

# A DECADE OF DELIVERING SUSTAINABILITY REPORT 2016



# TABLE OF CONTENTS

---

## PRODUCTS AND SERVICES

Research & Development  
Powering Development  
Urban Development

---

## ABOUT THIS REPORT

This latest edition of Masdar's annual Sustainability Report continues to provide leadership in transparency and disclosure of notable sustainability initiatives in the region. Masdar has developed this report in accordance with the Global Reporting Initiative's G4 guidelines' core option covering the organizations activities during the reporting period of October 2015 to September 2016.

The GRI guidelines are an internationally recognized, voluntary tool that can help maximize the sustainability reporting process. Considered the benchmark for sustainability reporting, the GRI guidelines allow for Masdar's sustainability report to be viewed using a highly practiced and understood methodology for capturing and communicating performances across the organization.

For more information on GRI and the G4 guidelines, please visit [www.globalreporting.org](http://www.globalreporting.org)

For feedback and any questions related to this report, or regarding any of Masdar's Sustainability Initiatives contact [Sustainability@Masdar.ae](mailto:Sustainability@Masdar.ae)

## OUR 10 YEARS JOURNEY

### 2006

Masdar is guided by The Abu Dhabi Economic Vision 2030, a programme that drives new sources of income for the emirate and strengthens its knowledge-based sectors

### 2007

Masdar is the first renewable energy company to adopt a ground up, holistic approach: from education and research to commercialisation and deployment of clean energy

### 2008

Masdar advances the critical and interrelated elements necessary to make progress in the next phase of energy

### 2009

Masdar demonstrates the economic, social and environmental benefits of renewable energy

### 2010

Masdar creates social and economic opportunities by helping the UAE transition to an economy reinforced by knowledge capital

### 2011

Masdar is promoting the adoption of clean energy and water sustainability through an integrated eco-system that supports research, innovation, education, and the incubation and commercialisation of new technologies

### 2012

Masdar is addressing the world's pressing energy, water and climate challenges in support of the United Nations' Sustainable Development Goals

### 2013

Masdar is delivering renewable energy, sustainable technologies and water security to countries in the region and international markets – building on the UAE's energy leadership in oil and gas

### 2014

Masdar is delivering a return for Abu Dhabi and is supporting the development strategy of the UAE as a whole, enabling knowledge transfer, building human capital, and promoting economic diversification

### 2015

Masdar is at the forefront of innovation in renewable energy and sustainable development and has pioneered the adoption of clean energy in the Middle East

### 2016

For nearly a decade, Masdar has forged projects and partnerships to accelerate the adoption of renewable energy and sustainable development, and to nurture human capital



## MESSAGE FROM THE CEO



**Mohamed Jameel Al Ramahi**  
Chief Executive Officer - Masdar

It gives me great pleasure to introduce Masdar's fifth annual sustainability report, covering 2016 – the 10th anniversary year of Masdar. This report provides a detailed update on the status of Masdar's activities and projects globally. It also demonstrates our ongoing commitment to transparency of information and performance data by providing a clear insight into how Masdar operates and functions.

During the decade since Masdar was established, the UAE has developed a global reputation for leadership in clean technology and sustainable development. In the Middle East and beyond, there is a new emphasis on energy diversification, at a time when the growing market potential for renewable energy is being recognized worldwide.

Masdar is at the forefront of the industry's advancement, and this report underlines how we have put sustainability at the heart of the organisation. This includes how we drive innovation and operational efficiency; how we support the wellbeing and growth of our people; how we invest in communities; and how we engage with our stakeholders across the world.

The sustainability report shows that in 2016, Masdar's growing renewable energy portfolio contributed significantly to the communities it serves, totaling 2.3 terawatt hours (TWh) of clean energy production, while displacing more than 1.3 million tonnes of CO<sub>2</sub> in the process.

We also continued to push the global agenda on sustainability – Abu Dhabi Sustainability Week enjoyed a record year, with more than 35,000 attendees and 170 countries represented; the Zayed Future Energy Prize attracted a record number of submissions, celebrating innovation in sustainability at a community level; and the Masdar-hosted Solar Impulse 2 completed the first round-the-world flight without a drop of fuel, showcasing the potential of clean technologies.

This report also details how Masdar is contributing to the UAE's knowledge economy through the development of Emirati talent, providing opportunities to grow and become the leaders of tomorrow for Masdar and the United Arab Emirates.

As we look forward, I wish to express my gratitude to all who have contributed and supported Masdar on its journey to date, and my confidence in our ongoing success in the decades to come.

## CORPORATE OVERVIEW

### INTRODUCTION TO MASDAR

Masdar is on a mission to advance the clean energy industry in Abu Dhabi and around the world, and it is a catalyst for the economic diversification of the emirate. The Mubadala Development Company, which is owned by the Abu Dhabi government, established Masdar as a wholly owned subsidiary in 2006. Masdar is guided by The Abu Dhabi Economic Vision 2030, a programme that drives new sources of income for the emirate and strengthens its knowledge-based economic sectors. Masdar takes a holistic approach to its organisation, with interconnected businesses focussing on Clean Energy Deployment and Sustainable Real Estate. Masdar Institute, an independent, research-driven graduate university, rounds out the organisation.

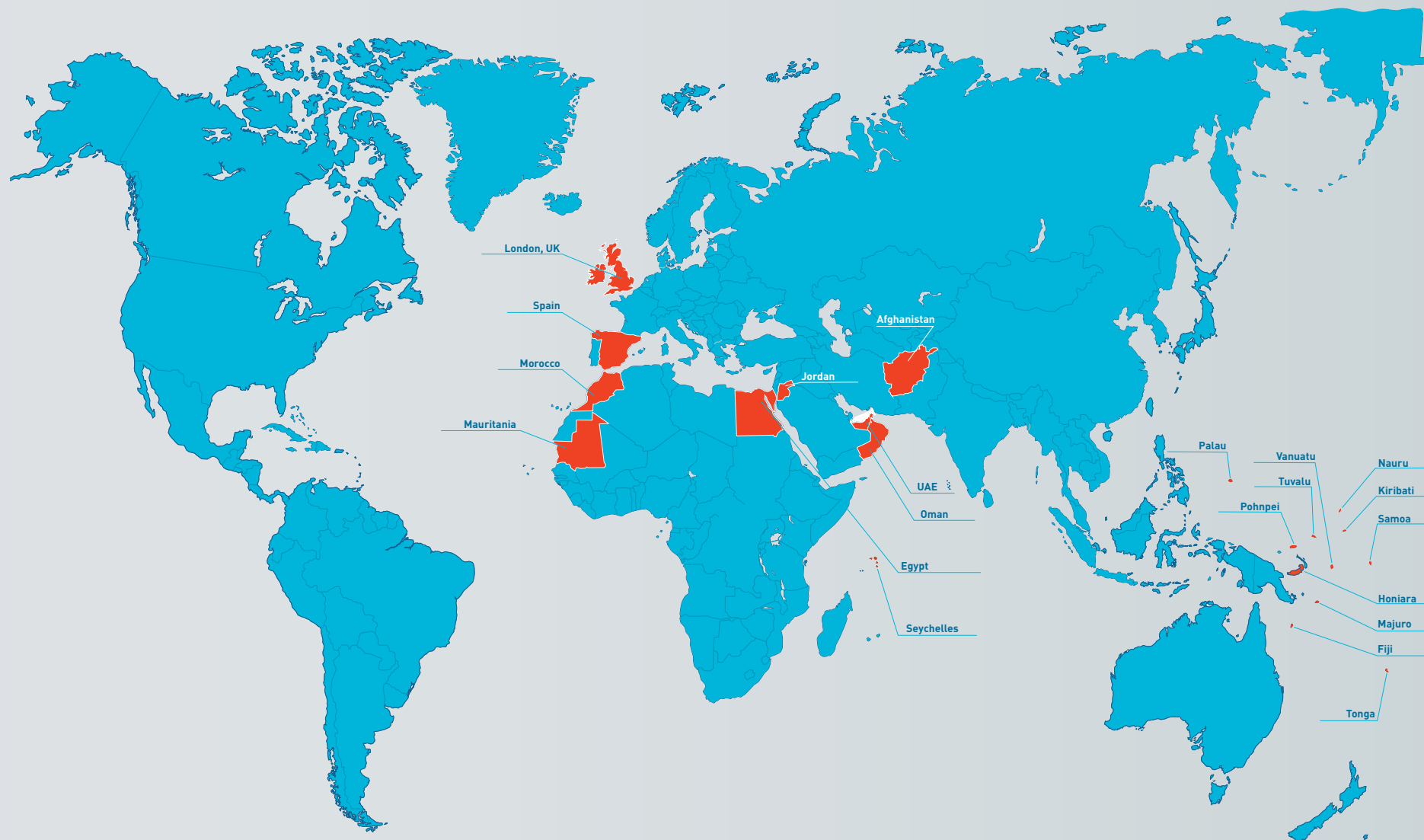
With each unit focused on a key component of the value chain, Masdar operates with the broad scope needed to meet the most pressing sustainability challenges of tomorrow. This keeps Masdar at the global forefront of the clean energy industry as we pursue pioneering and commercially viable technologies and systems.

---

CORPORATE  
OVERVIEW  
**KEY ACTIVITIES**

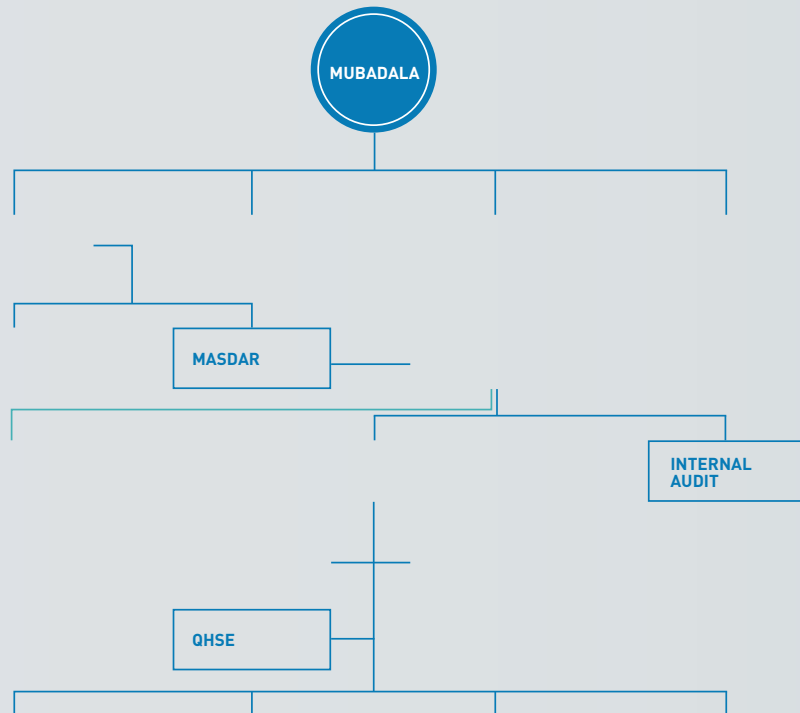
# CORPORATE OVERVIEW

## AREAS OF OPERATION



# CORPORATE OVERVIEW

## HOW WE DELIVER





# CORPORATE OVERVIEW

## OBJECTIVES AND STRATEGIC PRIORITIES

### OVERARCHING OBJECTIVE:

To be a global platform in clean energy and sustainable development while delivering financial returns and helping Abu Dhabi build a knowledge-based economy

	FINANCIAL PERFORMANCE	CONTINUOUS GROWTH	HUMAN CAPITAL	BRANDING	INNOVATION LEADERSHIP
STRATEGIC PRIORITIES	Continue to deliver on our financial commitments to our stakeholders and in doing so provide enhanced returns to our shareholder and sustainable long-term financial performance	Continue to grow & develop a long term self-sustaining business by making considered investments across our core business units	Attract, develop and retain high caliber UAE talent and continue to foster a culture of knowledge sharing, collaboration and accountability	Enhance and protect the Masdar brand as a powerful global showcase of Abu Dhabi's innovative expansion & leadership role in the area of renewable energy and sustainability	Advance innovation in Abu Dhabi through research and development, investment and commercialization of new and innovative renewable energy and sustainable technologies
MEDIUM-TERM TARGETS	<ul style="list-style-type: none"> <li>• 2.7 GW of total installed capacity under management in 2020 by Clean Energy</li> <li>• 1.2m sqm GFA by 2020 ready to be occupied at Masdar City</li> </ul>				

## HOW WE MANAGE OUR SUSTAINABILITY

Masdar Sustainability Policy has been developed to advance sustainability practices within the organization and stands as an embodiment for our organizational ambitions through the following core principles:

- Drive innovation and operational efficiency
- Foster the growth and well-being of our people
- Engage and respond to stakeholder expectations
- Invest in communities and people that support our business
- Act as responsible global citizen



# GOVERNANCE

## MUBADALA CODE OF CONDUCT

### INTEGRITY....

#### .....as we conduct our business

.....

We will conduct our business around the world in accordance with all applicable laws and regulations. In our business dealings, Mubadala will compete but will do so fairly, complying with all laws protecting the integrity of the marketplace. We will not engage in unfair business practices and we will be fully compliant with competition, trade, financial and other international laws and accepted standards. We will meet these commitments by: Preventing improper payments in cash or in kind  
Avoiding market misconduct  
Complying with international trade laws  
Preventing money laundering  
Following competition laws

**We will meet these commitments by:**

- Preventing improper payments in cash or in kind
- Avoiding market misconduct
- Complying with international trade laws
- Preventing money laundering
- Following competition laws

#### .....as we work with our customers, partners, suppliers and governments

.....

We will treat our customers, partners, suppliers, employees and government representatives with respect and will always conduct our business activities with them professionally and in an ethical and compliant manner. We will offer hospitality that is measured and appropriate under the circumstances, protect their confidential information and avoid even the appearance of a conflict of interest that might harm our relationships.

**We will meet these commitments by:**

- Offering and receiving gifts and entertainment appropriately
- Avoiding conflicts of interest Handling competitive information correctly  
Working closely with suppliers
- Working compliantly with governments

#### .....as we protect our company

.....

We will be responsible guardians of Mubadala's resources. We will protect the Mubadala Group reputation and assets, and utilize our time, equipment and information judiciously.

**We will meet these commitments by:**

- Maintaining good controllership
- Being good stewards of assets
- Using our information technology resources appropriately
- Protecting intellectual property and confidential information
- Managing our documents
- Ensuring our people, assets and information are secure
- Communicating externally effectively

#### .....as we work together

.....

We will create a healthy and safe working environment in which we treat each other with the utmost respect. Our values are important to us and are reinforced as we uphold our Code. We are committed to achieving a clarity of purpose and maintaining a sense of pride in and a passion for what we do.

**We will meet these commitments by:**

- Treating each other with respect
- Maintaining a healthy and safe workplace
- Protecting our privacy

#### .....as we support our communities

.....

We will be good corporate citizens in the communities where we live and work. We will be guardians of the environment and will enhance our communities through our service.

**We will meet these commitments by:**

- Protecting the environment
- Serving in our communities

For more information on the Mubadala Code of Conduct Click Here: [http://www.mubadala.com/sites/default/files/asset/Mubadala20%C0C\\_English20%version1\\_202%.pdf](http://www.mubadala.com/sites/default/files/asset/Mubadala20%C0C_English20%version1_202%.pdf)



## GOVERNANCE DECISION MAKING PROCEDURES



# GOVERNANCE DECISION MAKING PROTOCOL

ASSESSMENT CRITERIA	CRITERIA DIMENSIONS	QUESTIONS TO BE ADDRESSED
1 Fit with Masdar strategic objectives	Alignment with Masdar Strategic Objectives	How does the investment fit with the overall Masdar Vision, Mission and Strategic Objectives?
	Alignment with BU strategic Objectives	
2 Financial Attractiveness	Profitability	What are the estimated IRRs, NPV and Payback period? What are the underlying assumptions?
	Impact on Portfolio	What will be the impact to BU & Masdar total NPV, IRRs and projected cash flows and P&L?
	Exit Strategy / Divestment	What will be the impact to BU & Masdar total NPV, IRRs and projected cash flows and P&L?
	Additional Financial Exposure	What is the potential additional financial exposure to Masdar and Mubadala (e.g. Further equity, parent guarantees, loans, etc.)?
	Risk	What are material risks and associated 'Current Risk Levels
3 Rick Profile	RISK MITIGATION	What is the recommended risk 'Treatment strategy' and rationale?
	Scenarios & Sensitivities	How are NPV and IRRs impacted in upside and downside scenarios? How sensitive are NPV and IRRs to changes in material assumptions? What are break-even levels for primary value driving variables?
	Human Capital	Availability of Masdar requisite skills, experience and band-width? If not, can capabilities be made available, and at what cost?
4 Ability to Deliver	Budget Availability	Is requested funding available in approved Masdar and BU budgets?



# GOVERNANCE

## DECISION MAKING PROTOCOL

INVESTMENT LIFECYCLE STAGES	COMMON PARTICIPANTS (AS NEEDED)	DETAILED DESCRIPTION
Pre-appraise (Pre-screening)	<ul style="list-style-type: none"> <li>➤ Business Unit</li> </ul>	<ul style="list-style-type: none"> <li>➤ Conduct pre-screening evaluation of deal/project leads</li> <li>➤ Ensure alignment with BU strategy</li> <li>➤ Estimate resources needed to complete initial due diligence</li> </ul>
Appraise (Initial Due- Diligence)	<ul style="list-style-type: none"> <li>➤ Approved Body(ies)</li> <li>➤ Business Unit</li> <li>➤ Corporate Units</li> </ul>	<ul style="list-style-type: none"> <li>➤ Conduct initial due diligence</li> <li>➤ Develop initial investment case</li> <li>➤ Estimate detailed due diligence budget</li> <li>➤ Evaluate prospective deal partner(s)</li> <li>➤ Obtain approval as per DoA</li> </ul>
Select (Detailed Due Diligence)	<ul style="list-style-type: none"> <li>➤ Approved Body(ies)</li> <li>➤ Business Unit</li> <li>➤ Corporate Units</li> <li>➤ External Advisor(s)</li> </ul>	<ul style="list-style-type: none"> <li>➤ Conduct detailed due diligence</li> <li>➤ Select partner(s) and agree initial terms</li> <li>➤ Develop investment case</li> <li>➤ Obtain approvals as per DoA</li> </ul>
Define (Project Development)		<ul style="list-style-type: none"> <li>➤ Develop detailed engineering design and deal structure</li> <li>➤ Conduct final negotiations and agree on final terms</li> <li>➤ Obtain approvals as per DoA</li> </ul>
Execute (Project Implementation)	<ul style="list-style-type: none"> <li>➤ Approved Body(ies)</li> <li>➤ Project steering committee</li> <li>➤ Business Unit</li> <li>➤ Corporate Units</li> <li>➤ External Advisor(s)</li> </ul>	<ul style="list-style-type: none"> <li>➤ Execute agreements</li> <li>➤ Allocate required resources</li> <li>➤ Develop/construct project</li> </ul>
Financial Structuring & Execution		<ul style="list-style-type: none"> <li>➤ Conduct final negotiations and agree on final terms</li> <li>➤ Obtain approvals as per DoA</li> <li>➤ Execute relevant agreements</li> <li>➤ Allocate required resources</li> <li>➤ Execute deal/transaction</li> </ul>
Operate		<ul style="list-style-type: none"> <li>➤ Manage operations of asset</li> <li>➤ Conduct semi-annual valuations &amp; returns analysis</li> <li>➤ Identify, quantify and execute value creation opportunities</li> </ul>
Hold	<ul style="list-style-type: none"> <li>➤ Approved Body(ies)</li> <li>➤ Project steering committee</li> <li>➤ Business Unit</li> <li>➤ SPV / NewCo. / JV management</li> <li>➤ Corporate Units</li> <li>➤ External Advisor(s)</li> </ul>	<ul style="list-style-type: none"> <li>➤ Monitor investment performance investment performance and managements' activities</li> <li>➤ Conduct semi-annual valuations &amp; returns analysis</li> <li>➤ Identify, quantify and execute value creation opportunities</li> </ul>
Divest		<ul style="list-style-type: none"> <li>➤ Conduct investment case for divestment</li> <li>➤ Obtain approvals as per DoA</li> <li>➤ Execute divestment</li> </ul>

# GOVERNANCE DECISION MAKING PROTOCOL

## PORTFOLIO RISK MANAGEMENT

Investment risk at Masdar is managed through active Portfolio Risk Management (PRM) functions and processes, designed to:

- Enhances Masdar’s ability to preserve existing and future value and returns
- Identify and mitigate potential risk exposures across assets and portfolios through rigorous quantitative and qualitative best practice methodologies..
- Capture risks for Projects as they move to the next stage of the investment lifecycle
- Rate risks based on likelihood and consequence if it were to materialize and quantified based on the impact to value and returns (NPV and IRR).
- Generate a PRM dashboard accessible to those involved in the PRM process and that reflect Masdar’s risk escalation levels.
- Help monitoring and reporting to ensure that risk management activities are embedded in Masdar’s management decision making.

