrected. MASDAR is committed to continually improving the quality of data and is in the process of adopting a more structured data management system. In the final form of the Report, RSK has not found material inaccuracies in the data verified or instances where data is presented in a way which significantly affects the comparability of data.
- **Neutrality:** RSK considers the information contained in the Report to be balanced. The emphasis on various topics in the Report is proportionate to their relative materiality.
- **Comparability:** The information in the Report is presented in a format that allows users to see positive and negative trends in performance.
- **Responsiveness:** MASDAR demonstrates an active commitment to dialogue with its stakeholders. The engagement process can be further strengthened by formally documenting the expectations on sustainability expressed by stakeholders through different engagement channels.

### Recommendations

The following is a summary of the observations and opportunities reported back to MASDAR. However, these do not affect RSK's conclusions on the Report, and they are consistent with MASDAR's objectives.

- Specific goals and targets for MASDAR Corporate should be developed and disclosed to help implement MASDAR's commitment to sustainability.
- An internal mechanism should be developed to help improve internal communication on sustainability reporting.
- A systematic and documented process for engaging key stakeholders on issues of concern should be further implemented.



**Ruba Farkh**  
**Principal Consultant**



**Andrew Glass**  
**Director**

