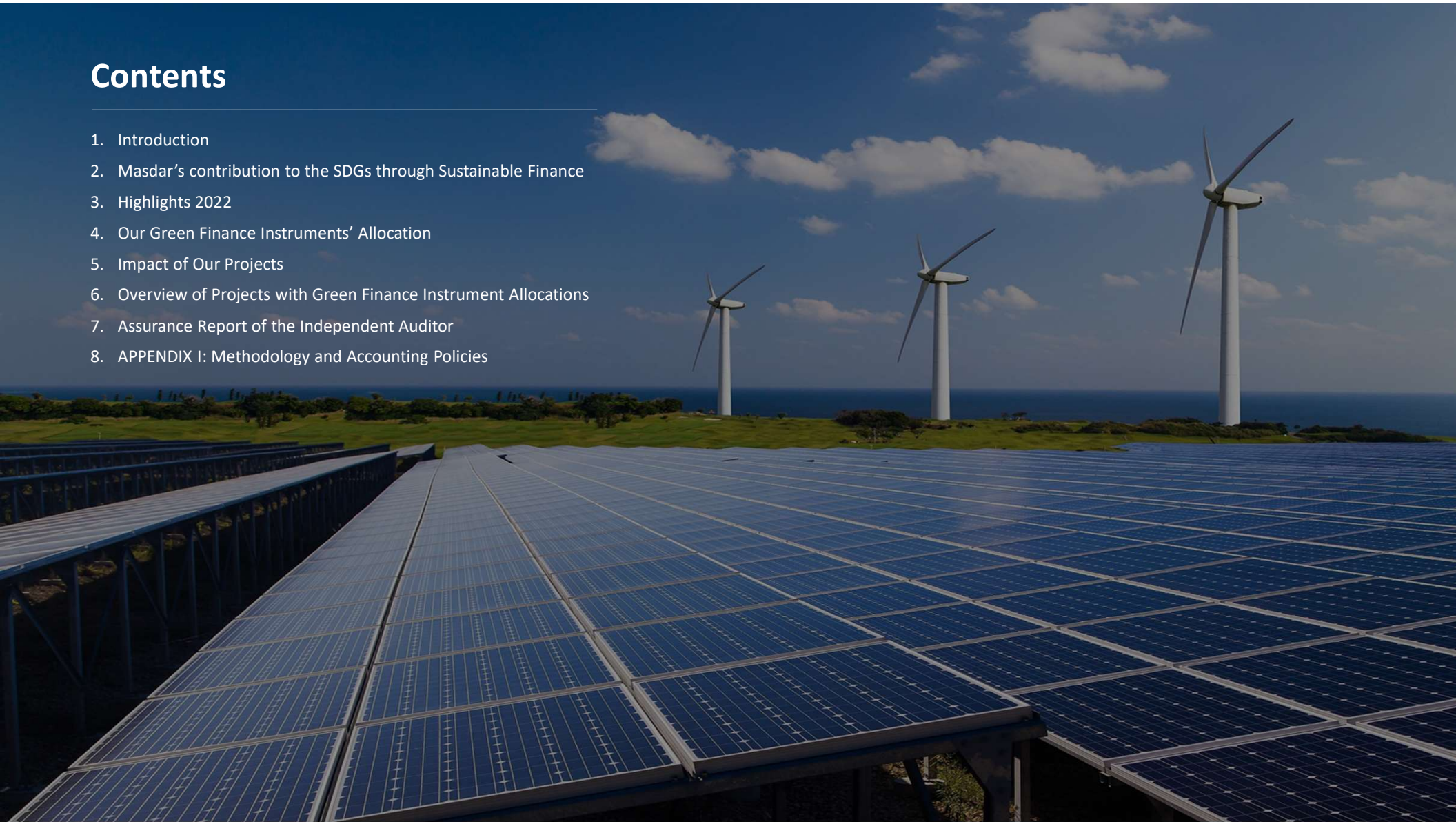
Masdar – Green Finance Report

Allocation and Impact Report 2022

Assurance Approach

Abu Dhabi Future Energy Company PJSC – Masdar (Masdar) appointed Ernst & Young LLP (EY) to provide independent assurance over certain sustainability metrics, indicated with an (*) in this report. The assurance engagement was planned and performed in accordance with the International Standard on Assurance Engagements (UK) 3000 (July 2020), Assurance Engagements Other than Audits or Reviews of Historical Financial Information. An assurance report was issued and is included within this consolidated report which includes further details on the scope, respective responsibilities, work performed, limitations and conclusion.

