

## GREEN STAR SUSTAINABLE PRECINCTS

### LOCAL CONTEXT REPORT FOR MOROCCO

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GREEN STAR SA - MOROCCO - LOCAL CONTEXT REPORT – REVISION 10

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## Contents

Executive Summary.....	3
Acronyms .....	18
Introduction .....	19
Background .....	22
Applying Green Star SA Credit by Credit.....	44
Credit Overview .....	46
Governance.....	48
Livability .....	51
Economic Prosperity .....	54
Environment .....	57
APPENDIX A: ENV-25 Greenhouse Gas Emissions.....	61

# Executive Summary

## Overview of the Morocco Local Context Report

*“The degradation of our environment is now a tangible reality. It poses a threat that we must address together. As part of its Nationally Determined Contribution, the Kingdom of Morocco, a country with low greenhouse gas emissions, has undertaken to reduce its emissions by 42%, by 2030. An inclusive, comprehensive process has also been launched to reduce emissions beyond that figure. As a result, last November, my country decided to continue accelerating its energy transition, setting the more ambitious goal of securing 52% of its electricity production from renewable energy sources by 2030. Africa, a continent which is suffering from the impact of climate change, must be a priority in our collective action.”* (King Mohammed VI, 2019)

This report serves as a local context assessment to allow for Sustainable Precincts projects in Morocco to be certified using the Green Star SA Sustainable Precincts rating tool.

The Green Building Council of South Africa (GBCSA) is currently licensed by the Green Building Council of Australia (GBCA) to allow certification using the Green Star SA v1 rating tools only in South Africa and Africa -. Projects seeking certification in Africa must first undertake a Local Context Report (LCR) process in order to adequately customize the tool for the local context. Through this SUP local context assessment, the GBCSA aims to apply for approval from the GBCA to allow for certification in Morocco using the Green Star SA-Sustainable Precincts (with some minor adaptations recommended in this report).

The GBCSA would manage and allow the certification through its existing established processes so that the project can be eligible for a Green Star South Africa certification.

## Recommendations

A summary of recommended credits requiring Credit Interpretation Requests (CIRs), Technical Clarifications (TCs) or adaptations can be found below, where credits are proposed to remain unchanged project teams may apply for changes through the TC/CIR process on the GBCSA website). All references that have been included as part of the Local Context Report, have been reviewed and found to be equal in their outcome’s objectives:

Credit	Discussion and Recommendation
<b>GOV – 1</b>	GOV -1 should be kept in its current form, with no changes.
<b>GOV – 2</b>	<p>Stakeholders noted that this may be difficult to achieve in the Moroccan Context, however improving urban design through better engagement with stakeholders is key and Green Star Sustainable Precincts will help improve this process.</p> <p>Dahir Law 12-90 on urban planning, sets out the general principles applicable to development planning and zoning schemes and legally defines all the various urban planning documents which are :Urban Development Master Plans (Schémas Directeurs d'Aménagement Urbain),Zoning Plans (plans de zonage), Development plans and Rural agglomeration plans.</p> <p>Development plans and zoning schemes are established through the issue of Urban Development Master Plans (Schémas Directeurs d'Aménagement Urbain). Development plans (plans d'aménagement) are governed by (art.18 - <b>31</b>) of Dahir law No <b>12-90</b> which set up its scope of application , purpose , investigation/ approval procedure , effects, and implementation .</p> <p>GOV – 2 should be kept in its current form, with an adaptation to include referencing Dahir Law No 12-90 related to urban planning<sup>1</sup>, replacing City of Cape Town Urban Design Policy: Sep 2013 to render the credit more applicable to Morocco.</p>
<b>GOV – 3</b>	<p>Public participation guidelines already exist in Morocco and from research it was noted that the IAP2<sup>2</sup> (International Association for Public Participation) guidelines do not yet exist for the Morocco context; however, projects can follow the IAP2 International Guidelines<sup>3</sup>. TMG made numerous efforts at communicating and engaging with IAP2 regarding the registration of Morocco for IAP2, however these were unsuccessful.</p> <p>Projects will align their stakeholder engagement strategy and commitment with the International IAP2 Core Values.</p> <p>Alternative compliance can also be followed where projects also have the option to align the Public Participation carried out during the <b>Environmental Impact Assessment</b> (EIA) process, specifically known as Decree 2-04-564<sup>4</sup> with GOV-03 requirements, ensuring that all the GOV-03 requirements are addressed. Decree No. 2-04-564 of 5 Kaada 1429 (4 November 2008) lays out the conditions for the organization and conduct of public enquiries for projects subject to Environmental Impact Assessments. Decree No. 2-04-564 of 4 November 2008, defines the terms of the organization and conduct of the public inquiry into projects subject to Environmental Impacts Studies, associated the populations concerned in the assessment of the project's possible impact on the environment and afforded them the opportunity to submit their observations and proposals on this aspect. EIA's are conducted through public consultation and rely on field visits, the use of basic documents, discussions with central and decentralized services, regional property services, economic operators, socio-professional groups, local residents and administrative authorities.</p> <p>Law 12-03 on EIA is to evaluate, methodically beforehand, possible repercussions of all planned activities, construction projects, development and works, undertaken by any individual organization on the environment.</p>