## INTERNAL AUDIT

The Internal Audit department assists the company in accomplishing its objectives by bringing a systematic, disciplined approach to evaluate risks to ensure:

- Risks management is 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.

## PORTFOLIO RISK MANAGEMENT GOVERNANCE

RISK APPETITE | RICK PROFILING | RICK SCORING

## INVESTMENT RISKS

Critical investment risks that exceed the investment capacity (i.e. risk appetite) throughout the investment lifecycle are escalated to BU Level for consideration and treatment.

## BUSINESS UNIT RISKS

Critical investment and BU related risks that exceed the BU risk appetite are escalated to Senior Management for consideration and treatment.

## MASDAR CORPORATE RISKS

Masdar Risk capacity

## MASDAR INVESTMENT LIFECYCLE



# PERFORMANCE MANAGEMENT CORPORATE

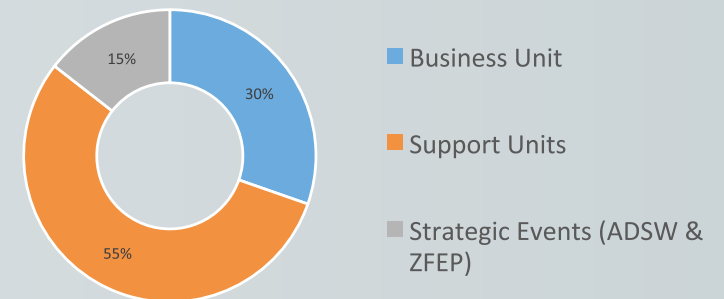
## PERFORMANCE TRACKING:

MASDAR SCORE BREAKDOWN	OPERATIONAL SCORE	FINANCIAL SCORE	COMPLIANCE SCORE	OVERALL WEIGHTING
Masdar Clean Energy <sup>1</sup>	35%	55%	10%	50%
Sustainable Real Estate <sup>2</sup>	35%	55%	10%	32.5%
Sustainability	50%	40%	10%	1.25%
Marketing & Corporate Communications	60%	30%	10%	1%
Quality, Health, Safety & Environment	90%	-	10%	1%
Corporate Strategy & Finance	90%	-	10%	1%
Human Capital	90%	-	10%	1%
Finance, Treasury & Insurance	45%	-	10%	1%
Corporate Finance	90%	-	10%	1%
Information & Communications Technology	90%	-	10%	1%
Procurement & Contracts	90%	-	10%	1%
General Services	90%	-	10%	1%
Legal	90%	-	10%	1%
ZFEP	90%	-	10%	1.25%

## TOTAL OPERATIONAL KPIs:

636

## 2016 Operational KPIs Breakdown



<sup>1</sup> Previous overall weighting divided between Clean energy (30%) and Special Projects (20%)

<sup>2</sup> Previous overall weighting divided between Masdar City (20%) and Freezone (12.5%)

# PERFORMANCE MANAGEMENT TOOLS AND SYSTEMS

## QHSE MANAGEMENT SYSTEM:

Masdar supports and has adopted the values of quality, health, safety and the environment across the entire organization, with the aims of:

1. Eliminating defective products and unsatisfactory services;
2. Protecting the health and safety of employees, contractors, customers and the community at large;
3. Contributing positively towards protecting the environment for sustainable development.

## INVESTMENT LIFECYCLE MANAGEMENT SYSTEM:

The Investment Lifecycle Management system is a platform that can be used to automate the investment lifecycle process, designed to:

- Streamline the ILM process;
- Create a virtual collaborative environment that can enable teams to interact during the development of investment cases;
- Create an easily accessible, comprehensive compendium of historical information related to investments;
- Allow representatives to track and manage investments effectively through the lifecycle.

## MASDAR SUSTAINABILITY SPECIFICATIONS:

The specifications are designed as tools support contractors and third party developers in meeting the overall objectives and goals of Masdar City, the relevant specifications include, but not limited to, the following:

- **Section 013530** - CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN (CEMP); project-wide requirements for environmental management.
- **Section 016105** - RESTRICTED MATERIALS; List of prohibited chemicals and materials.
- **Section 017418** - CONSTRUCTION WASTE MANAGEMENT PLAN (CWMP); Construction waste management and recycling of materials.
- **Section 018114** - SUSTAINABILITY KEY PERFORMANCE INDICATORS; Implementation plan and metrics for key performance indicators.
- **Section 018116** - SUSTAINABILITY MANAGEMENT SYSTEM.
- **Section 018117** - SUSTAINABILITY DEFINITIONS.

Masdar uses a world leading sustainability management tool (SoFi) to capture, monitor and manage its sustainability performance across its portfolio. The protocols of data collection

CRITERIA	PERFORMANCE TARGET	SIEMENS HQ	IRENA HQ
<b>ENERGY:</b> Energy Demand reduction	40%	46%	42%
<b>ENERGY:</b> Provision for Renewable Energy	75% of hot water	75% of hot water	75% of hot water + 8.7% from PV
<b>WATER:</b> Interior water demand reduction	30%	36% (Estidama) 58% (LEED)	48% (Estidama)
<b>MATERIALS:</b> Reduction in embodied carbon in construction	550 kgCO <sub>2</sub> e/m <sup>2</sup>	530 kgCO <sub>2</sub> e/m <sup>2</sup>	410 kgCO <sub>2</sub> e/m <sup>2</sup>
<b>ESTIDAMA:</b> Minimum rating under Pearl building rating system	3 Pearl Rating	3 Pearl Rating & LEED Platinum	4 Pearl Rating

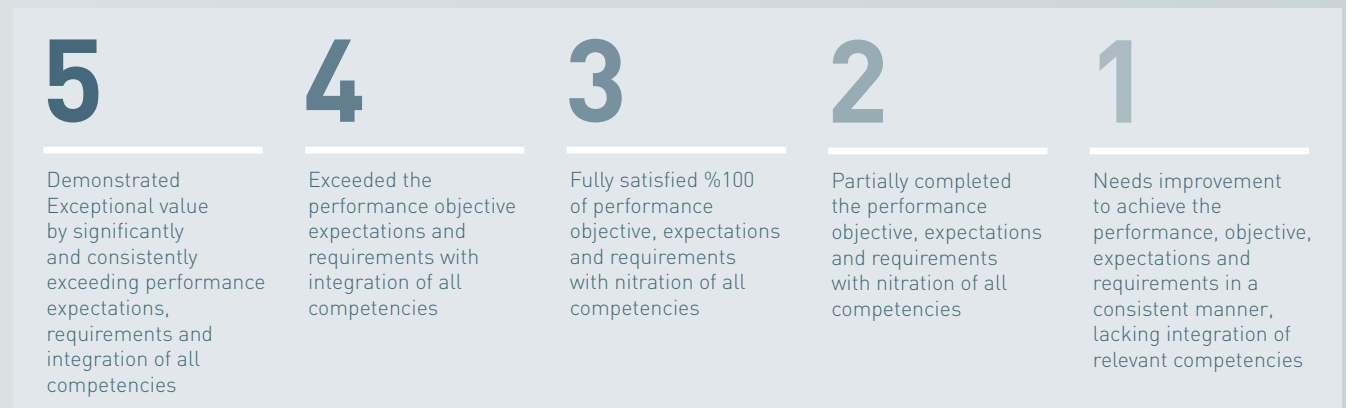
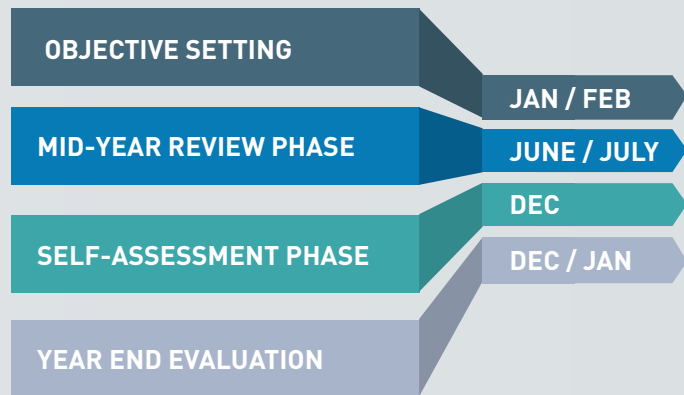
# PERFORMANCE MANAGEMENT EMPLOYEES

THE EMPLOYEE PERFORMANCE MANAGEMENT SYSTEM IS THE BASIS OF MASDAR'S RESULTS ORIENTED PERFORMANCE DRIVEN CULTURE. THE PURPOSE OF PERFORMANCE MANAGEMENT FOR EMPLOYEES IS TO:

- Align employee goals with Masdar's business objectives and strategic plans
- Use objective and quantifiable measurements when planning or evaluating employee performance.
- Monitor and provide feedback to employees on their performance during the performance cycle.
- Improve employee performance through structured development activities.
- Maintain the link between employee performance with career progression and reward.

THE EMPLOYEE PERFORMANCE MANAGEMENT SYSTEM HAS TWO MAIN FUNCTIONS:

- Setting organizational and employee objectives on a bi-annual basis
- Setting a competency framework to be used for defining acceptable corporate behaviours



MASDAR RATING SCALE



# ENGAGEMENT STAKEHOLDER MAPPING

## STAKEHOLDER DEFINITION BREAKDOWN

Partner	Strategic	Entity with a commercial contract attached to a project / project finance alignment
	Key	Entity with a MoU agreement to develop key relationships, resources or project development
Tenant	Strategic	Anchor tenant that advances the Masdar City technology cluster and incubator agendas
	Basic	Entity with a lease agreement
Interest Party / Individual	Strategic	Entity or individual of interest that falls within the strategy or business plan scope or advances brand or footprint
	Basic	Entity or individual with an undefined scope for business alignment

## STAKEHOLDER ENGAGEMENT MATRIX

STAKEHOLDER CATEGORIES		Board Meetings / C-Level Visits	Monthly Progress Meetings	Business Development Meetings	Working Group Platforms	Corporate Presentation / Update	Customer Relations Management	Masdar Experience Tours	Audits/ Surveys	Social Media	Newsletters / Mail Outs	ADSW Participation
Partner	Strategic	X	X	X	X	X		X	X	X	X	X
	Key	X	X	X	X	X						
Tenant	Strategic	X		X		X	X	X	X	X	X	X
	Basic						X		X	X	X	
Service Provider / Vendor									X			
Customer				X	X		X		X	X	X	X
Financial Institution		X			X							X
Academic Institution										X	X	
Regulatory / Government Entity					X	X		X	X	X	X	X
Non-Governmental Organisation						X		X		X	X	
Local Community										X	X	
Interest Party	Strategic	x				x		X		X	X	X
	Basic							X				



# ENGAGEMENT STAKEHOLDER MANAGEMENT MATRIX

STAKEHOLDER ENGAGEMENT MATRIX				
STAKEHOLDER CATEGORIES				
Commercial Stakeholder	Partner	Working Groups, Monthly Progress Meetings, Conferences / Panels, MoU, C-Level Meetings, Assigned BU Focal Point, CRM activities, Masdar Experience tours	Adherence to international standards Demonstration of Ethical & Best Practices	Governance, Performance Management, Workforce, Economic Development, Environmental, Supply Chain
	Tenant	Tenant Forums/Meetings, Helpline, Engagement Activities, Audits, Surveys, CRM activities, Newsletters, Social media, Masdar Experience tours	Access to Business, State-of-the-art Facilities, Networking Opportunities, Performance data	Economic Development, Products & Services, Stakeholder Engagement
	Service Provider / Vendor	Progress Meetings, Service/Budget Reviews, Procurement Process, Audits, Surveys	Supply Chain management, Policies and Procedures recognition of performance	Performance Management Supply Chain
	Customer	Progress Meetings, Service/Budget Reviews, Business Development Activities, Conferences/panels, Website, Social media, Newsletters, Masdar Experience tours	Policies & Procedures, Showcase Best Practices Supply Chain Practices, Performance data	Products and Services Economic development, Community Involvement
Relational Stakeholder	Financial Institution	Progress Meetings, Service/Budget Reviews, Audits, Surveys	Policies and Procedures, Demonstration of Ethical & Best Practices	Governance, Performance Management, Economic Development,
	Academic Institution	MoUs, Working Groups, Masdar Experience tours Conferences / Panels, Social Media	Advancements of industry issues, Demonstration of Ethical & Best Practices, Performance data	Products and Services, Economic development, Supply Chain, Environmental, Workforce
	Regulatory / Government Entity	C-Level Meetings, Working Groups, MoUs, Progress Meetings Conferences / Panels, Social media	Compliance efforts, Continuous disclosure, lessons learned, auditing procedures	Products & Services, Performance Management, External Assurance, Governance
	Non-Governmental Organisation	Conferences / Panels, Newsletters, Social Media, Masdar Experience Tours	Targets & Commitments, Past achievements of targets, Community programmes, Outreach	Performance Management, Workforce Stakeholder Engagement,
	Local Community	Social media, engagement events, Masdar Experience tours,	Environmental & social impacts, Benefits of amenities, Performance data, Awareness	Community Involvement, Economic development, Stakeholder Engagement
	Interest Party	Community Events, Social media, Masdar Experience Tours, Website	Demonstration of best practices, Performance data Local services	Products & Services, Environmental, Community involvement
Internal Stakeholder	Shareholder(s)	Board Meetings, C-Level meetings, Progress meetings, Quarterly reports, Engagement events, working groups,	Portfolio Progress, Social impacts, Emiratization, Adherence to international standards, Demonstration of Ethical & Best Practices	Economic Development, Governance, Performance Management, Workforce, Environmental, Supply Chain
	Employees	Progress Meetings, Engagement Events, Surveys, Intranet/Emails	Job Security, Career development, Recognition of work, Portfolio progress, performance data	Performance Management, Stakeholder Engagement, Workforce, Environmental, Community Involvement

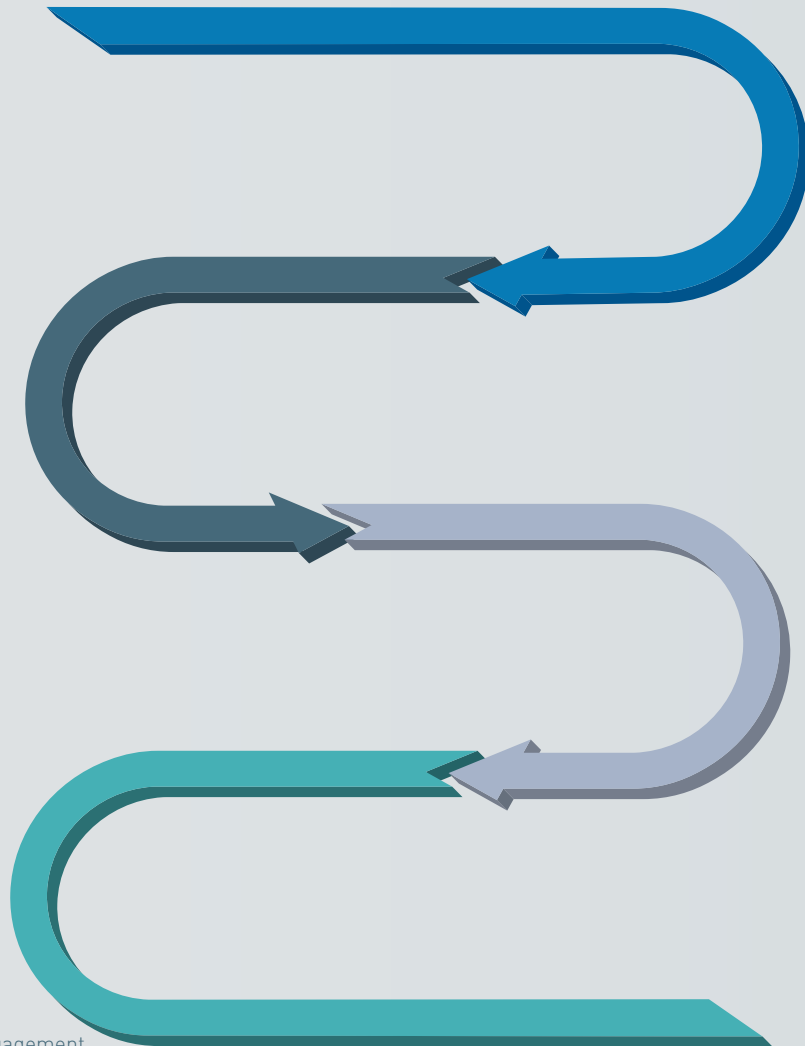
# ENGAGEMENT

## GRI G4 MATERIALITY ANALYSIS

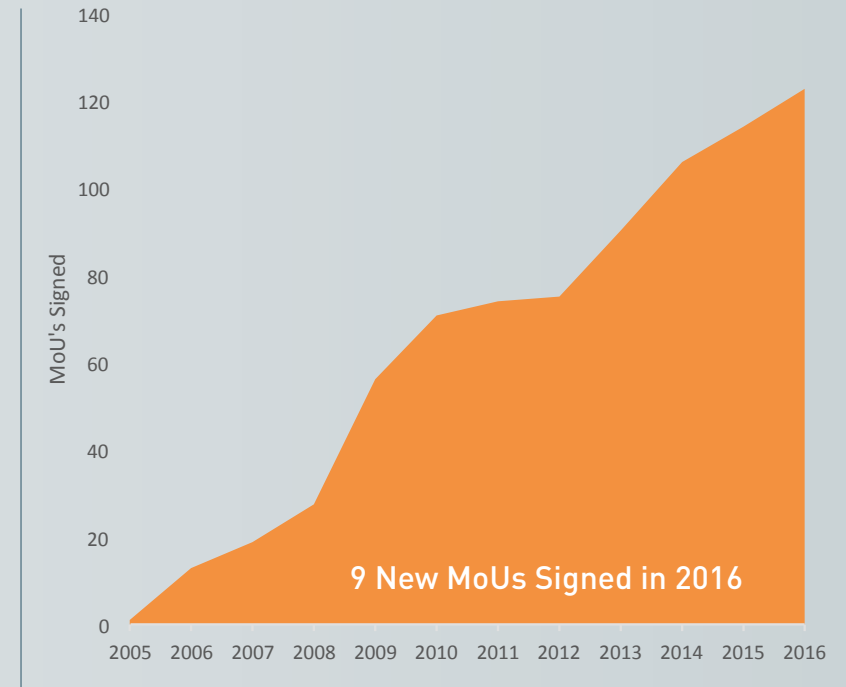
High Materiality	MASDAR CORPORATE				MASDAR BUSINESS UNITS AND AFFILIATES							
	Low Materiality	Quality, Health, Safety & Env.	Human Capital & Support Services	Sustainability & Brand	Sustainable Real Material Aspects Estate	Clean Energy						
Outside of Reporting Boundary for 2016 report	Special Projects					Al Riyadhha	Shams Power Co.	Torresol	London Array	Dudgeon Offshore Wind Ltd.	Jordan Wind Project Company	Masdar Institute
Masdar Ownership Percentage						49%	80%	40%	20%	35%	31%	
<b>Economic</b>												
Economic Performance												
Market Presence												
Indirect Economic Impacts												
Procurement Practices												
<b>Environmental</b>												
Materials												
Energy												
Water												
Biodiversity												
Emissions												
Effluents and Waste												
Compliance												
Transport												
Supplier Environmental Assessment												
Labor Practices Grievance Mechanisms												
<b>Social / Labor Practices and Decent Work</b>												
Employment												
Labor/Management Relations												
Occupational Health and Safety												
Training and Education												
Diversity and Equal Opportunity												
Supplier Assessment for Labor Practices												
Labor Practices Grievance Mechanisms												
<b>Human Rights</b>												
Investment												
Non-discrimination												
Child Labor												
Forced or Compulsory Labor												
Assessment												
Supplier Human Rights Assessment												
Human Rights Grievance Mechanisms												
<b>Society</b>												
Local Communities												
Anti-corruption												
Anti-competitive Behavior												
Supplier Assessment for Impacts on Society												