Contents



1. Introduction

Masdar as a pioneer in renewable energy

Abu Dhabi Future Energy Company PJSC – Masdar ("**Masdar**") is proud to present its first Green Finance Allocations and Impact Report. After the publication of its Green Finance Framework in March 2023, this public report aims at bringing transparency on our approach to Green Finance by reporting on the Green Finance Instruments already existing and the projects financed by them.

Since Masdar was first established by the UAE leadership in 2006 as a renewable energy pioneer, Masdar has been on a path of unprecedented growth that has accelerated the deployment of clean energy at home and around the world. Today, Masdar has grown to become a global clean energy powerhouse, active in over 40 countries across five continents. Masdar's portfolio now encompasses over 20 gigawatts ("**GW**") of clean energy capacity, representing an overall investment commitment of combined projected value of more than U.S.$30 billion.

In 2022, Masdar officially welcomed Abu Dhabi National Oil Company **("ADNOC**") and Abu Dhabi National Energy Company PJSC **("TAQA")** as Masdar's shareholders alongside Mubadala Investment Company **("Mubadala**"), setting out on an ambitious course to grow our clean energy capacity to 100 GW by 2030. In doing so, we also continued to build on Masdar's strong foundations for achieving this milestone, which are some of the most ambitious clean energy targets in the world.

As a clean energy pioneer, Masdar's ambitions are built upon its commitment to sustainability and upholding the highest ESG standards. In every project we undertake in the UAE and around the world, ESG is woven into everything we do as we strive towards reaching net-zero goals on a global scale. Ultimately, central to our mission is to ensure we have a positive impact on the environment and support all communities in reducing their carbon footprint.

COP 28

Toward the end of 2023, the United Arab Emirates will have the honour of hosting the 28th session of the Conference of the Parties to the United Nations Framework Convention on Climate Change – better known as COP28. The Emirates' COP will be particularly significant, as it marks the conclusion of the first 'Global Stocktake' on the Paris Agreement to help align efforts on global climate action.

COP28 presents an opportunity to showcase the ambitious solutions and technologies Masdar, as the UAE's clean energy pioneer and sustainability trailblazer, has been developing to tackle global energy challenges. Masdar continues to target growth opportunities around the world, including in the US, MENA, CIS, APAC and key European countries, as well as playing a central role in providing the clean energy needed for the UAE to achieve its own net zero ambitions. At COP28, Masdar will share practical and innovative solutions that will help nations around the world ensure their energy security, while reducing emissions as we all accelerate toward a net zero future.

2. Masdar's contribution to the SDGs through Sustainable Finance

As a prominent player in renewable energy and clean technology, Masdar feels a responsibility to leverage our resources and innovative capabilities to contribute to the achievement of the UN's Sustainable Development Goals ("**UN SDGs**"). As a result, Masdar is making a significant contribution across multiple SDGs through its core operations and strategic platforms. This is especially important in how Masdar chooses its investments. Since 2006, Masdar has built a balanced and resilient portfolio that has delivered long-term value and strong operational results, while prioritising positive environmental and social impact. Masdar's Green Finance Framework seeks to contribute to the UN SDG 7 (Affordable and Clean Energy) and 13 (Climate Action) in particular.

Affordable and Clean Energy

Masdar has made several efforts to contribute to the UN SDG 7 (Affordable and Clean Energy). The company has a global target of 100 GW of renewable energy capacity by 2030, and in 2022 Masdar achieved a total production capacity of 15 GW across its clean energy projects worldwide.

Climate Action

Masdar's projects have a direct and tangible impact in the fight against climate change around the world. In 2022, Masdar demonstrated this through abating more than 10 million tonnes of CO2 emissions.

Masdar's approach to managing environmental and social issues

Masdar acts on its sustainability vision and mission by implementing key policies that prioritize positive environmental impact and embed sustainable practices at the core of the business. All our employees are trained in the right policies and procedures to ensure that every step is taken in the right direction. These policies include:

Environmental and Social Impact Assessment	Health, Safety, Environment and Quality	Supply chain & Procurement	Non-discrimination
All our clean energy projects are subject to mandatory environmental impact assessments. This includes Biodiversity Management Plans to demonstrate no net loss of natural habitat and species occurs, with appropriate mitigation measures in place. In order to promote transparency, the Environmental and Social Impact Assessments of our projects are publicly available for consultation.	A Corporate Quality, Health, Safety and Environment ("**QHSE**") and Occupational Safety and Health ("**OSH**") management systems, which reference achieving no damage to the environment and no risk for stakeholders. We are also certified for ISO 45001:2018 Management system. All our Policies and Procedures are in line with this.	A sustainable procurement policy, which is followed by the procurement committees, tender committee and bid opening committee. We require all suppliers to disclose information on their sustainability performance. As part of the sourcing of the photovoltaic modules for its projects, Masdar undertakes to ensure there is no forced labor in the supply chain and ensures compliance with Internationally recognized environmental and social standards (including the International Labor Organization conventions).[1]	We have zero-tolerance towards discrimination, violence, abuse and sexual harassment. Our equal pay policy advocates that the salary of each employee is directly driven by the job evaluation and grading scale.

1. More details about our actions and Supply Chain policies can be found in our Sustainability Report 2022.

3. Highlights of 2022

Protect the planet and power the future

As of December 2022, Masdar has entered a new shareholding structure with TAQA, Mubadala, and ADNOC partnering under the Masdar brand to create a truly global, clean energy powerhouse intended to spearhead the country's drive to net-zero carbon by 2050. Masdar is now targeting a total capacity beyond 100 GW by 2030, with the goal of reaching 200 GW or more in the coming years and producing 1 million tons of green hydrogen by 2030 through its newly announced green hydrogen business.

We issued our inaugural Green Finance Framework to reflect our growth ambition

To finance our ambition, Masdar seeks to introduce itself to the sustainable debt capital markets and invite financial institutions and investors to be a part of this journey to clean energy. In preparation to this, on 23 February 2023, Masdar published its inaugural Green Finance Framework ("GFF") (updated on 18 May 2023 pursuant to the release of the latest Green Loan Principles and Climate Bond Standard v4) which was assigned a Sustainability Quality Score of SQS1 (Excellent) – the highest possible rating – by Moody's Investors Service, its Second Party Opinion provider. The GFF was developed jointly with BNP Paribas and SMBC Group as Green Advisors to Masdar. The rating of SQS1 reflects the best-in-class alignment of the GFF with the four components of the International Capital Markets Association's Green Bond Principles ("GBP"), dated 2021, and the Green Loan Principles ("GLP") of the Asia Pacific Loan Market Association, the Loan Market Association, and the Loan Syndications and Trading Association, dated 2023, and a high expected contribution to sustainability.

ESG is at the core of our investment decisions

To further scale up investments in projects that deliver positive environmental, economic and social impacts, Masdar has always recognised that ESG must be at the core of the investment decisions.

Masdar launched its GFF to provide investors and stakeholders with information regarding its commitment to allocate the proceeds of Green Finance Instruments in a manner consistent with the highest ESG standards. The GFF will serve as a reference for any and all Green Financial Instruments – including bonds, loans, private placements, and sukuk – that Masdar raises to fund investments in green eligible projects at home and overseas.

We signed new agreements to develop renewable energy that increased our combined capacity to over 20 GW

In 2022, as part of our commitment to help countries in their transition to clean energy whilst supporting the nations' ongoing sustainable economic development, Masdar signed agreements to develop renewable energy projects that increased our combined capacity by 33% to over 20 GW. We have allocated U.S.$ 143 million(*) from the proceeds of Masdar's first green 'bridge-to-bond' facility to finance Masdar's equity contributions to the following utility-scale renewable energy projects:

- Garadagh solar PV in Azerbaijan (230 MW); and
- Zarafshan onshore wind in Uzbekistan (522 MW).

With our allocated proceeds from the Green Finance Instruments, Masdar and our investors support progress towards the commitment under the Paris Agreement and contributions to the UN SDGs #7 (Affordable and Clean Energy) and #13 (Climate Action).

(*) Within scope of EY Assurance. Refer to the front page and to section 6 of this report for more information.

4. Our Green Finance Instruments' Allocation

All Masdar's future issuances in the loan and debt capital markets will be guided by our GFF, in line with best practices in the sustainable finance industry.