# ENGAGEMENT

## STAKEHOLDER ENGAGEMENT ACTIVITIES



SP = Speaking engagement  
MP = Media engagement

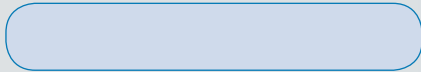


1. Nareva Holding
2. ADNOC
3. ALJ Global Energy PMCC
4. General Electric
5. Abu Dhabi Education Council
6. BYD Auto Industry Company
7. Westcourt Real Estate
8. Environment Friends Society
9. Grupo Gransolar

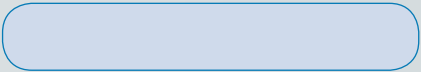
# ENGAGEMENT

## STAKEHOLDER ENGAGEMENT ACTIVITIES

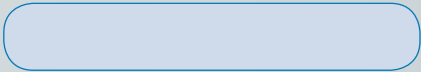
### Visits/Tours



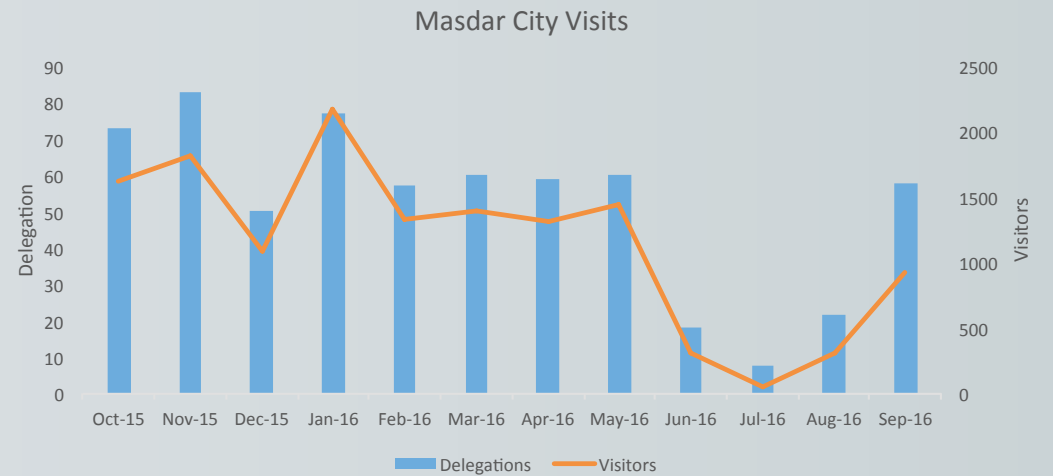
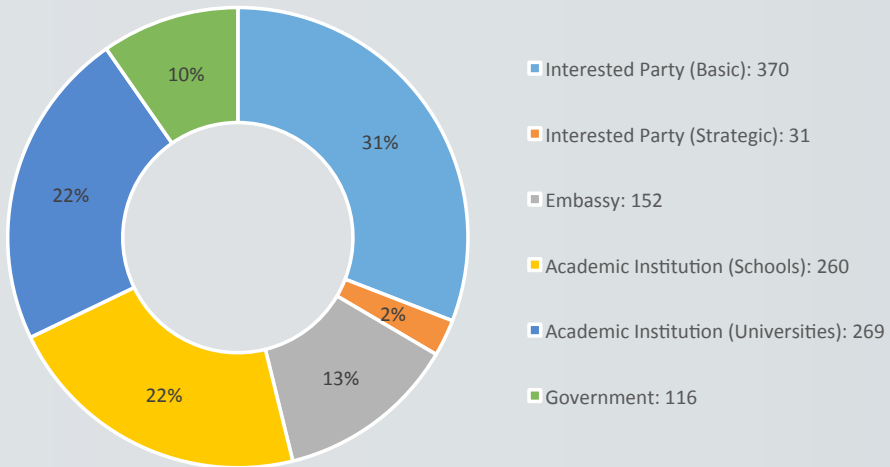
US Vice President Joe Biden  
Visit to Masdar City  
March 2016



HH Sheikh Mohammed bin Rashid Al Maktoum  
Visit to Masdar City  
August 2016



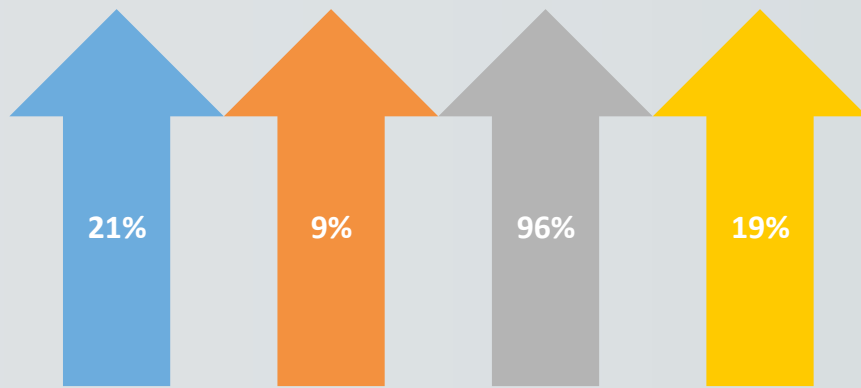
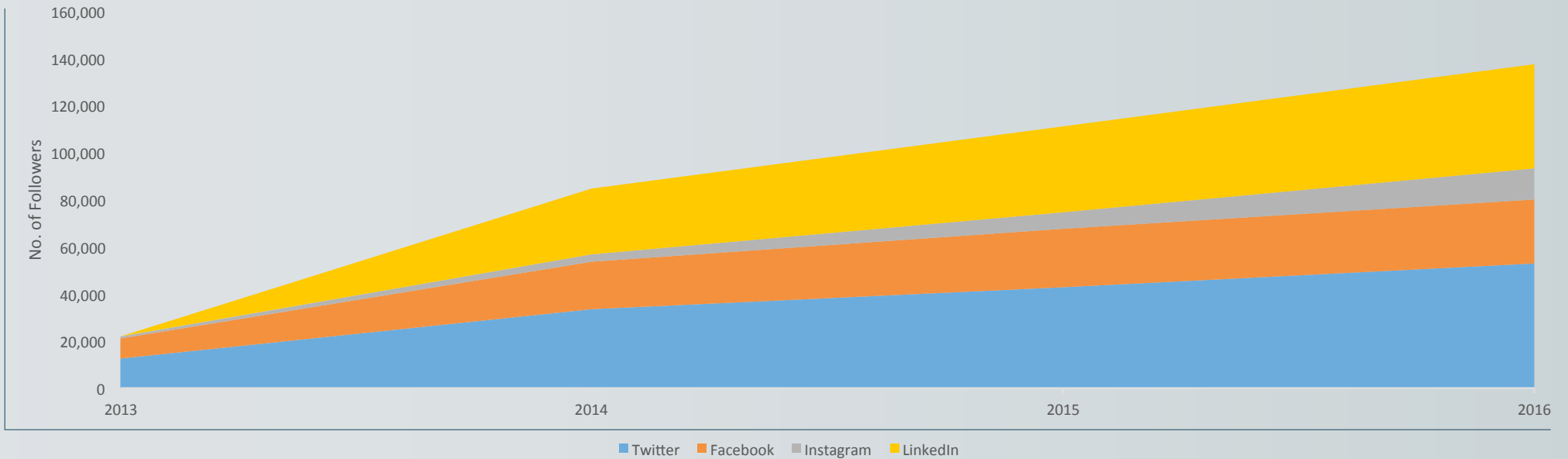
HRH The Prince of Wales  
Visit to Masdar City  
November 2016





# ENGAGEMENT

## SOCIAL MEDIA ENGAGEMENT ACTIVITIES



Twitter Facebook Instagram LinkedIn

PLATFORM GROWTH RATES - 2016

### Tweets Analytics

**2,646** tweets during reporting period

- 10.89** tweets per day
- 1,092** mentions (0.41 per tweet)
- 718** links (0.27 per tweet)
- 1,374** tweets retweeted (51.93%), Total = **7,934** (5.77 retweets per tweet)
- 1,388** tweets favorited (52.46%), Total = **7,291** times (5.25 per tweet)
- 16** replies (1%)

### Hashtags most used

#masdarcity	149
سولار أمبلس	108
#uae	102
#renewables	77
#solar	69
مصدر	139
#مدينة مصدر	105
#abudhabi	81
#masdar	70
الإمارات	50

# ENGAGEMENT

## EMPLOYEE ENGAGEMENT ACTIVITIES

### KEY HIGHLIGHTS OF THE 2015 ENGAGEMENT RESULTS:

- Key strengths of Masdar according to employees: impact on the community, understanding of the vision, adoption of employees' ideas, employees have tools and resources to work, managers support staff and effective management of Masdar as a whole
- Key areas for consideration according to employees: manpower, career progression and training, performance management, and the link between performance and reward

<b>SURVEY FACTS</b>	<b>20 DAYS OF SURVEY ADMINISTRATION</b>	<b>SURVEY PERIOD: 10 – 30 NOVEMBER 2015</b>
---------------------	---	---

### OVERALL PARTICIPATION RATE AT MASDAR

**66% IN 2015 | 77% IN 2014 | 55% IN 2013**

ENGAGEMENT (COMMITTED AND MOTIVATED STAFF) RESULTS FOR 2015		ENABLEMENT (EFFICIENT AND PRODUCTIVE STAFF) RESULTS FOR 2015	
<b>2015</b>	<b>71%</b>	<b>2015</b>	<b>69%</b>
<b>2014</b>	<b>73%</b>	<b>2014</b>	<b>69%</b>
<b>2013</b>	<b>72%</b>	<b>2013</b>	<b>60%</b>

ENGAGEMENT IS 71% A DROP OF 2% FROM LAST YEAR

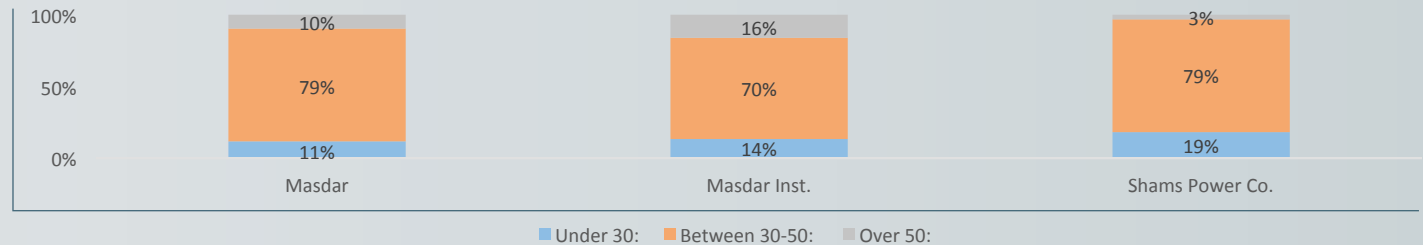
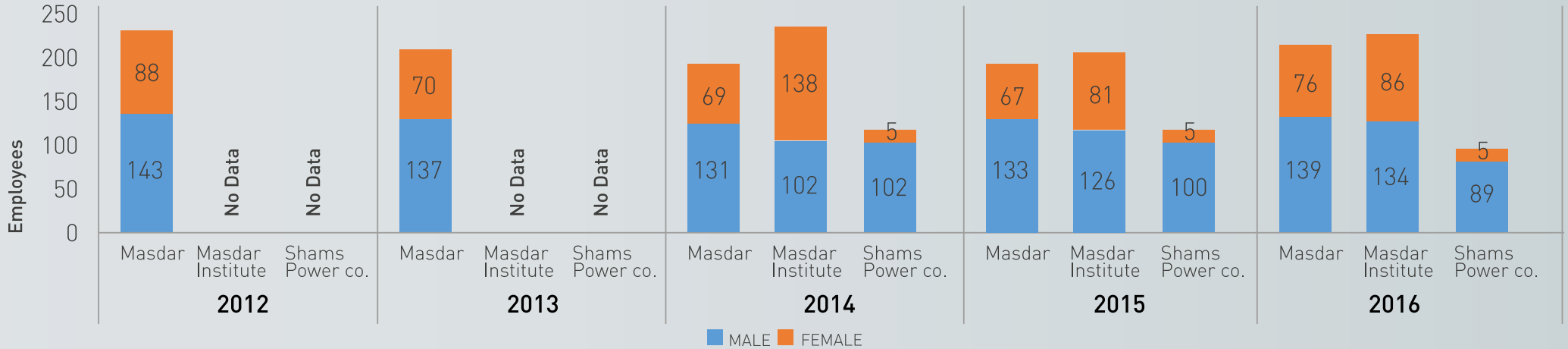
ENABLEMENT IS 69% HENCE NO CHANGE FROM LAST YEAR

### KEY TAKEAWAYS

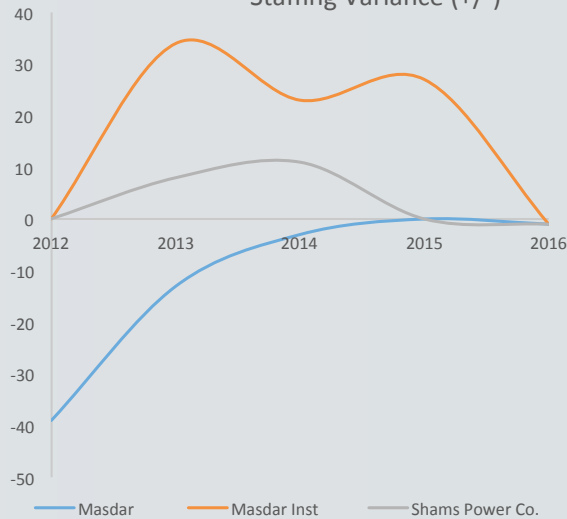
- High perception of the impact of Masdar has on the community
- Good understanding of the vision, and belief in the adoption of one's own ideas
- Staff experience less barriers, whereby we see strong results around:
  - Staff having the tools and resources to get their jobs done
  - Managers supporting staff
  - Overall effective management of Masdar

# WORKFORCE OUR EMPLOYEES

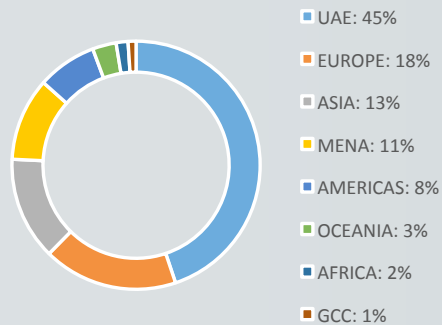
## Employee Breakdown



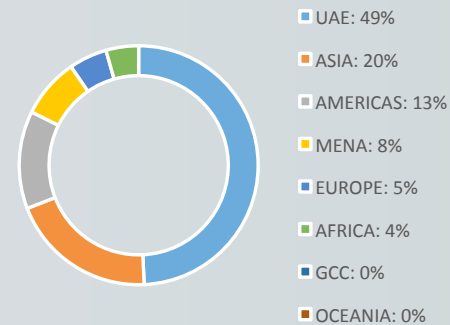
## Staffing Variance (+/-)



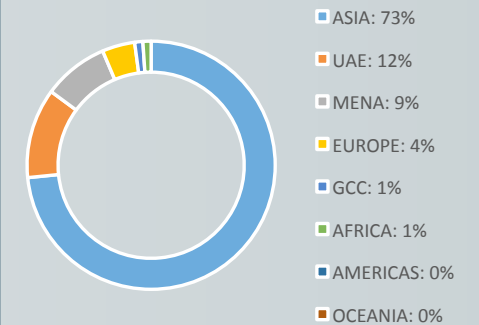
## Masdar Staff by Origin



## Masdar Inst. Staff by Origin



## Shams Power Co. by Origin



# WORKFORCE

## OUR EMPLOYEE BENEFITS

### FULL TIME EMPLOYEE BENEFITS:

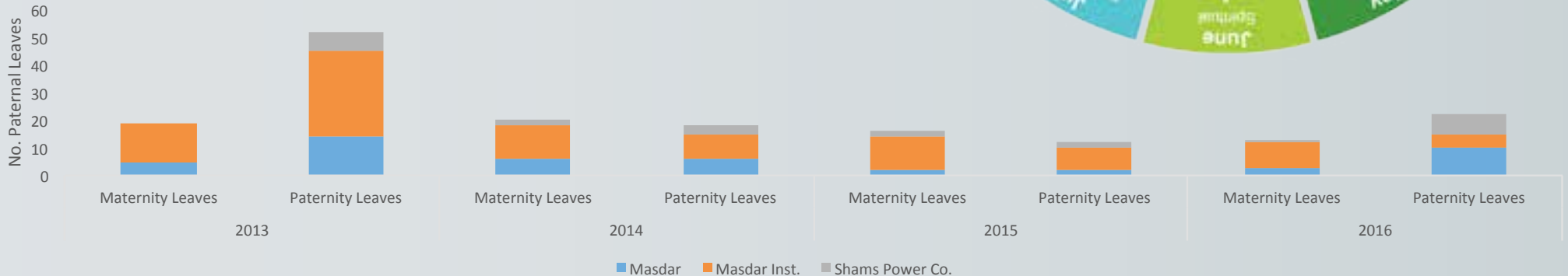
- Salary
- Parental Leave
- Annual Leave
- Health Insurance
- Life Insurance
- Child Education Assistance
- UAE/GCC national pension scheme
- Housing Allowance
- Furniture Allowance
- Vacation Travel Allowance
- Repatriation tickets for expats
- Visa/medical expenses for employee, spouse and children
- Tuition Assistance

### TEMPORARY EMPLOYEE BENEFITS:

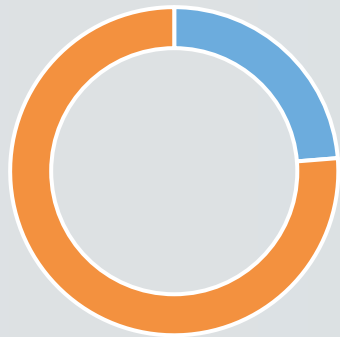
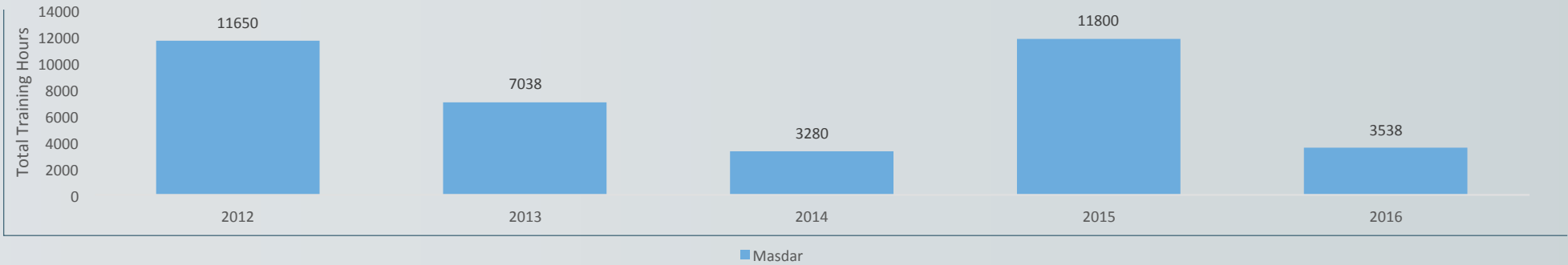
- Salary
- Life insurance
- Health care
- Disability / invalidity coverage,
- Maternity leave
- Nursing hours
- End of service benefits
- Various types of leave including sick leave, authorized unpaid leave