3.1 Total Amounts Allocated by Green Finance Instrument

In 2022, Masdar reached financial close on its first green 'bridge-to-bond' facility with First Abu Dhabi Bank and SMBC Group as lenders. The U.S.$ 250 million(*) facility was earmarked to be used in accordance with the GFF to finance Masdar's equity contributions to its new solar and wind projects in the Caucuses and Central Asia. The table below provides details of Masdar outstanding green loans, including total allocated amounts:

Type	Issue date	Net Proceeds (U.S.$)	Proceeds Disbursed (U.S.$)	Proceeds Allocated 2022 (U.S.$)	Total Proceeds Allocated (U.S.$)	Unallocated Proceeds (U.S.$)
Syndicated green loan	8 August 2022	250,000,000	145,000,000	143,215,121	143,215,121	106,784,879
Total		**250,000,000**	**145,000,000**	**143,215,121**	**143,215,121**	**106,784,879**

3.2 Green Finance Instrument Allocations by Project

As at 31 December 2022, a total of U.S.$143 million(*) green loan proceeds had been allocated to two renewable energy projects: 1) Garadagh solar PV in Azerbaijan, and 2) Zarafshan onshore wind in Uzbekistan. Green Finance Instrument allocations by project:

	Project	Technology	Proceeds Allocated as at 31 December 2022 (U.S.$)
	Garadagh	Solar PV	28,500,000
	Zarafshan	Onshore Wind	114,715,121
Total			**143,215,121**

(*) Within scope of EY Assurance. Refer to the front page and to section 6 of this report for more information.

5. Impact of Our Projects

All projects developed and managed by Masdar aim at delivering environmental and social benefits to local communities and to the world in general. The positive impact from the projects financed by the U.S.$250m Green Loan are described below. We have estimated these impacts in accordance with the indicators proposed in Masdar's GFF. The greenhouse gas ("**GHG**") emissions avoided

Project	Technology	Country	Project Status	Scheduled Commercial Operations Date	Installed Capactiy (MW) (*)	Annual energy generation (GWh) (*)	Emission factors[3] (gCO_2/kWh)	Estimated GHG Avoided (tonnes CO_2 eq.) (*)
Garadagh	Solar PV	Azerbaijan	Under Construction	December 2023	230	577[1]	478	275,643
Zarafshan	Onshore Wind	Uzbekistan	Under Construction	Mid-June 2025	522	1,805[2]	558	1,007,048
Total					**752**	**2,382**	**1,036**	**1,282,691**

(1) P50 annual generation per ILF yield assessment (projects lenders' technical advisors)

(2) P50 annual generation per MEGAJOULE yield assessment (projects lenders' technical advisors)

(3). Source: Emission factors based on the International Financial Institution ("IFI") Dataset of Default Grid Factors v.3.2 from April 2022, created by the IFI Technical Working Group on GHG Accounting: **https://unfccc.int/climate-action/sectoral-engagement/ifis-harmonization-of-standards-for-ghg-accounting/ifi-twg-list-of-methodologies**. The methodological approach can be found on the UNFCCC's website **https://unfccc.int/sites/default/files/resource/IFITWG_Methodological_approach_to_common_dataset.pdf ; https://unfccc.int/documents/461676**

The Garadagh and Zarafshan projects are fully owned by Masdar and they are expected to commence operations in December 2023 and June 2025 respectively. The figures shown in terms of energy generated and GHG avoided are estimations based on the projects' technical features at project stage. For details of these estimations, please consult the Appendix I (Methodology and Accounting Policies).

As a result, the potential estimated avoided emissions from the Green Loan referenced under this report, as of 31 December 2022, is 8,971 tCO2 eq./ m U.S.$(*).

(*) Within scope of EY Assurance. Refer to the front page and to section 6 of this report for more information.

6. Overview of Projects with Green Finance Allocations

6.1 Garadagh Solar Photovoltaic Plant

Location: Baku and Absheron district, Republic of Azerbaijan

In January 2020, Masdar signed an implementation agreement to develop a utility-scale solar PV project in the Baku and Absheron district of the Republic of Azerbaijan. The 230 MW project is the country's first foreign investment-based independent solar project structured as a public-private partnership. Masdar signed the Investment Agreement with the Government of the Republic of Azerbaijan, and Power Purchase Agreement and Transmission Connection Agreement with state power company Azerenerji OJSC in April 2021. The project entails developing, financing, constructing, and operating of the 230 MWac PV plant, to be located nine kilometers northwest of the Alat settlement in the Republic of Azerbaijan. The plant is expected to start commercial operation in 2023.

The project will help to generate half a billion kilowatt-hours of electricity annually, enough to meet the needs of more than 110,000 homes, and will reduce emissions by over 270,000 tonnes of carbon dioxide a year. The solar power plant will also create new jobs for the local community.

Azerbaijan is targeting to increase its installed power capacity to 30 percent from renewable sources by 2030, as the country looks to diversify its economy and reduce greenhouse gas emissions.

QUICK FACTS

- **230 MW** capacity solar PV plant
- Commercial operation is **expected in 2023**
- Will power approximately **110,000 homes**
- Will reduce emissions by **275,643 tonnes** of carbon dioxide annually

Applicable Environmental and Social Mitigation Programmes Δ

- Pre-construction survey to assess impact on local species of conservation concern
- Micro-siting, protective fencing and translocation of local species where appropriate
- Store hydrocarbons in secured bunds to avoid contamination to natural water sources
- Fires to be controlled and only allowed in fire permitted areas
- Repair of any signs of erosion post construction
- Manage and transport all waste materials in the correct manner to avoid contamination
- Implement a robust Hazardous Materials and Waste Management Plan
- Prohibit forced and harmful child labour for project and its supply chain

Δ The project satisfies both national (Azerbaijan) and international environmental and social standards.

6. Overview of Projects with Green Finance Allocations

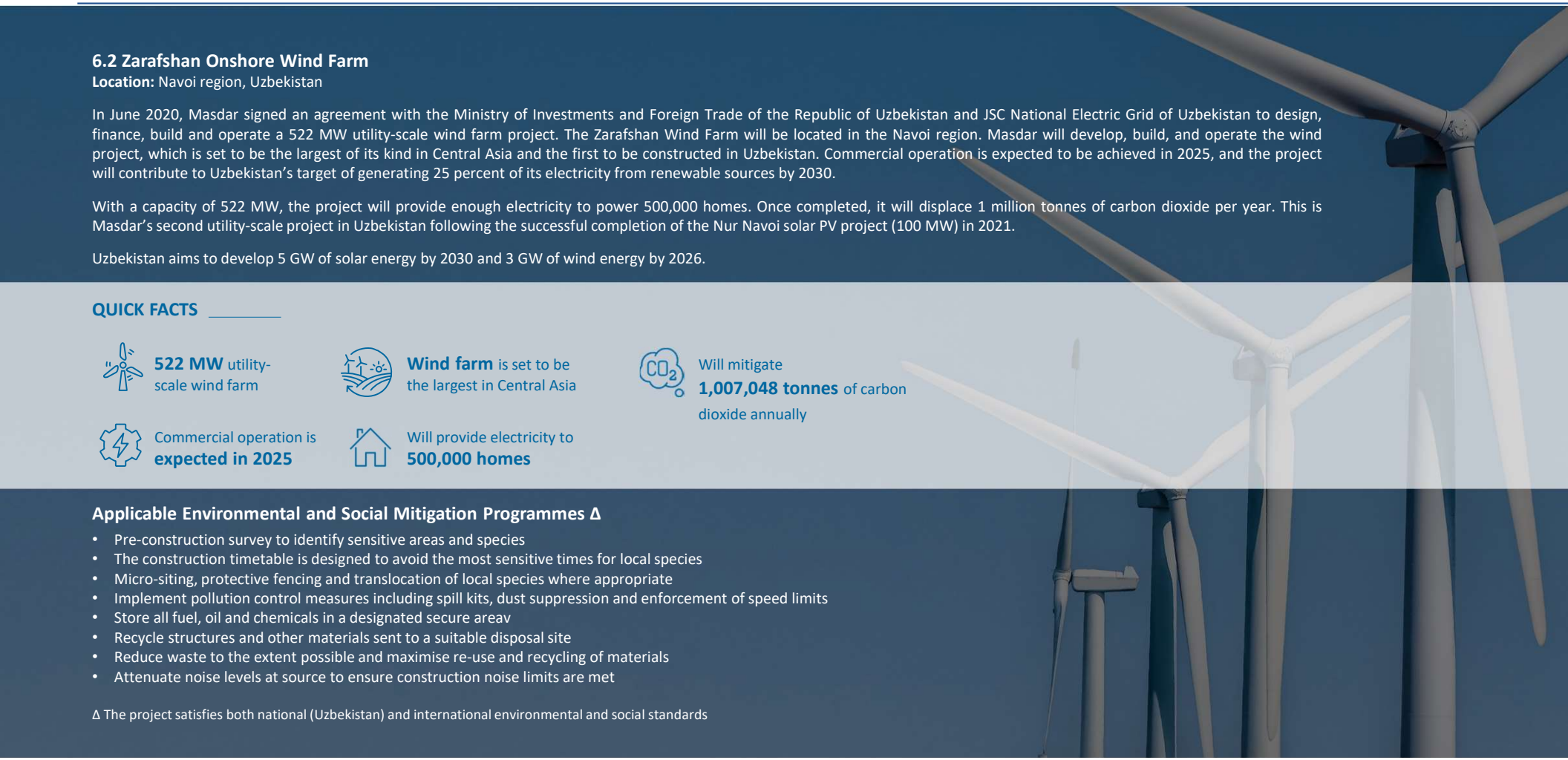
6.2 Zarafshan Onshore Wind Farm

Location: Navoi region, Uzbekistan

In June 2020, Masdar signed an agreement with the Ministry of Investments and Foreign Trade of the Republic of Uzbekistan and JSC National Electric Grid of Uzbekistan to design, finance, build and operate a 522 MW utility-scale wind farm project. The Zarafshan Wind Farm will be located in the Navoi region. Masdar will develop, build, and operate the wind project, which is set to be the largest of its kind in Central Asia and the first to be constructed in Uzbekistan. Commercial operation is expected to be achieved in 2025, and the project will contribute to Uzbekistan's target of generating 25 percent of its electricity from renewable sources by 2030.

With a capacity of 522 MW, the project will provide enough electricity to power 500,000 homes. Once completed, it will displace 1 million tonnes of carbon dioxide per year. This is Masdar's second utility-scale project in Uzbekistan following the successful completion of the Nur Navoi solar PV project (100 MW) in 2021.

Uzbekistan aims to develop 5 GW of solar energy by 2030 and 3 GW of wind energy by 2026.



QUICK FACTS

- **522 MW** utility-scale wind farm
- **Wind farm** is set to be the largest in Central Asia
- Will mitigate **1,007,048 tonnes** of carbon dioxide annually
- Commercial operation is **expected in 2025**
- Will provide electricity to **500,000 homes**

Applicable Environmental and Social Mitigation Programmes Δ

- Pre-construction survey to identify sensitive areas and species
- The construction timetable is designed to avoid the most sensitive times for local species