### INTERNSHIP BENEFITS:

- Internship Salary for UAE Nationals only



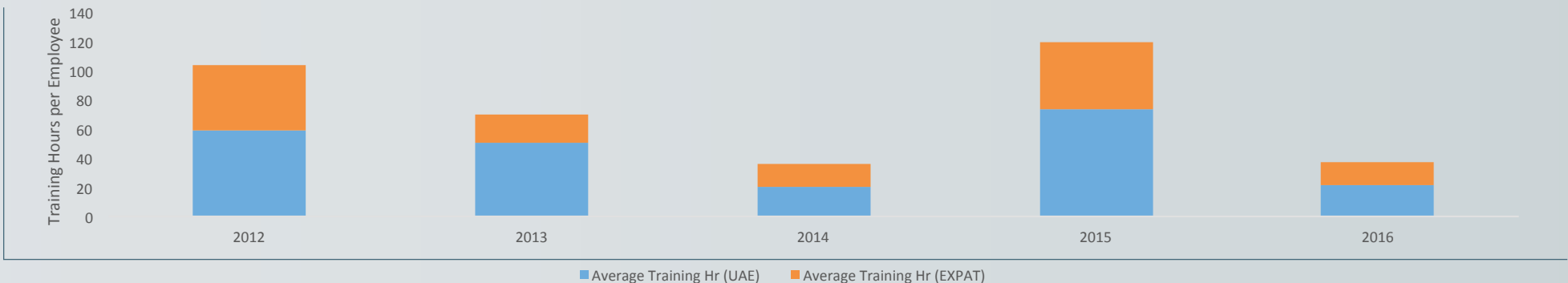
# WORKFORCE TRAINING PROGRAMMES



Masdar Training Courses by type

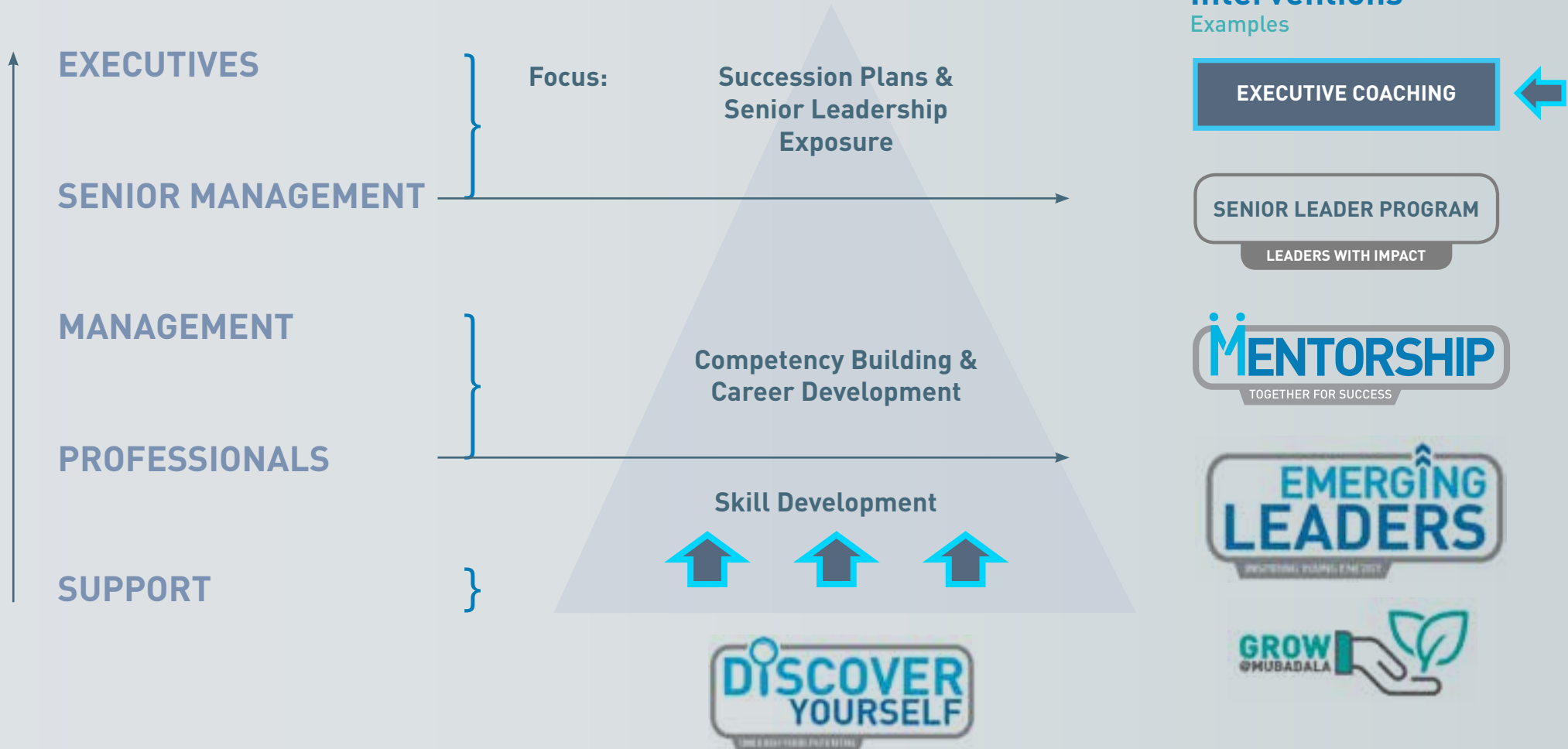
- Internal Courses: 14
- External Courses: 45

Masdar 2016 Training Calendar			
Jan	Conducting Effective Interviews	June	Managing Performance & Development
Feb	Advanced Business Writing	July	
Mar	Financial Modelling	Aug	ISO Internal Auditor
April	Public Speaking & Presentation	Sept	Finance for Non-Finance Professional
May	Think on your Feet		



# WORKFORCE TRAINING PROGRAMMES

## MY CAREER JOURNEY



## WORKFORCE TRAINING PROGRAMMES

# MY CAREER JOURNEY




### VISION

The “EMERGING LEADERS – Inspiring Young Energy” program aims to be the flagship program for Masdar designed to attract and develop the brightest young UAE National talents and fast-track them for future leadership roles.

The structured program is designed to develop talented, ambitious UAE Nationals and help them grow to their full potential.

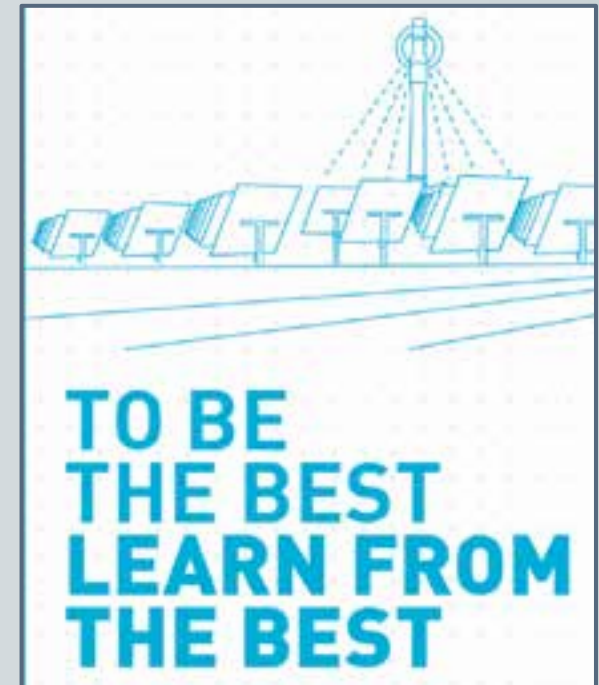
### OBJECTIVES

- Create strong Masdar Employer Brand through unique and challenging program
- Prepare participants to assume a leadership role in a short period of time
- Groom talents internally
- Give them exposure to the different parts of the business and the C-level
- Create a pool of role models
- Foster community among participants
- Shape Masdar cultural ambassadors to spread the Masdar spirit and values across the organization

## WORKFORCE TRAINING PROGRAMMES



- Revamped the mentorship program to ensure high-impact
- Developed branding
- Identified 17 experienced and highly-skilled Masdarians as mentors
- Recommunicated the program to the organization
- Target Audience: UAE Nationals (Support & Professional Level)
- Ensured meaningful and cross-departmental/divisional mentor-mentee partnerships for all New Professionals and interested others (13 pairs of mentors and mentees)





# WORKFORCE

## OCCUPATION HEALTH & SAFETY MANAGEMENT



**4**

TOTAL LOST TIME INJURIES

**0.60**

LTIFR<sup>1</sup> DURING REPORTING PERIOD

**4.98**

TRCF<sup>2</sup> DURING REPORTING PERIOD

**25**

TOTAL MEDICAL TREATMENT CASES

**363**

TOTAL NEAR MISS REPORTS

**390**

TOTAL HEALTH & SAFETY COMMITTEE MEETINGS

**54**

TOTAL HEALTH & SAFETY AWARENESS CAMPAIGNS

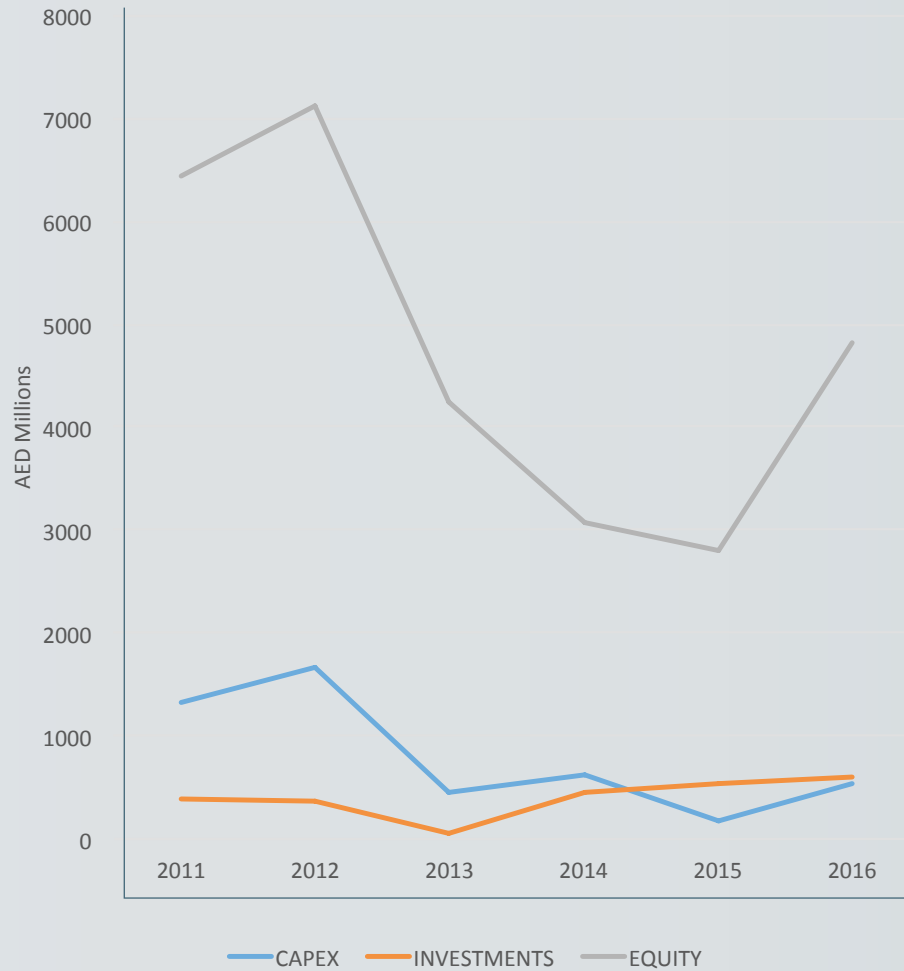
**78**

TOTAL HEALTH & SAFETY AWARDS ISSUED

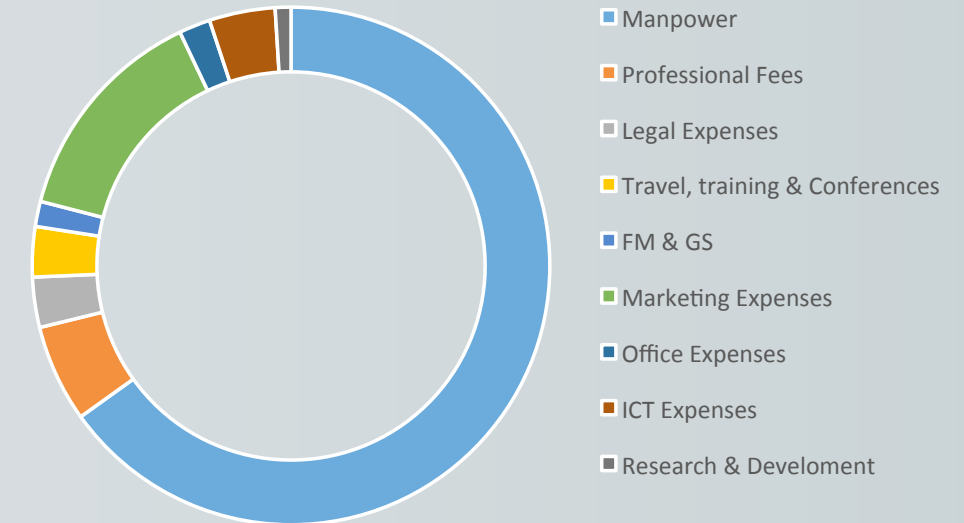
<sup>1</sup> Lost time injury frequency rate

<sup>2</sup> Total report case frequency

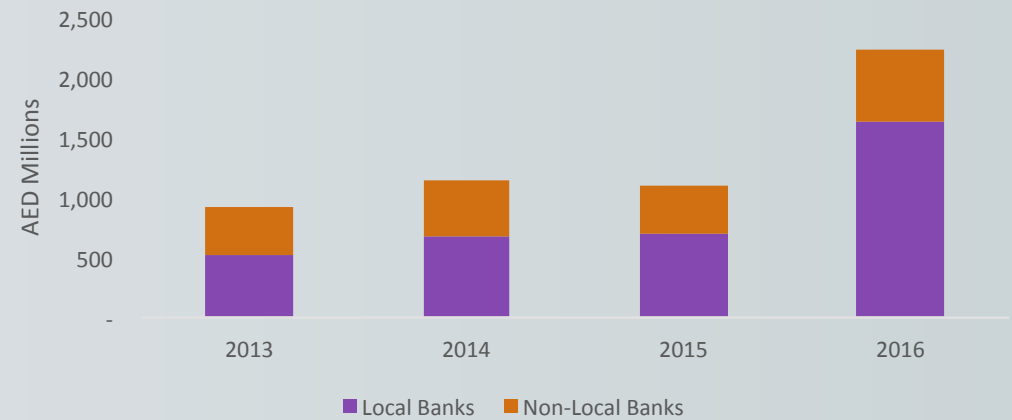
# ECONOMIC DEVELOPMENT FINANCIAL PERFORMANCE



OPEX Distribution

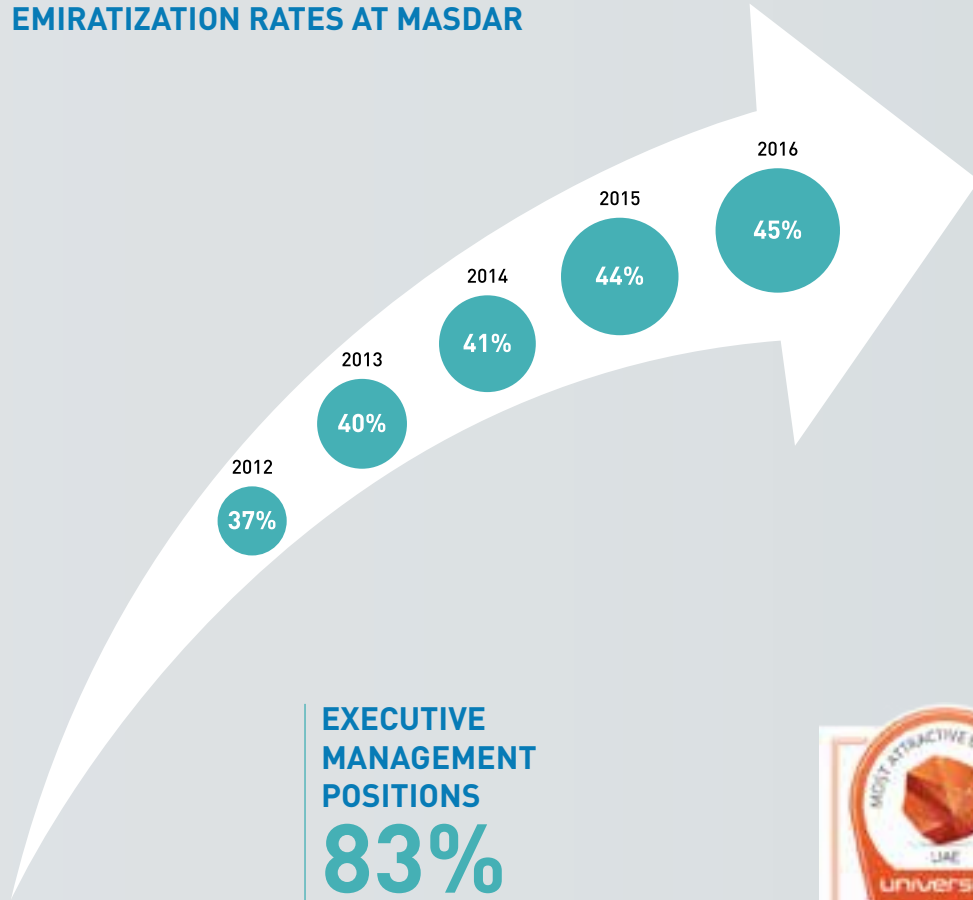


Supporting local economy



# ECONOMIC DEVELOPMENT SUPPORTING LOCAL EMPLOYMENT

## EMIRATIZATION RATES AT MASDAR

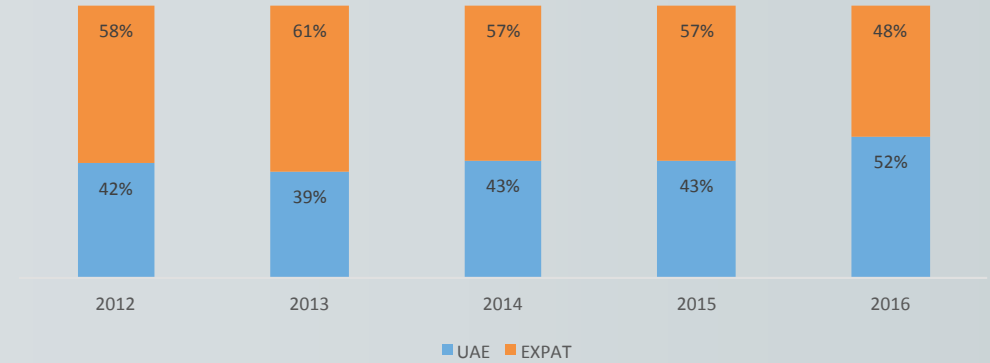


**EXECUTIVE  
MANAGEMENT  
POSITIONS**  
**83%**  
UAE NATIONALS



**2016**  
**38%**  
UAE GRADUATES

## MASDAR INSTITUTE STUDENT BREAKDOWN

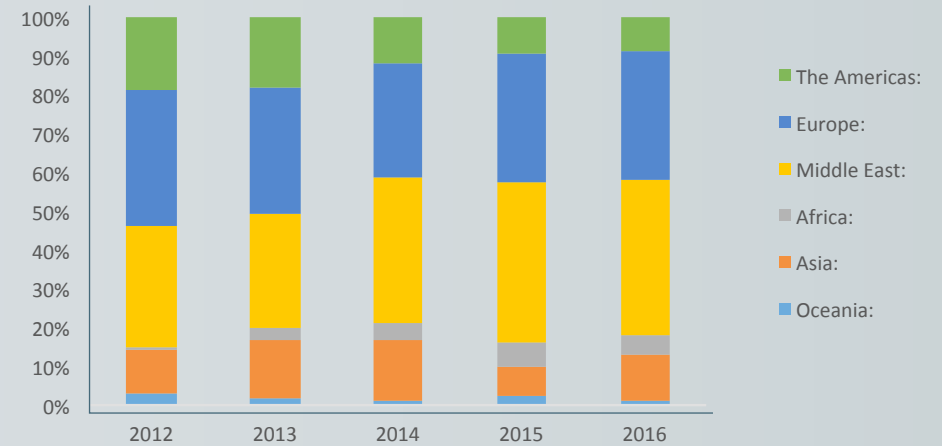


# ECONOMIC DEVELOPMENT SUPPORTING NEW BUSINESS

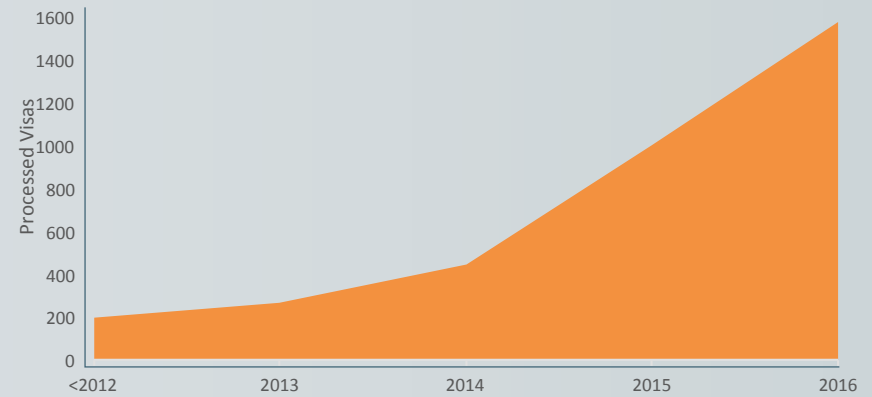
## REGISTERED FREEZONE COMPANIES IN MASDAR CITY