- Micro-siting, protective fencing and translocation of local species where appropriate
- Implement pollution control measures including spill kits, dust suppression and enforcement of speed limits
- Store all fuel, oil and chemicals in a designated secure areav
- Recycle structures and other materials sent to a suitable disposal site
- Reduce waste to the extent possible and maximise re-use and recycling of materials
- Attenuate noise levels at source to ensure construction noise limits are met

Δ The project satisfies both national (Uzbekistan) and international environmental and social standards

7. Assurance Report (1/3)

Independent assurance report to the directors of Abu Dhabi Future Energy Company PJSC Masdar on non-financial linked KPIS and green debt allocation within the 2022 impact report

This report is produced in accordance with the terms of our engagement letter dated 20th April 2023 for the purpose of reporting to the Directors of Abu Dhabi Future Energy Company PJSC Masdar (the 'company') in connection with the selected green debt allocation and impact reporting metrics as defined within 'Appendix A' (the 'Subject Matter') for the reporting period 31 December 2022.

This report is made solely to the company's Directors, as a body, in accordance with our engagement letter dated 20th April 2023. Those terms permit disclosure on Masdar's website, solely for the purpose of Masdar showing that it has obtained an independent assurance report in connection with the Subject Matter. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the company and the company's Directors as a body, for our examination, for this report, or for the opinions we have formed.

Our work has been undertaken so that we might report to the Directors those matters that we have agreed to state to them in this report and for no other purpose. Our report must not be recited or referred to in whole or in part in any other document nor made available, copied or recited to any other party, in any circumstances, without our express prior written permission.

Responsibilities of the company

As Directors of the company, you are responsible for the Subject Matter which is attached as Appendix A to this report. The Directors of the company remain solely responsible for presenting the Subject Matter in accordance with the Green Finance Framework and the methodology as described within that framework and within the Green Finance Allocations Impact Report (the 'Reporting Criteria').

Responsibilities of Ernst & Young LLP

It is our responsibility to provide a conclusion on the Subject Matter based on our examination. The Green Finance Framework and the methodology as described within that framework and within the Green Finance Allocations Impact Report have been used as the Reporting Criteria against which to evaluate the measurement and presentation of the Subject Matter defined within Appendix A.