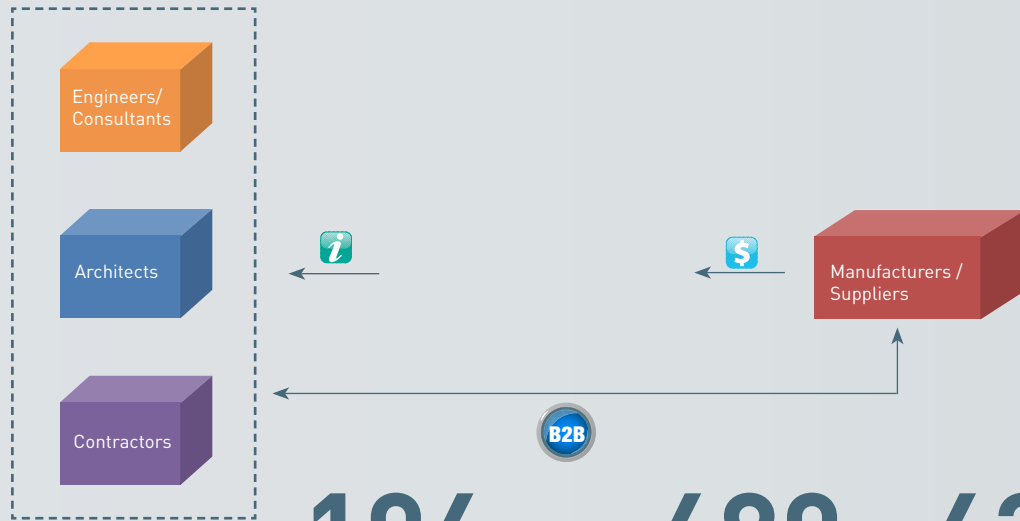
## REGISTERED COMPANIES BY ORIGIN



## CUMULATIVE FREEZONE VISAS PROCESSED



# ECONOMIC DEVELOPMENT SUPPORTING NEW BUSINESS



**106**

TOTAL NUMBER OF COMPANIES

**680**

TOTAL PRODUCTS

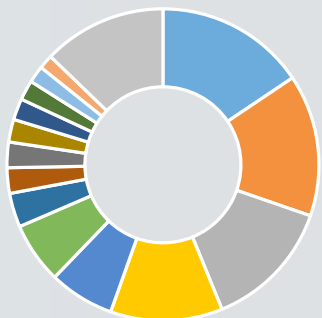
**63**

TOTAL TRUSTMARK CERTIFIED PRODUCTS

CUMULATIVE UNIQUE VISITORS  
WWW.THEFUTUREBUILD.COM



## TOTAL LISTED PRODUCTS BREAKDOWN



- LED Lighting: 106
- Paints & Coatings: 100
- Concrete: 92
- Flooring: 79
- Insulation: 46
- Equipment: 43
- Water Fixtures: 24
- Gypsum Board: 18

Sessions

**187,010**



Users

**155,250**



Pageviews

**276,604**



Pages / Session

**1,48**



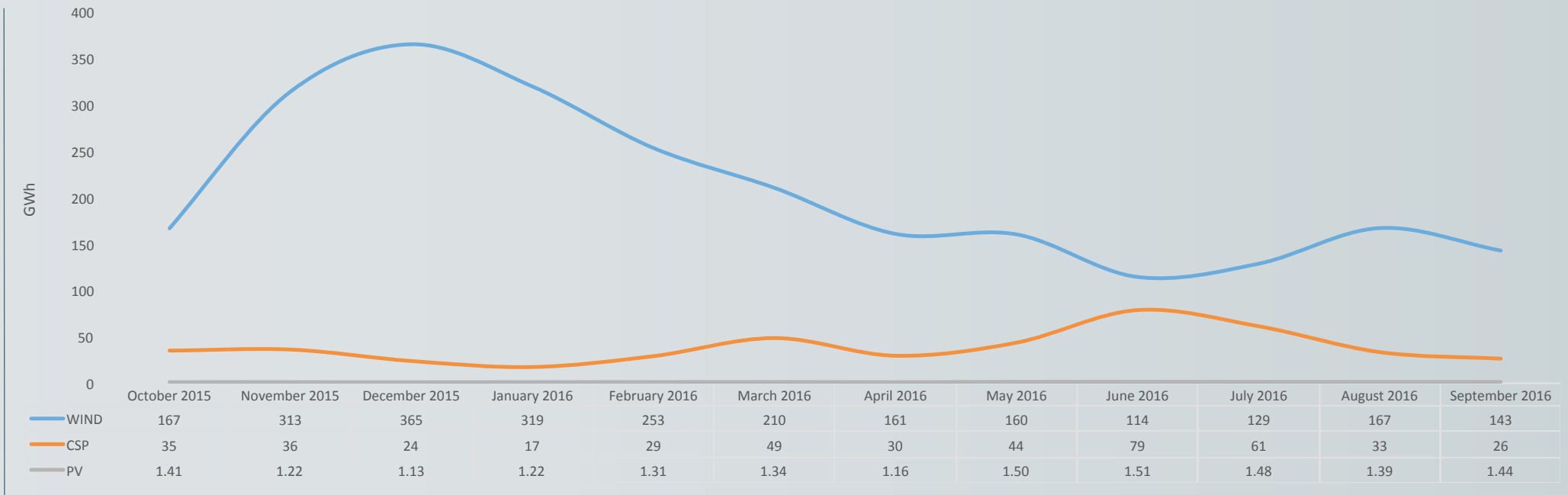
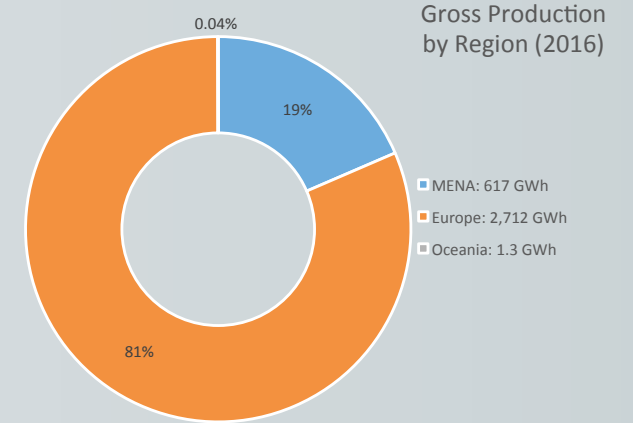
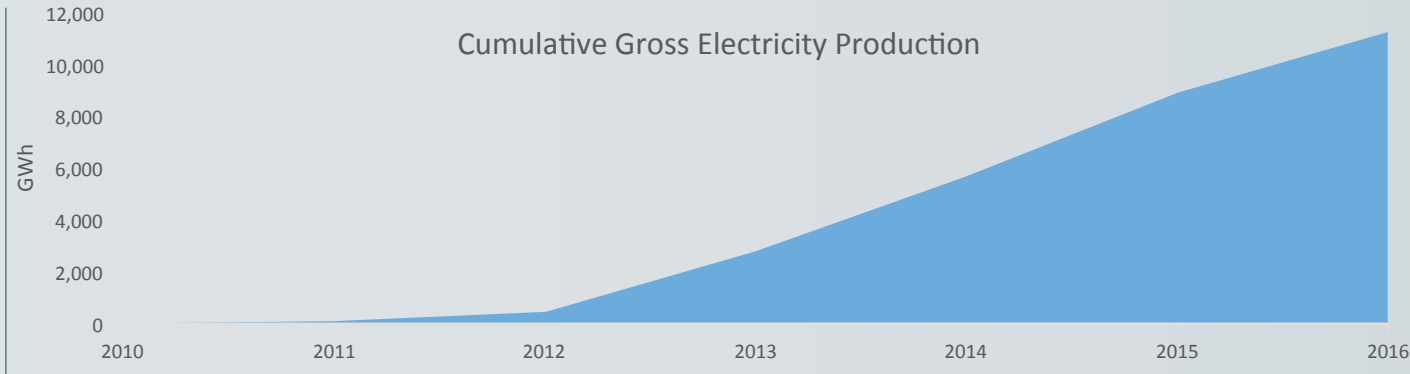
Country

Sessions

% Sessions

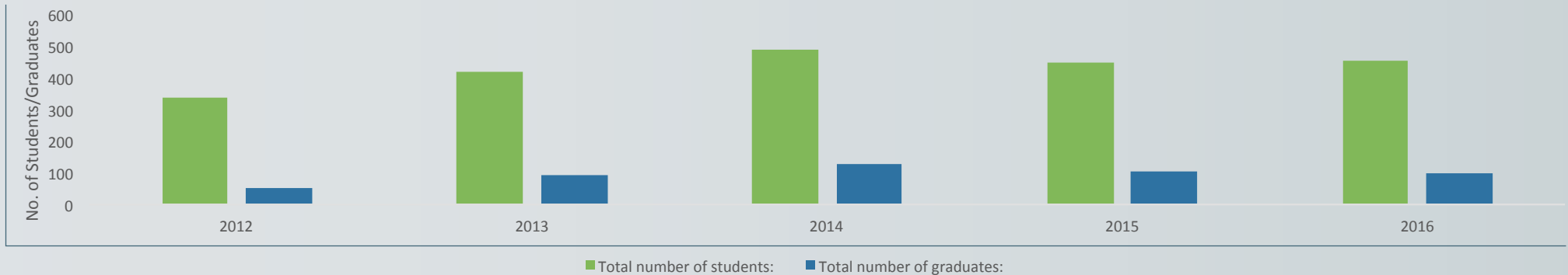
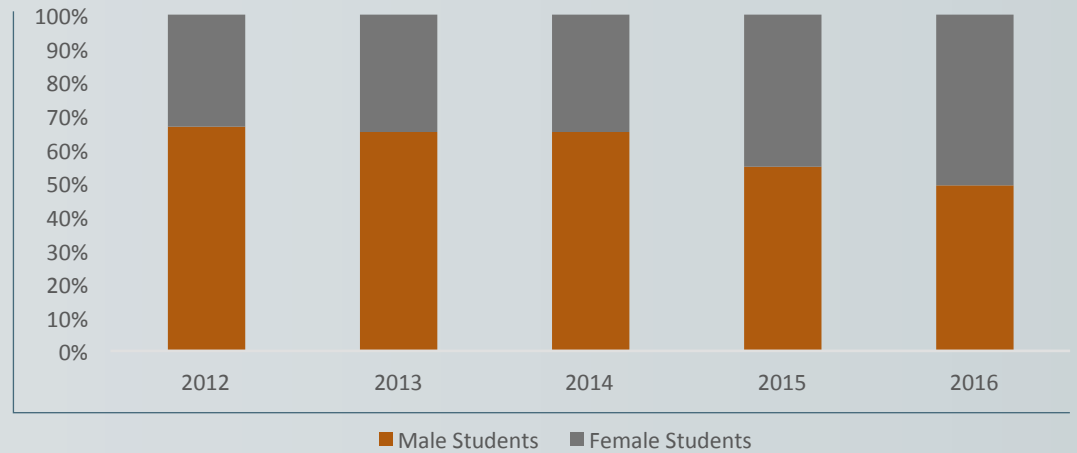
1.  India	80,520	43.06 %
2.  United Arab Emirates	36,090	19.30 %
3.  Pakistan	13,590	7.27 %
4.  United States	11,972	6.407 %
5.  Saudi Arabia	5,044	2.70 %

# ECONOMIC DEVELOPMENT POWERING PROGRESS



# PRODUCTS AND SERVICES RESEARCH & DEVELOPMENT

8 Registered Patents (+2 from 2015)  
 70 Patents Pending (+16 from 2015)  
 134 Invention Disclosures (+38 from 2015)  
 120 Active Research Projects  
 1790 Total Published Articles



## PRODUCTS AND SERVICES RESEARCH & DEVELOPMENT

### RENEWABLE ENERGY WATER DESALINATION PROGRAMME

Established in 2015 and based in Ghantoot, Abu Dhabi, the commercial partners will construct four small-scale desalination pilot plants. They will operate for at least 15 months. The performance of the plants will be assessed and rigorously monitored and tested.

Target of achieving electric energy consumption of less than 3.6 kilowatt-hours per cubic meter of produced water (through membrane-based seawater desalination).

#### BENEFITS:

- Diversification and strengthening of energy and water security.
- Enhanced energy efficiency of water desalination.
- Reduced cost of water desalination.
- A reduction of the environmental impact of desalination.

Masdar Desalination



GRI SD: G4-04, G4-08  
GRI SMD: EC-08

### MASDAR SOLAR HUB

#### OBJECTIVES:

1. Testing and demonstration of photovoltaic and solar thermal energy technologies in Abu Dhabi's unique climatic conditions;
2. Providing the solar energy industry and UAE government with unbiased testing, evaluation, certification, consulting and information services;
3. Reducing the cost of solar energy generation by supporting the development of more efficient and cost effective equipment and by reducing the financing risks for new technologies;
4. Providing the foundation for new product development, co-operation with local businesses, and the creation of new high-tech solar companies in Abu Dhabi;
5. Raising the public awareness and information about solar energy solutions as a cost-effective and environmentally friendly solution to meet growing electricity needs in a sustainable way;
6. Supporting Abu Dhabi's initiative to install %7 of its electric power generation capacity using renewable energy sources by 2020.

#### ACTIVITIES:

- Long-term outdoor exposure testing of PV and CPV modules and CSP components
- Testing of solar thermal equipment and solar receivers
- Indoor testing of PV modules
- Testing of thermal energy storage systems



# PRODUCTS AND SERVICES POWERING DEVELOPMENT



# PRODUCTS AND SERVICES URBAN DEVELOPMENT

5

MINUTES TO  
ABU DHABI  
INTERNATIONAL  
AIRPORT

20

MINUTES TO  
DOWNTOWN  
ABU DHABI

40

MINUTES TO  
DUBAI

10

MW SOLAR PV  
PLANT ENOUGH  
TO POWER  
MORE THAN  
1,000 HOMES

DIVERTING 15,000

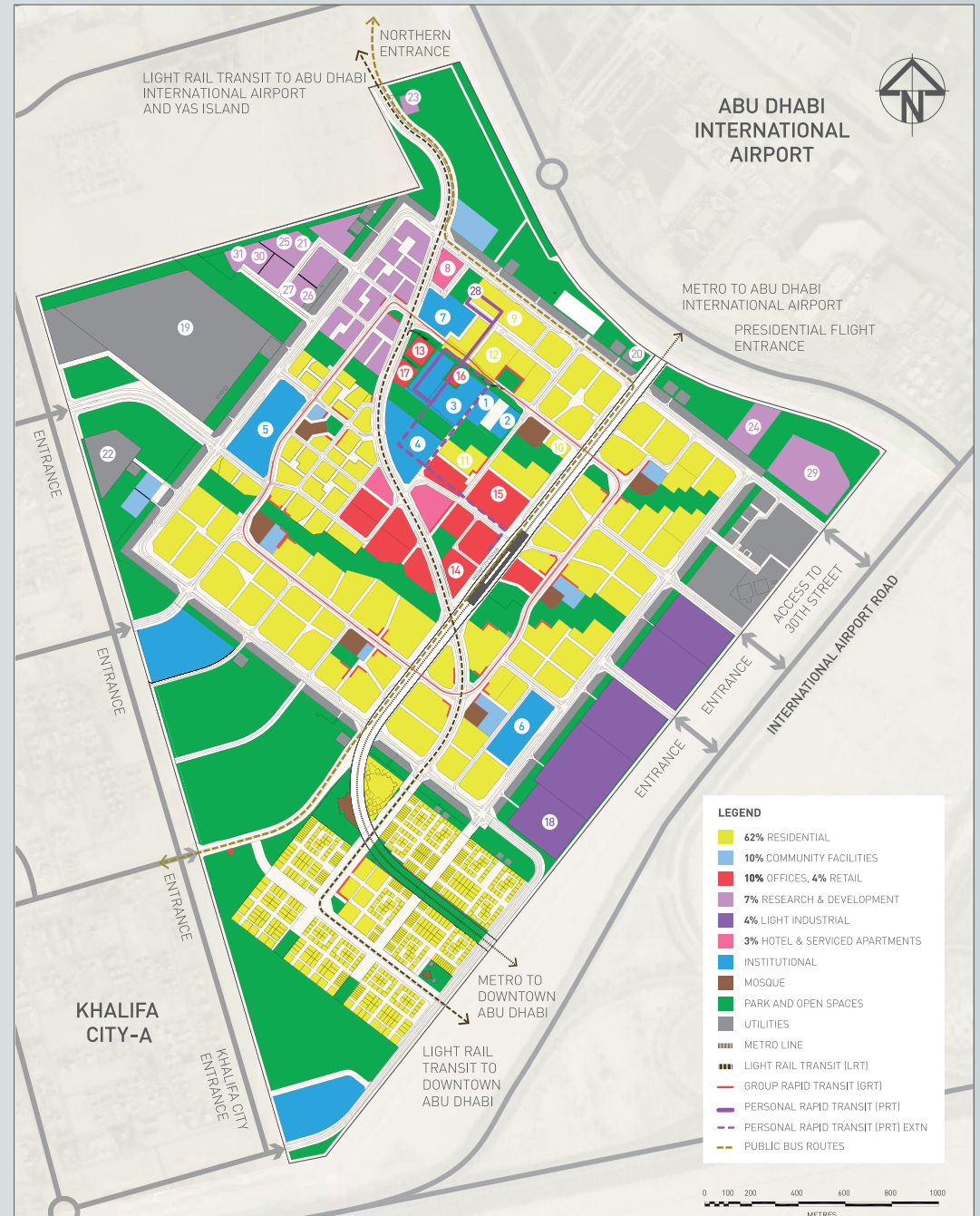
TONNES OF CARBON  
EMISSIONS PER YEAR

100%

PEDESTRIAN-FRIENDLY  
NEIGHBOURHOODS

40%

LESS ENERGY &  
WATER CONSUMPTION



# PRODUCTS AND SERVICES URBAN DEVELOPMENT

## UPCOMING PROJECTS

## CURRENT PROJECTS

# PRODUCTS AND SERVICES URBAN DEVELOPMENT

## MASDAR CITY ECO-VILLA ENVIRONMENTAL RATIONALE

### ACHIEVING NET ZERO ENERGY: ECO-VILLA WITH PV

Net Zero Energy Eco-Villa Energy Demand	Net Zero Energy Eco-Villa Renewable Energy Output	Net Zero Energy Eco-Villa Zero Net Energy Status
--	--	---

39,285 – 40,000 ≤ 0

**KWH PER YEAR**

**KWH PER YEAR**

- 266 sq m available roof space
- 80 PV panels
- Panels generates 40,000 KWh per year

**KWH PER YEAR**

- Actual figure is net positive 785 KWh per year

Eco-Villa  
Without PV



Net Zero Energy Eco-Villa  
With PV



“THE MASDAR CITY ECO-VILLA USES **FOUR TIMES LESS ENERGY** THAN STANDARD OLDER VILLAS.”

## MASDAR CITY ECO-VILLA TOWARDS NET ZERO ENERGY

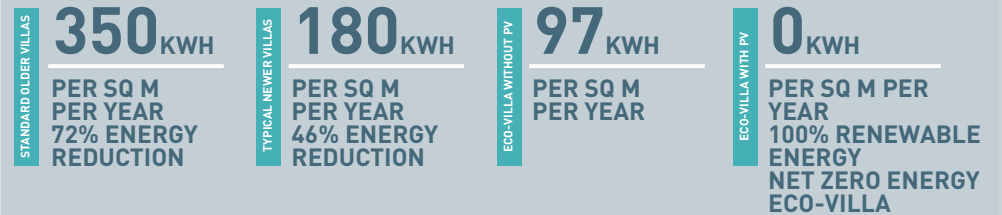
THROUGH CONSTANT INNOVATION, MASDAR CITY IS COMMITTED TO PROVIDING SUSTAINABLE HOUSING SOLUTIONS FOR ABU DHABI'S GROWING POPULATION

The Masdar City Eco-Villa continues Abu Dhabi's tradition of innovation by pioneering a new concept for the design, construction and operation of sustainable family homes.

Two types of Eco-Villa have been conceived:

- The standard Eco-Villa achieves almost one quarter of the energy consumption of standard older villas
- The Net Zero Energy Eco-Villa advances sustainability even further as it and deploys PV panels to generate renewable energy

### ENERGY CONSUMPTION

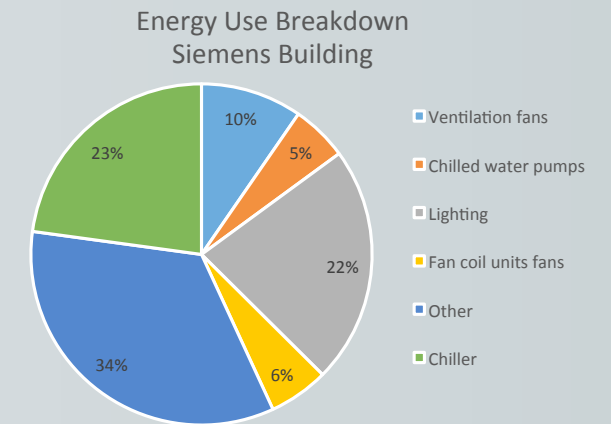
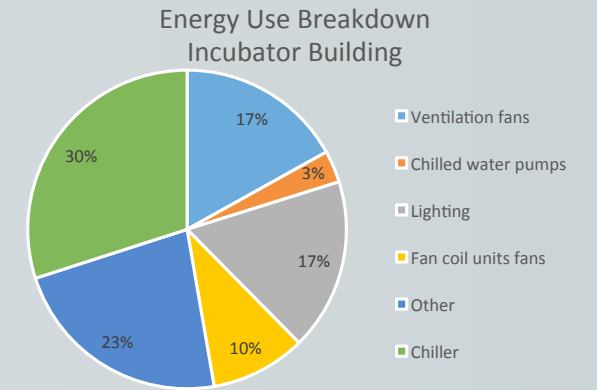
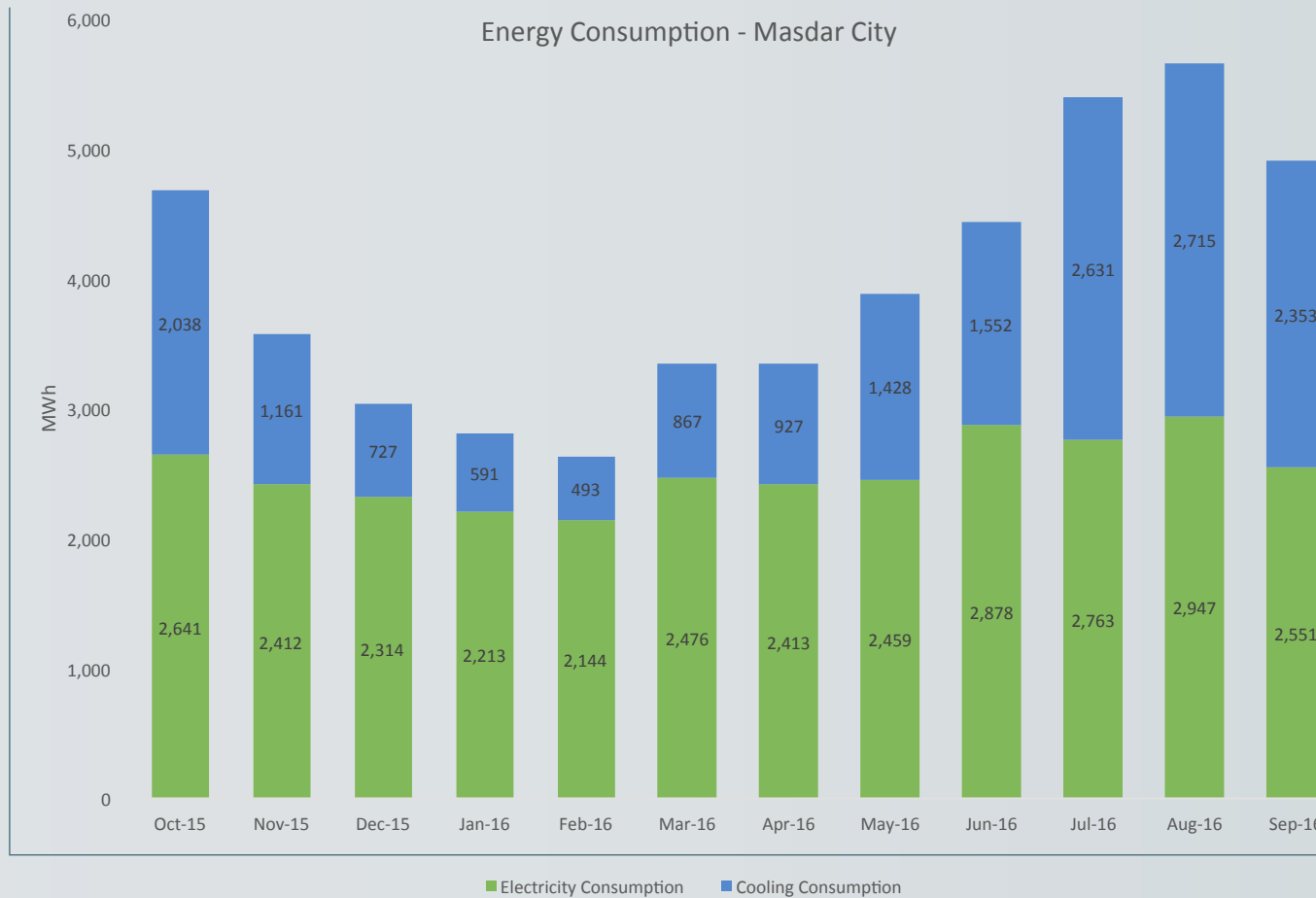


**PLOT GFA 405 SQ M  
25M X 36M**

- Floor Plan Legend
1. Family Living Room
  2. Dining Room
  3. Kitchen
  4. Laundry Room
  5. Maid's Room
  6. Majlis
  7. Powder Room
  8. Guest Bedroom
  9. Courtyard
  10. Master Bedroom
  11. Living Room
  12. Bedroom 1
  13. Bedroom 2

# ENVIRONMENTAL PERFORMANCE

## ENERGY MANAGEMENT

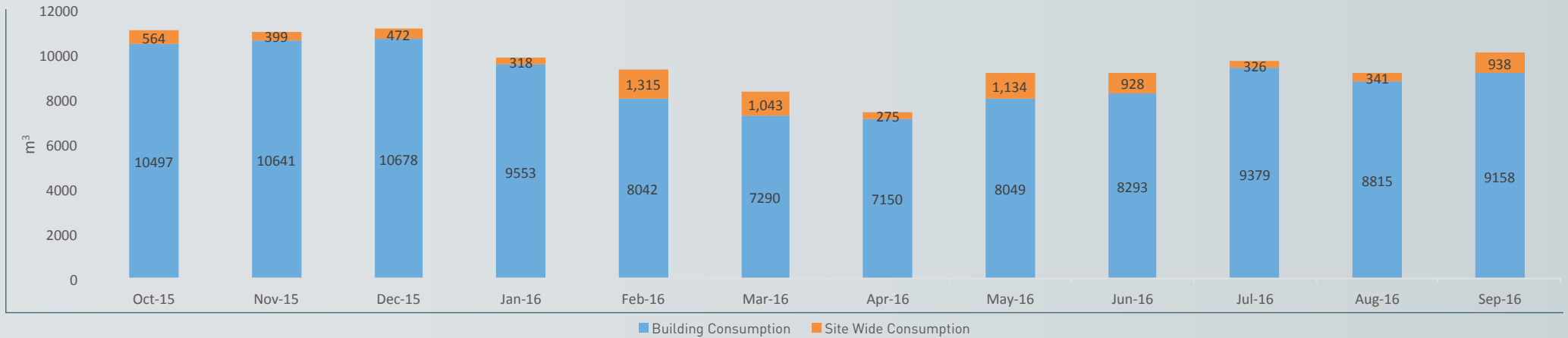


2.5% increase in Total energy consumption due to operations at 100% occupancy across all assets.

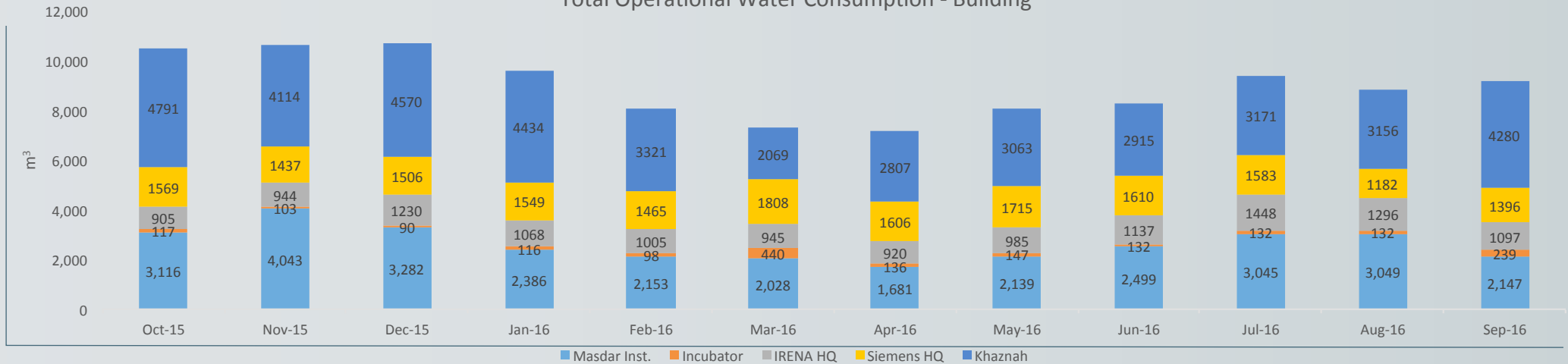
# ENVIRONMENTAL PERFORMANCE

## WATER MANAGEMENT

Total Operational Water Consumption – Masdar City



Total Operational Water Consumption - Building

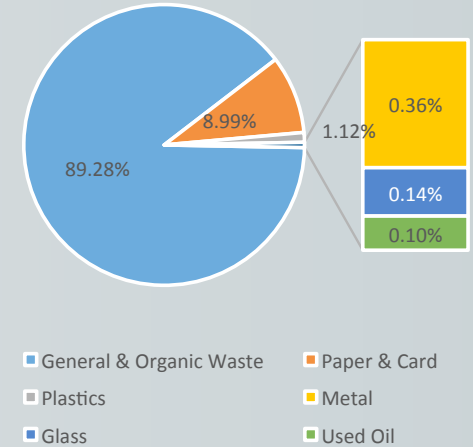
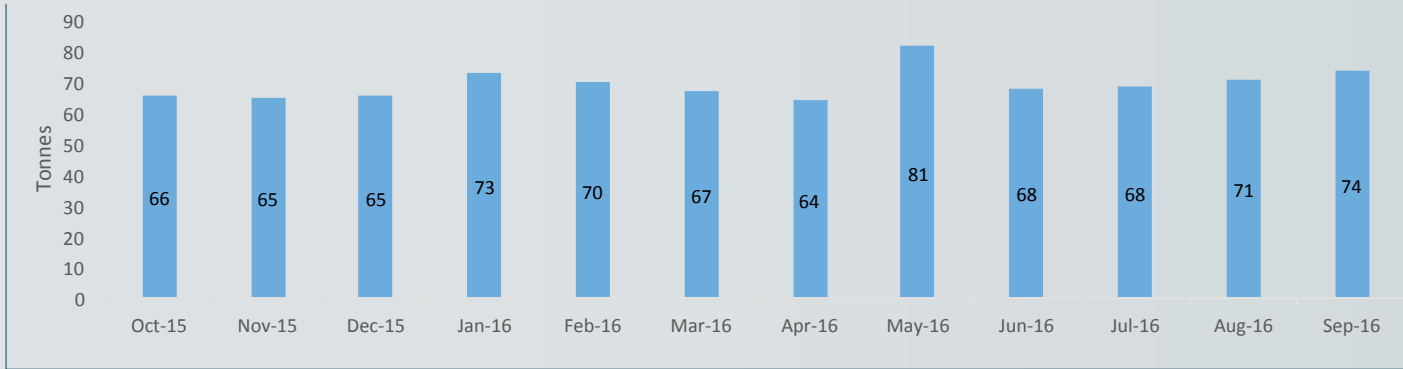


Increase in overall water consumption against 2015 due to inclusion of new assets and increased construction activity

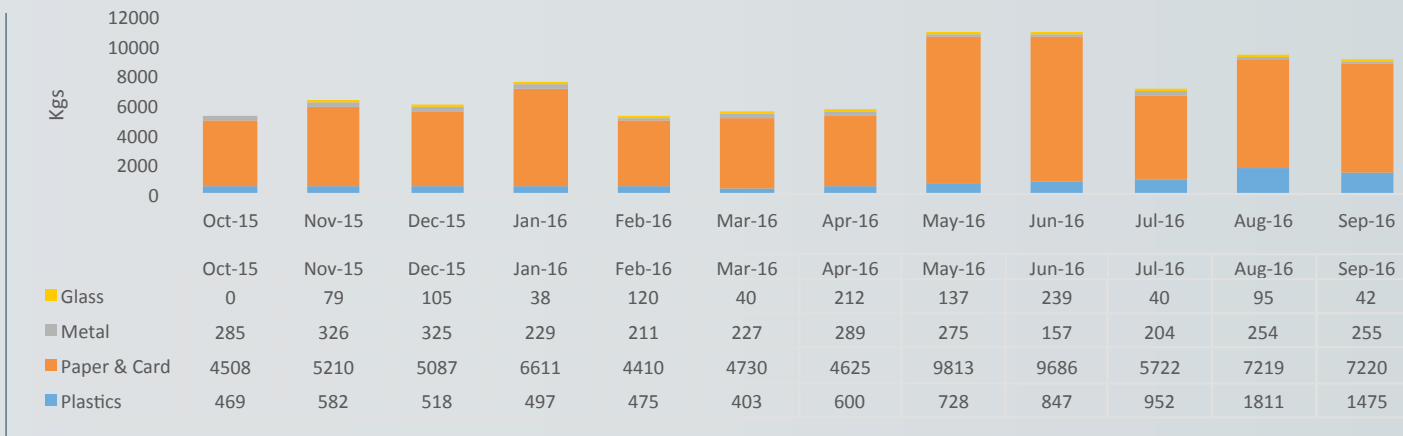
# ENVIRONMENTAL PERFORMANCE

## WASTE MANAGEMENT

Total Operational Waste Generation – Masdar City



Total Operational Waste Diverted from Landfill

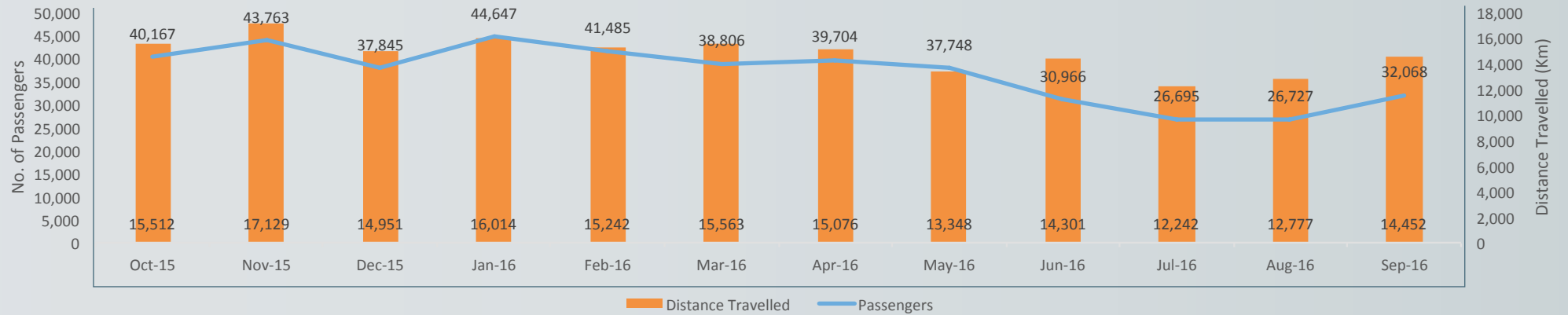


**11%**  
TOTAL OPERATIONAL WASTE  
DIVERTED FROM LANDFILL

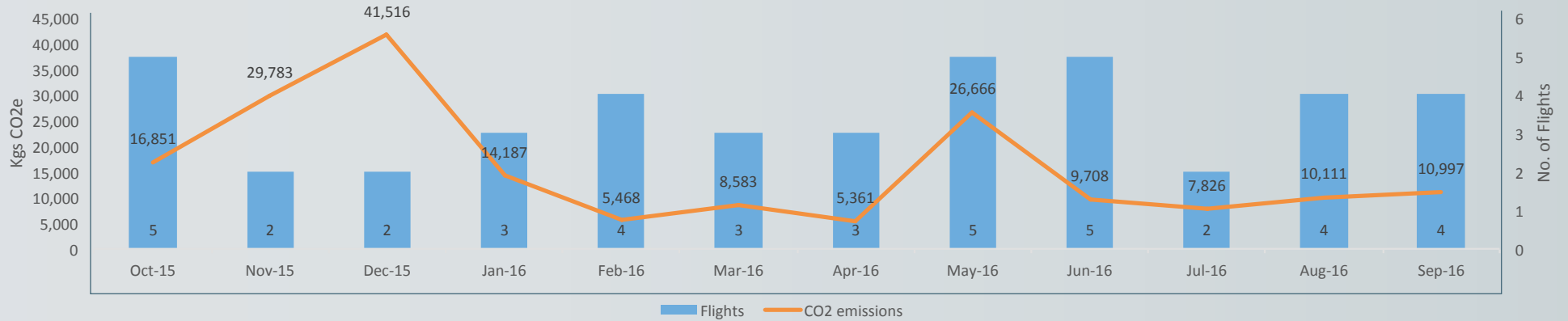
**86% +10%**  
INCREASE FROM 2015  
TOTAL CONSTRUCTION WASTE  
DIVERTED FROM LANDFILL