Our approach

We conducted our engagement in accordance with International Standard on Assurance Engagements (UK) 3000 (July 2020) Assurance engagements other than audits or reviews of historical financial information ("ISAE (UK) 3000 (July 2020)") as promulgated by the Financial Reporting Council (FRC). For the purpose of the engagement, we have been provided by the Directors with the Subject Matter.

In performing this engagement, we have applied International Standard on Quality Management (ISQM) 1 and the independence and other ethical requirements of the Institute of Chartered Accountants of England and Wales (ICAEW) Code of Ethics (which includes the requirements of the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants (IESBA)).

We have performed the procedures agreed with you and set out in our engagement letter dated 20th April 2023. Our work included, but was not limited to:

- Undertaking management interviews to form an understanding of the reporting process in relation to the Subject Matter;
- Performing walkthroughs to gain an understanding of Masdar's systems and procedures in place to capture, collate, aggregate, validate and source data required to generate the Subject Matter;
- Identifying the risk of material misstatement for each in-scope Key Performance Indicator and/or Metric and designing analytical or substantive procedures to obtain sufficient appropriate evidence to form our conclusion over the Subject Matter;

7. Assurance Report (2/3)

- Performing analytical procedures over the Subject Matter to identify potential anomalies within the Subject Matter and obtaining Management explanations;
- On a sample basis, executing test of details to substantiate the completeness and accuracy of the calculation as defined by the Reporting Criteria and reconciling Information Provided by the Entity (IPE) to underlying source data;
- Reading the supporting narrative to the Subject Matter to confirm that it has been reported in a fair, balanced and understandable manner when compared to the Reporting Criteria; and
- Obtaining management representations.

The objective of a limited assurance engagement is to perform such procedures as to obtain information and explanations in order to provide us with sufficient appropriate evidence to express a negative conclusion on the Subject Matter. The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.

Inherent limitations

Our conclusion is based on historical information and the projection of any information or conclusions in the attached report to any future periods would be inappropriate. Our examination excludes audit procedures such as verification of all assets, liabilities and transactions and is substantially less in scope than an audit performed in accordance with International Standards on Auditing (UK) and therefore provides a lower level of assurance than an audit. Accordingly, we do not express an audit opinion on the information.

Conclusion

Based on the procedures performed and evidence obtained, nothing has come to our attention that causes us to believe that the accompanying Subject Matter as defined in Appendix A is not fairly stated, in all material respects, based on the Reporting Criteria.

Ernst & Young LLP
London, United Kingdom
23rd June 2023

7. Assurance Report (3/3)

Appendix A: Subject Matter Information

Green debt allocation and impact reporting metrics

Subject Matter Information subject to limited assurance			Criteria within Masdar Green Finance Framework
Green debt allocation and impact reporting metrics: Renewable energy	1a	Renewable energy capacity installed in MW	1.2 Masdar's Renewable Energy Portfolio
	1b	Annual GHG emissions abatement in tonnes of CO2 equivalent	
	1c	Annual renewable energy generated (or estimated) in MWh	
	1d	Green debt allocation of proceeds ($m)	

8. Appendix I: Methodology and Accounting Policies

Energy Generated

The energy generated by the projects under this report is based either on a) estimated energy under a P50 scenario, for projects where generation info is not available (e.g. projects under construction), or b) actual energy generated measured at the connection point with the grid, according to technical monitoring:

- Garadagh – P50 annual generation of 577 GWh per ILF yield assessment (project lenders' technical advisors); and
- Zarafshan – P50 annual generation of 1,805 GWh per MEGAJOULE yield assessment (project lenders' technical advisors).

Greenhouse Gas Emissions avoided

The methodology used to estimate the GHG avoided from our projects follows the EIB Project Carbon Footprint Methodologies V11.3, as published in January 2023[2]. The amount of CO2 equivalent avoided is based on projected scenarios using the latest national grid factors defined by the United Nations Framework Convention on Climate Change[3] (as suggested by the EIB handbook) and the Energy Generated by our projects (using the P50 estimations or actual energy generation when available). For avoidance of doubt, power generated by photovoltaic and wind power plants are considered to have no direct carbon emissions. Indirect emissions are also not considered for the purpose of this exercise.

2. EIB Project Carbon Footprint Methodologies
3. Harmonized IFI Default Grid Factors 2021 v3.2 | UNFCCC