# ENVIRONMENTAL PERFORMANCE TRANSPORTATION

PRT Usage in Masdar City



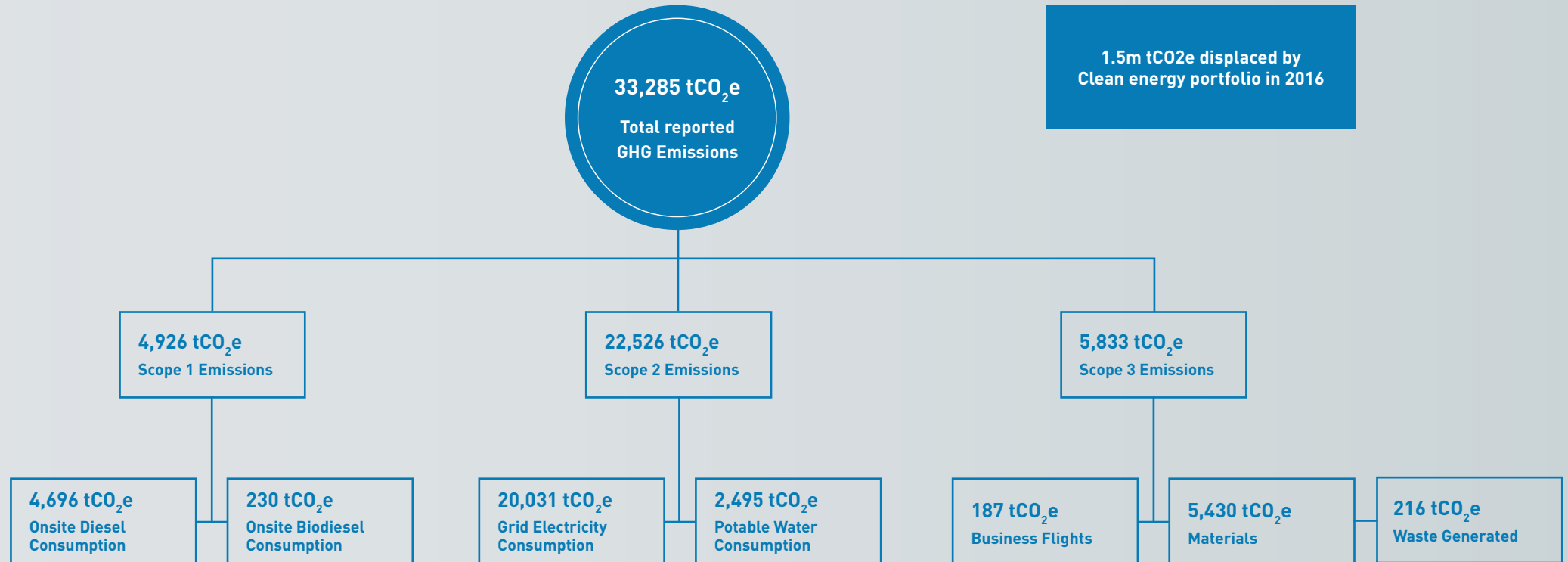
Business Travel - Flights





# ENVIRONMENTAL PERFORMANCE

## GHG EMISSIONS



**Emission Factors:**

- Grid Electricity: 0.42 tCO<sub>2</sub>e/MWh -
- Potable Water: 0.02158 tCO<sub>2</sub>e/m<sup>3</sup> -
- Diesel: 2.60 tCO<sub>2</sub>e/m<sup>3</sup> -
- Biodiesel: 2.21 tCO<sub>2</sub>e/m<sup>3</sup> -
- Waste: 0.29 tCO<sub>2</sub>e/ton -

## ENVIRONMENTAL PERFORMANCE MASDAR CITY CEMP MANAGEMENT

TOTAL ENVIRONMENTAL AUDITS

PLANNED

18

ACTUAL

19

TOTAL INSPECTIONS

PLANNED

70

ACTUAL

85

0

TOTAL INCIDENTS

5

TOTAL COMPLAINTS

16

TOTAL MAJOR NON CONFORMANCES

64

TOTAL MINOR NON CONFORMANCES

2

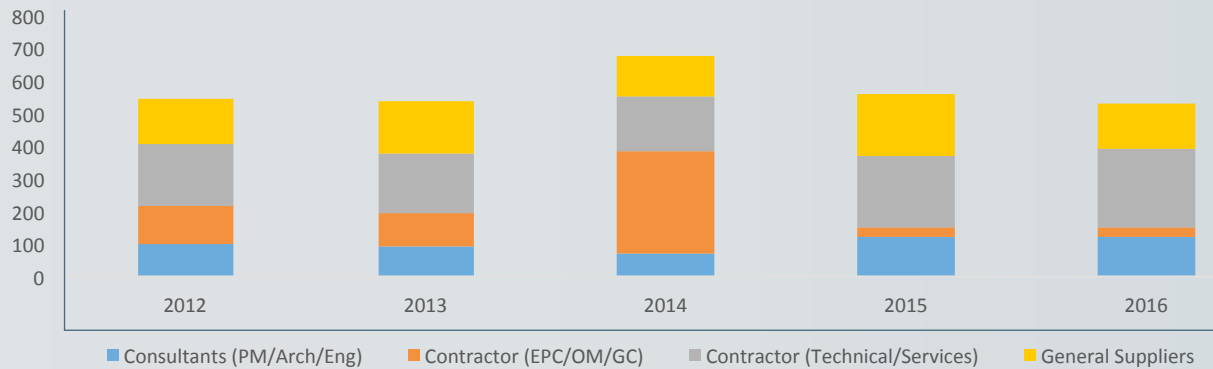
TOTAL EXAMPLES OF BEST PRACTICES

712

NUMBER OF CEMP INDUCTEES

# SUPPLY CHAIN MANAGEMENT PROCUREMENT PRACTICES

Pre-Qualified Suppliers by Type



## MASDAR SUSTAINABILITY SUPPLY CHAIN CODE OF CONDUCT

To register as a qualified supplier, each Company must adhere to the 5 core principles:

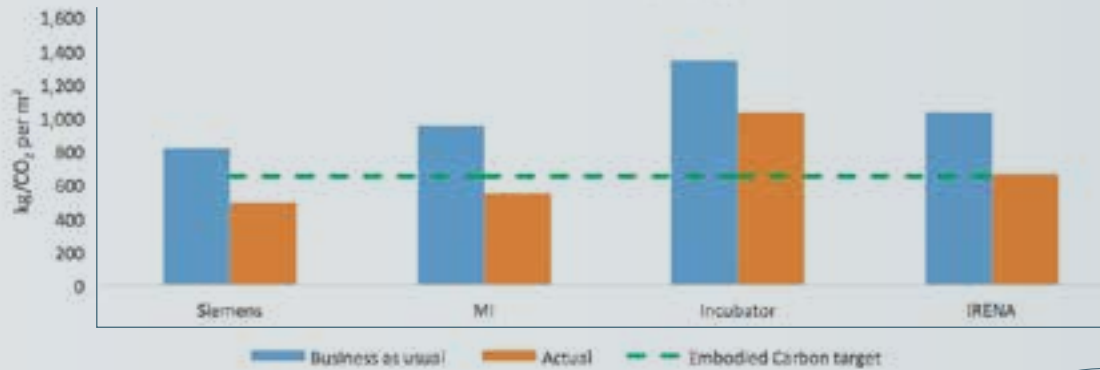
1. The supplier must comply with all relevant local and national laws and regulations with regard to employment practices, benefits, health and safety, and anti-discrimination.
2. The supplier must not use child, forced or involuntary labour in any form.
3. The supplier must comply with all relevant local and national laws and regulations with regard to occupational health and safety, and the provision of health-related benefits to employees.
4. 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, and waste.
5. The supplier must strictly comply with all laws and regulations on bribery, corruption and prohibited business practices.

TENDER COMMITTEE STAGE 1	TENDER COMMITTEE STAGE 2	TENDER COMMITTEE STAGE 3
<ol style="list-style-type: none"> <li>1. Approves scope of work</li> <li>2. Approves list of bidders</li> <li>3. Approves technical evaluation committee members</li> <li>4. Approves technical evaluation criteria &amp; cut-offs scores</li> <li>5. Approves procurement strategy</li> <li>6. Approves the proposed timeline for the tendering process</li> <li>7. Approves the prequalification results (if any)</li> </ol>	<ol style="list-style-type: none"> <li>1. Reviews technical evaluation submitted by technical evaluation committee</li> <li>2. Approves technical evaluation results; not required when all submitted bids (minimum of 3) are qualified and accepted</li> <li>3. Authorizes Procurement &amp; Contracts team to open commercial bids</li> </ol>	<ol style="list-style-type: none"> <li>1. Reviews commercial evaluation in conjunction with technical evaluation</li> <li>2. Requests Procurement and Contracts team to negotiate with bidder (if required)</li> <li>3. Support or reject award recommendations</li> <li>4. Submit supported recommendations above USD 1m for CEO endorsement</li> </ol>

**134** | TOTAL REQUESTS FOR PROPOSALS (RFPS) ISSUED DURING REPORTING PERIOD

# SUPPLY CHAIN MANAGEMENT EMBODIED CARBON

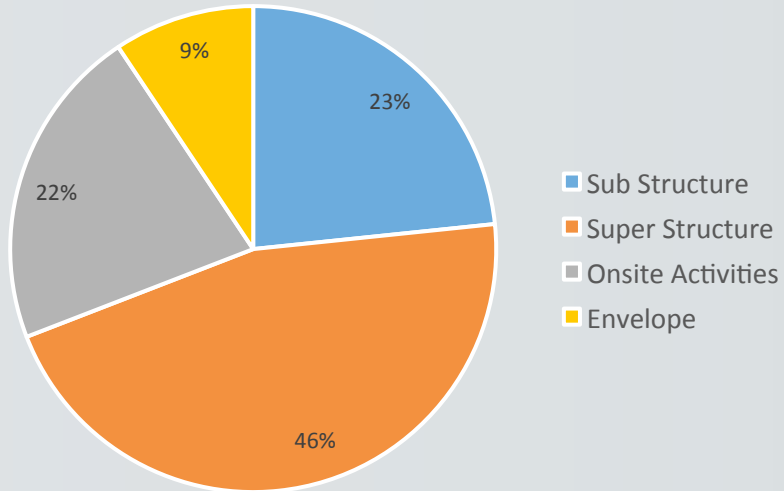
Embodied Carbon Intensity by project



EMBODIED CARBON ACTIVITY - NEIGHBORHOOD 1 RESIDENCE (N1R)

Total Embodied carbon in construction materials (Masdar)	5,430	tCO <sub>2</sub>
Total Embodied carbon in construction materials (BAU)	9,554	tCO <sub>2</sub>
Total savings during reporting period	4,124	tCO <sub>2</sub>
	43%	
Embodied carbon in concrete (Masdar)	4,101	tCO <sub>2</sub>
Embodied carbon in concrete (BAU)	5,711	tCO <sub>2</sub>
Embodied carbon in steel (Masdar)	1,329	tCO <sub>2</sub>
Embodied carbon in steel (BAU)	3,843	tCO <sub>2</sub>

Total Embodied Carbon by building element

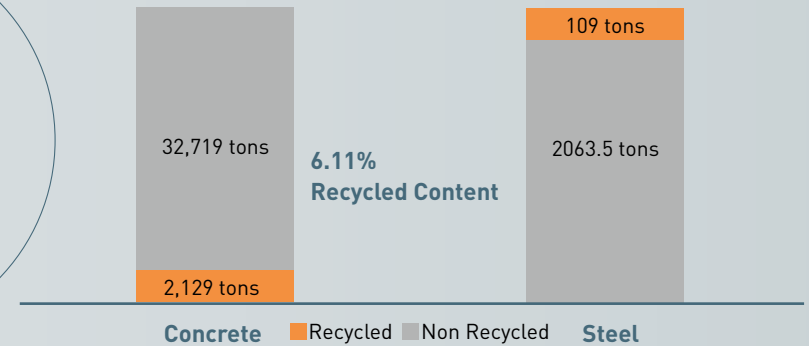


BAU = Business as Usual

**5.75%**

**BIODIESEL (B20) USAGE IN N1R DURING REPORTING PERIOD**

CONSTRUCTION MATERIAL USAGE - N1R



MATERIAL TYPE	UNIT	BUSINESS AS USUAL	MASDAR USED	REFERENCE
Concrete	kgCO <sub>2</sub> /m <sup>3</sup>	432 - 299	168-260	EPD in accordance with ISO14025
Steel Rebar	tCO <sub>2</sub> /ton	1.724	0.517	*ICE
Steel Section	tCO <sub>2</sub> /ton	2.78 - 1.78	0.44-2.78	*ICE
Aluminium	tCO <sub>2</sub> /ton	18.903	1.736	LCA in accordance with ISO14040

# COMMUNITY INVOLVEMENT PUSHING THE GLOBAL AGENDA



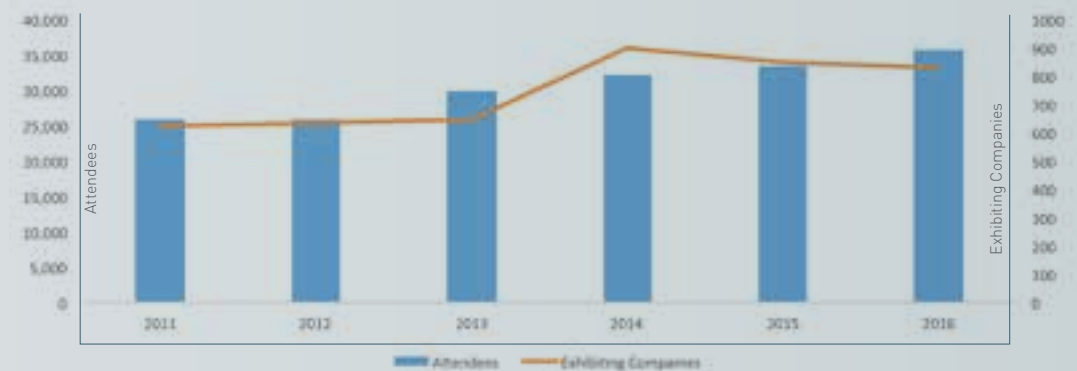
**627**  
REGISTERED PRESS  
FROM 36 COUNTRIES

**170**  
COUNTRIES  
REPRESENTED

**200**  
HIGH LEVEL  
SPEAKERS

## 2016

- The 6<sup>th</sup> General Assembly of the International Renewable Energy Agency (IRENA)
- The 8<sup>th</sup> Zayed Future Energy Prize Awards Ceremony
- The 2<sup>nd</sup> Women in Sustainability, Environment and Renewable Energy conference
- Launch of the Future Cities Forum in cooperation with IRENA and the UN Habitat
- Launch of the Egypt Energy Forum
- Launch of the Global Action Day
- Launch of the The Students Exclusive @ ADSW
- The 3<sup>rd</sup> Festival @ Masdar City



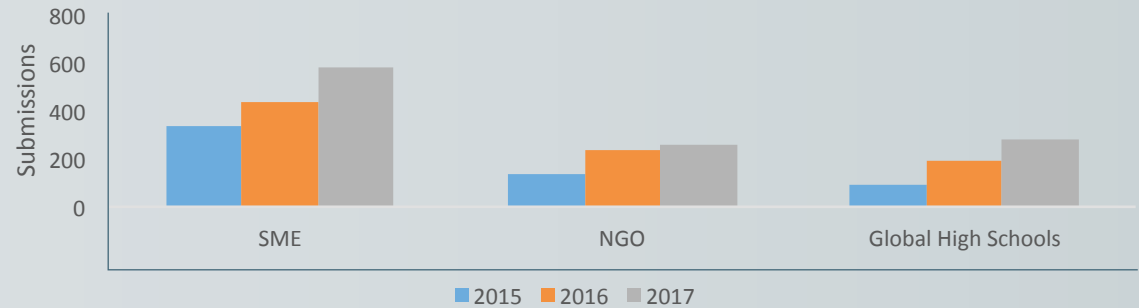
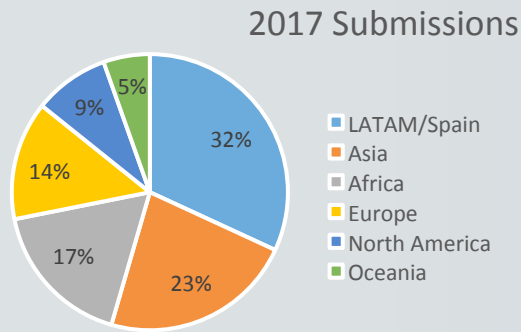
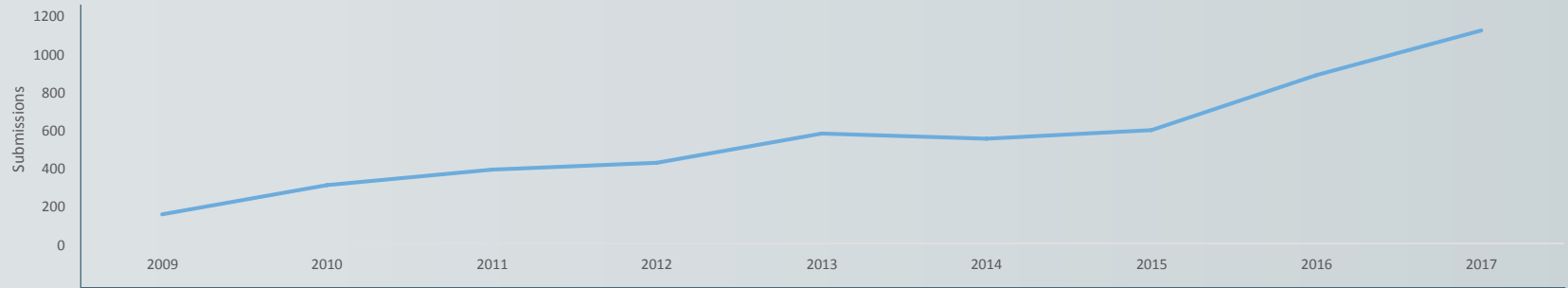
# COMMUNITY INVOLVEMENT ENCOURAGING INNOVATION

## 205

LARGE CORP. NOMINATIONS  
(2017)

## 350

LIFETIME ACHIEVEMENT  
NOMINATIONS (2017)

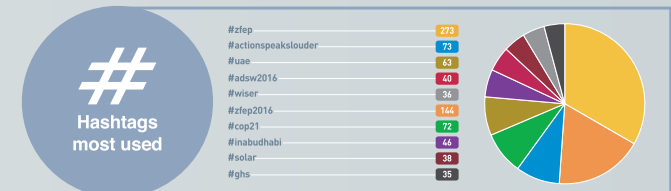
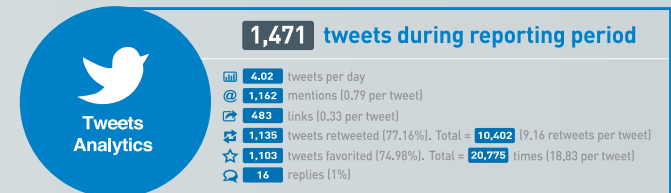


### WINNERS 2016

- Large Corporation: byd, China
- SME: Off Grid, Tanzania
- NPO: Kopernik, Indonesia
- Life Time Achievement: Gro Brundtland, Norway

#### GHS:

- Americas – Institucion Educativa Gabriel Plazas, Colombia
- Asia – Korean Science Academy, South Korea
- Africa – SOS HG Sheikh Secondary School, Somaliland
- Europe – Schuelerforschungszentrum (SFZ) Suedwuerttemberg, Germany
- Oceania – Cashmere High School, New Zealand





# COMMUNITY INVOLVEMENT PARTNERING FOR THE FUTURE

**13**  
years  
project

**\$**  
170 millions  
raised in  
total

**10**  
years of  
design and  
calculation

**2**  
experimental  
airplanes  
**HB-SIA** **HB-SIB**

**DISTANCE**  
43,000 km

**FLIGHT TIME**  
550 hours  
= 23 days

**SOLAR ENERGY  
PRODUCED**  
11,000 kWh

**ROUTE SIMULATION**  
17,000

**19 FAI**  
ratifications  
in total  
(11 pending)

## Key world records

### «Solar-powered aircraft» category

- Distance and duration record for André Borschberg's flight over the Pacific ocean (from Japan to Hawaii), 8,924km in 5 days and 5 nights - 117 hours and 52 minutes.

- Gain of altitude record for Bertrand Piccard's flight over the Pacific Ocean (from Hawaii to San Francisco), 9,102m.

### «Electrically-powered aircraft» category

Distance and absolute altitude record for Bertrand Piccard's Atlantic crossing (from New York to Seville), 5,739km and 8,535m respectively.

### Longest solo flight

Longest solo flight in an airplane of any kind accomplished by André Borschberg during the flight between Japan and Hawaii.



# COMMUNITY INVOLVEMENT PARTNERING FOR THE FUTURE



TV clips on Si2 that mention Abu Dhabi  
**5,372**

Or **34%**  
of all TV clips



News articles on Si2 that mention Abu Dhabi  
**38,897**

Or **59%**  
of all articles



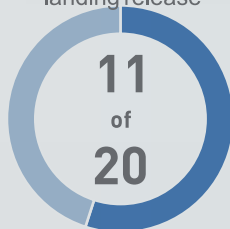
Mentions of Abu Dhabi online, news and digital  
**65,009**

Of which **59%**  
over the past month



Potential reach  
**1.45 billion**

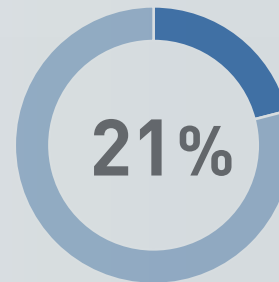
Mentions of Masdar in Top-Tier US Newspapers, following the landing release



Reach of our Digital campaign, million



Share of Voice in the UAE media over the past month



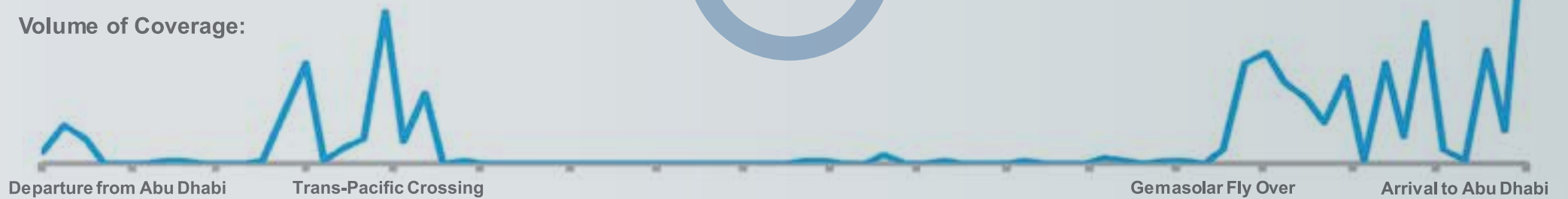
PR value, million USD:



Reach of our press releases, million:



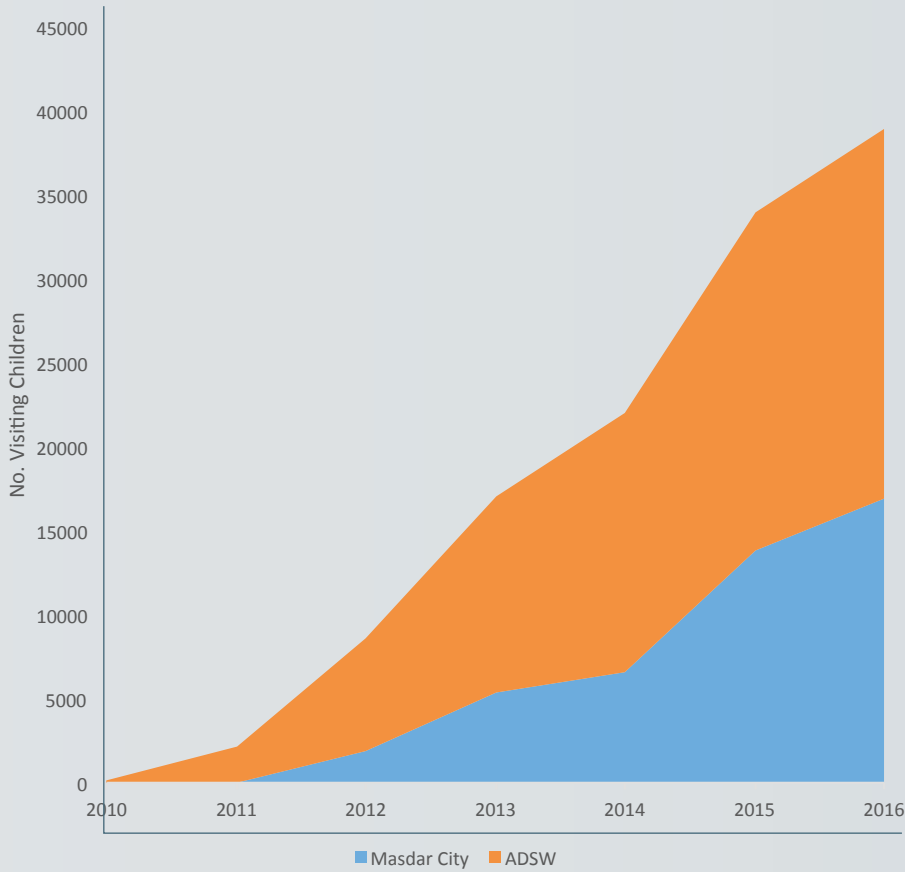
Volume of Coverage:





# COMMUNITY INVOLVEMENT LOCAL OUTREACH

Cumulative School Visits



**The Festival**  
at Masdar City  
PART OF ABU DHABI SUSTAINABILITY WEEK 2016



**10,000**  
VISITORS TO THE FESTIVAL  
AT MASDAR CITY

## APPENDIX

### USING THE PRINCIPLES TO DEFINE THE REPORTING CONTENT

This report has used the most current Global Reporting Initiative Guidelines. The GRI G4 requirements have been used as the assessment criteria to enrich the integrity of the Masdar Sustainability Report 2016.

### MATERIALITY

In accordance with the GRI G4 guidelines, Masdar has developed the report to ensure that only those aspects deemed material to Masdar stakeholders have been incorporated in the 2016 sustainability report. This has been elaborated on in the materiality section of this report.

### COMPLETENESS

Masdar has designed this report to ensure that complete and concise data is provided to allow for stakeholder evaluation and to help inform the decision-making process. The report also offers justifications for areas in the report where data is incomplete and remedial action plans are in place for this data's inclusion in future reports.

### 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 the identified economic, environmental and social issues with reference to their regional and global significance.

### USING THE 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

Where applicable, Masdar's 2016 report has been able to offer a comparison against the performance of material aspects set out in previous reports and will continue to highlight trends and performance to assist our stakeholders in making their assessments. We have followed the same reporting period of October to September, in this case October 2014 to September 2016.

### ACCURACY

We believe that both the 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 organisations 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 messages 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 are reliable, and we have utilised recognised methodologies that allow for the verification of data. Masdar has also taken the necessary action to have this report externally assured, both for the quality of data and for meeting the necessary requirements for 'in accordance' with GRI G4 guidelines core option.

# EXTERNAL ASSURANCE



January 05<sup>th</sup> 2017

PO Box 46112  
Al Ghath Tower, Suite 1202  
Hamdan bin Mohamed St  
Abu Dhabi  
United Arab Emirates  
Telephone: 3420 827 200 971+  
Fax: 5764 827 200 971+  
www.rsk.co.uk

## Assurance Statement

### Background

Abu Dhabi Future Energy Company (MASDAR) has contracted RSK Environment LLC (RSK) to conduct an independent assurance of MASDAR's Corporate Sustainability Report (CSR) 16-2015 (the Report) in its printed format, which was prepared in accordance with Core option of the G4 Sustainability Reporting Guidelines issued by the Global Reporting Initiative (GRI).

This independent assurance statement is issued solely to MASDAR based on the terms of RSK's agreed scope of work.

This assurance statement provides the Report readers with an independent opinion on the reliability of information, based on RSK's assessment of the Report and underlying systems and evidence. The statement is intended both for the general readers and for stakeholders who have an interest in MASDAR's sustainability performance and challenges. The assurance engagement is based on the assumption that the data and information provided to RSK are complete and true. RSK explicitly repudiates any liability or co-responsibility for any decision a person or entity would make based on this assurance statement.

### Responsibility

MASDAR were responsible for preparing the Report and the information and statements contained within. They were responsible for identification of material issues and stakeholders, 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.

MASDAR's role in this verification process has been to provide the necessary data and evidence to support their assertions.

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



RSK Environment LLC  
www.rsk.co.uk



## Scope of Assurance

RSK's assurance included the verification of data management processes and reported information. This was carried out in the context of MASDAR's sustainability strategy, management processes and performance in the 12 month reporting period from October 2015 ending on 30 September 2016.

The scope of work agreed upon with MASDAR included the following elements:

- 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 and data made available to RSK by MASDAR;
- Visit MASDAR head-office;
- Review MASDAR's approach to materiality analysis;
- Perform sample-based audits of the mechanisms for implementing MASDAR's own sustainability-related policies, as described in the Report; and
- 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 at a moderate level of assurance.

### Limitations

Inherent limitations affect the conversion of electricity, water, waste and fuel used to calculate carbon emissions. Conversion 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. RSK's assurance work has not included challenging the scientific work undertaken by independent third parties when calculating these emissions factors.

### RSK Independence

RSK did not provide any services to MASDAR during 2016-015 that could compromise the independence or impartiality of the findings, conclusions or recommendations in this statement. 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. Throughout the assurance process, RSK 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 recording;
- Examined and reviewed documents, data and other information made available to RSK by MASDAR;
- Undertaken a visit to MASDAR head-office;
- Conducted interviews with information owners (five people);
- Reviewed and challenged MASDAR's approach to materiality analysis;
- 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; and
- Provided recommendations to MASDAR for future reporting.

An initial readiness assessment allowed MASDAR to provide documentation for review by RSK and implement corrective actions for discrepancies detected during both quantitative and qualitative reviews.

# EXTERNAL ASSURANCE



**Conclusions**

In RSK's opinion, information presented in the Report provides a material and complete representation of MASDAR performance in the context of sustainable development. The verification process confirmed that the Report was prepared based on factual statements and that the data contained within the Report are accurate. It is a fair representation of initiatives, targets, progress and performance on MASDAR's sustainable development achievements.

The Report provides an adequate and fair account of MASDAR's sustainability performance on material aspects and demonstrates satisfactory disclosures of the Core option of the GRI's G4 sustainability Reporting guidelines. RSK confirms that the GRI requirements for Application 'in accordance criteria' have been met.

- **Materiality:** MASDAR has identified material issues by conducting internal assessments of risks and opportunities, and stakeholder's mapping. MASDAR materiality assessment results have been adequately used as a basis for the preparation of the Report, guiding the identification of issues and ensuring that the emphasis given to assertions and information on various topics is proportionate to their relative materiality.
- **Completeness:** Based on RSK's review and within the reporting boundary defined by MASDAR, RSK noted that progress has been made in presenting information in a format which facilitates understanding and the comparison of performance with previous years for engagement, workforce, economic development, product and services, supply chain management and community involvement, highlighting the key efforts and achievements over the last five years. However, environmental performance and occupational health and safety management still require further development. Within the scope of work, RSK was not able to establish whether changes in reported performance are the result of changes in actual performance, or due to changes in activities and operations. 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.
- **Accuracy:** The data measurement techniques and bases for calculations have been adequately described to RSK. Although no systematic errors have been detected, RSK identified some manual errors which MASDAR has acknowledged and agreed to update in the final report. MASDAR is committed to continually improving the quality of data and is in the process of adopting a more structured data management system. In general, through discussion with RSK inaccuracies and comments have been agreed and a commitment made by MASDAR that these will be rectified for the final Report.
- **Neutrality:** RSK considers the information contained in the Report generally to provide a fair and balanced representation of MASDAR's CSR and Sustainability management approach, performance and challenges in 2016, in terms of content, tone and emphasis.



- **Comparability:** The information in the Report is presented in a format that allows users to see positive and negative trends in performance, except for environmental performance and occupational health and safety management.
- **Responsiveness:** MASDAR stakeholder's mapping demonstrates a commitment to dialogue with its stakeholders.

**Recommendations**

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

- The Sofi software (certified by the GRI) used to collect and report accurate data against Key Performance Indicators (KPIs) is being fully utilised in terms of quantitative data for construction, operation/production, quality health, safety and environment. However it was recognised that semi quantitative and qualitative data is currently not captured by Sofi software. For example stakeholder engagement results and tracking;
- The outcomes of the stakeholders mapping exercise that took place in 2015 to 2016 needs to be assessed with regards to how beneficial it was in understanding the stakeholders and the manner by which they were engaged;
- A more structured approach to measuring and reporting performance on the following aspects should be developed: contribution to global renewable energy; and sustainability performance of MASDAR City in light of more third party owners coming on board;
- Definition of boundaries of reporting on the different aspects would benefit from a more structured approach; and
- RSK believes that reporting on occupational health and safety only in respect of MASDAR City and excluding the corporate and clean energy projects performance does not give a full picture, especially as occupational health and safety has been of high materiality for both the corporate and the clean energy projects.

**Marvin Danvers**  
Environmental Team Leader

**Fergus A Collie**  
Managing Director

# GRI G4 CONTENT INDEX

STRATEGY AND ANALYSIS		CATEGORY: ECONOMIC		EMISSIONS		OCCUPATIONAL HEALTH AND SAFETY		SUPPLIER HUMAN RIGHTS ASSESSMENT	
G4-1	3-5, 9	ECONOMIC PERFORMANCE		G4-DMA	16-18, 49-50	G4-DMA	16-18, 49-50	G4-DMA	10, 12, 16-18, 49-50
ORGANIZATIONAL PROFILE		G4-DMA	16-18, 49-50	G4-EN15	48	G4-LA5	12, 32 (100%)	G4-HR10	50
G4-3	Abu Dhabi Future Energy Company – Masdar	G4-EC1	33	G4-EN16	48	G4-LA6	32	G4-HR11	50
G4-4	6, 7, 38-43	G4-EC2	12	G4-EN17	48	G4-LA7	32	HUMAN RIGHTS GRIEVANCE MECHANISMS	
G4-5	Masdar City, Abu Dhabi, UAE 54115	G4-EC3	27	G4-EN18	No defined methodology	G4-LA8	No trade unions in UAE	G4-DMA	10, 12, 16-18, 49-50
G4-6	7, 40-41	G4-EC4	State Owned Enterprise	G4-EN19	48, 51	TRAINING AND EDUCATION		G4-HR12	Zero
G4-7	State Owned Enterprise (Subsidiary)	MARKET PRESENCE		G4-EN20	Data currently not available	G4-DMA	16-18, 49-50	SUB-CATEGORY: SOCIETY	
G4-8	7, 39-43	G4-DMA	16-18, 49-50	G4-EN21	Data currently not available	G4-LA9	28-31	MATERIAL ASPECT: LOCAL COMMUNITIES	
G4-9	7, 26-43	G4-EC5	No minimum Wage in the UAE	EFFLUENTS AND WASTE		G4-LA10	28-31	G4-DMA	10, 12, 16-18, 49-50
G4-10	26, 33, 38	G4-EC6	34	G4-DMA	16-18, 49-50	G4-LA11	16-18 (100%)	G4-S01	13-14 (100%)
G4-11	Not applicable in UAE	INDIRECT ECONOMIC IMPACTS		G4-EN22	Data currently not available	DIVERSITY AND EQUAL OPPORTUNITY		G4-S02	49
G4-12	50-51	G4-DMA	16-18, 49-50	G4-EN23	46	G4-DMA	16-18, 49-50	MATERIAL ASPECT: ANTI-CORRUPTION	
G4-13	8	G4-EC7	37, 40, 42-43	G4-EN24	49	G4-LA12	26	G4-DMA	10, 12, 16-18, 49-50
G4-14	11-15	G4-EC8	35-40, 42-43	G4-EN25	46	SUPPLIER ASSESSMENT FOR LABOR PRACTICES		G4-S03	13-15 (100%)
G4-15	17, 53-54	PROCUREMENT PRACTICES		COMPLIANCE		G4-DMA	16-18, 49-50	G4-S04	11, 14, 50
G4-16	51, 53	G4-DMA	16-18, 49-50	G4-DMA	16-18, 49-50	G4-LA14	50 (100%)	G4-S05	Zero
IDENTIFIED MATERIAL ASPECTS AND BOUNDARIES		G4-EC9	33	G4-EN29	49	G4-LA15	50	MATERIAL ASPECT: ANTI-COMPETITIVE BEHAVIOR	
G4-17	21	CATEGORY: ENVIRONMENTAL		TRANSPORT		LABOR PRACTICES GRIEVANCE MECHANISMS		G4-DMA	10, 12, 16-18, 49-50
G4-18	19-20	MATERIALS		G4-DMA	16-18, 49-50	G4-DMA	16-18, 49-50	MATERIAL ASPECT: SUPPLIER ASSESSMENT FOR IMPACTS ON SOCIETY	
G4-19	21	G4-DMA	16-18, 49-50	G4-EN30	47-48	G4-LA16	Zero	G4-DMA	10, 12, 16-18, 49-50
G4-20	21	G4-EN1	51	OVERALL		SUB-CATEGORY: HUMAN RIGHTS		G4-S07	Zero
G4-21	21	G4-EN2	51	G4-DMA	16-18, 49-50	INVESTMENT		G4-DMA	10, 12, 16-18, 49-50
G4-22	No Restatements of Information	ENERGY		G4-EN31	Data currently not available	G4-DMA	10, 12, 16-18, 49-50	G4-HR1	12-14, 50
G4-23	21	G4-DMA	16-18, 49-50	SUPPLIER ENVIRONMENTAL ASSESSMENT		FREEDOM OF ASSOCIATION AND COLLECTIVE BARGAINING		G4-DMA	10, 12, 16-18, 49-50
STAKEHOLDER ENGAGEMENT		G4-EN3	44	G4-DMA	16-18, 49-50	CHILD LABOR		G4-HR4	Not applicable in UAE
G4-24	19	G4-EN4	44	G4-EN32	50 (100%)	FORCED OR COMPULSORY LABOR		G4-DMA	10, 12, 16-18, 49-50
G4-25	19	G4-EN5	44	G4-EN33	51	ASSESSMENT		G4-DMA	10, 12, 16-18, 49-50
G4-26	22-25, 55-56	G4-EN6	44	ENVIRONMENTAL GRIEVANCE MECHANISMS		G4-DMA	10, 12, 16-18, 49-50	G4-HR9	13-14, 17, 50
G4-27	19, 23	G4-EN7	44	G4-DMA	16-18, 49-50	SUB-CATEGORY: LABOR PRACTICES AND DECENT WORK			
REPORT PROFILE		WATER		G4-EN34	Zero	MATERIAL ASPECT: EMPLOYMENT			
G4-28	Q4 2015 - Q3 2016	G4-DMA	16-18, 49-50	CATEGORY: SOCIAL					
G4-29	Q4 2014 - Q3 2015	G4-EN8	45	SUB-CATEGORY: LABOR PRACTICES AND DECENT WORK					
G4-30	Annual	G4-EN9	45	MATERIAL ASPECT: EMPLOYMENT					
G4-31	sustainability@masdar.ae	G4-EN10	Data currently not available	G4-DMA	16-18, 49-50				
G4-32	60	BIODIVERSITY		G4-LA1	26				
G4-33	58-59	G4-DMA	16-18, 49-50	G4-LA2	27				
GOVERNANCE		G4-EN11	Data currently not available	G4-LA3	27				
G4-34	8, 12	G4-EN12	Data currently not available						
ETHICS AND INTEGRITY		G4-EN13	Data currently not available						
G4-56	5, 8, 10, 11, 50	G4-EN14	Data currently not available						

■ Highlighted indicators have been evaluated as part of external assurance (page 58-59)