<sup>1</sup> Dahir No 1-92-31 dated 17 June 1992, promulgating Law No 12-90 on urban planning, as amended by Dahir No 1-16-124 dated 25 August 2016

<sup>2</sup> International Association for Public Participation

<https://www.google.com/search?q=IAP2&oq=IAP2&aqs=chrome..69i57j69i59l2.3496j0j7&sourceid=chrome&ie=UTF-8>

<sup>3</sup> IAP2 International Guidelines <https://www.iap2.org/page/about>

<sup>4</sup> Decree n ° 2-04-564 of 5 kaada 1429 (November 4, 2008)

The public participation process which fixes the methods of organization and progress of the public inquiry (carried out during an EIA process, specifically known as Decree 2-04-564) is carried out by a competent company, who is registered under Ministry of Equipment<sup>5</sup>.

Where projects are to follow the EIA, public participation process a CIR must be submitted. In electing to use the EIA public participation process for compliance, project teams will need to demonstrate that all the requirements outlined within the GOV-03 Engagement credits have been incorporated and addressed during the public participation process.

GOV – 3 should be kept in its current form, with an alternative compliance route for projects to follow Dahir Law No 12.03 governing the EIA process in Morocco, specifically Decree 2-04-564 of 5 Kaada 1429<sup>6</sup> which outlines the public participation process.

**GOV – 4** In an effort to combat climate change, Morocco has been praised by setting ambitious national targets backed by policies as well as playing a leading role in international climate initiatives, positioning itself as an active advocate of the global climate change agenda and local actions, including across the African continent.

Morocco ratified the 1992 United Nations Framework Convention on Climate Change (UNFCCC) in 1995 and the 1997 Kyoto Protocol in 2002<sup>7</sup>. Climate change is a priority for Morocco in its multilateral engagement. The government acted as a host of COP7 in 2001, where the Marrakech Agreement was reached, and the COP22 in 2016 in Marrakech -Morocco, where the Paris Agreement has been ratified. Lately, Morocco has acted as a powerful advocate for Africa at COP23 in Bonn and at the COP24 in Katowice.

UNDP Climate Change Country Profiles Morocco referencing climate scenarios for Morocco, will replace, the DEA (Department of Environmental Affairs). 2013. Long-Term Adaptation Scenarios Flagship Research Program (LTAS) for South Africa. Climate Trends and Scenarios for South Africa Pretoria, South Africa to render the credit more applicable to Morocco.

GOV – 4 should be kept in its current form, with an inclusion of additional references (see below) for additional local guidance and, to assist in rendering the credit more applicable to the Moroccan Market. As the credit is to be compiled by a suitably qualified individual, the onus will be on the said professional to use the correct Global Circulation Models (GCMs) endorsed by the IPCC<sup>8</sup> (Intergovernmental Panel on Climate Change).

**Additional references:**

- Moroccan Climate Change Policy (MCCP), March 2014<sup>9</sup>
- National Plan against Global Warming (PNRC, 2009)<sup>10</sup>
- National Adaptation Plan to Climate Change 2030 (NAP)<sup>11</sup>
- National Strategy for Sustainable Development (NSSD) for 2017-2030<sup>12</sup>
- Law n°99-12 of March 06, 2014 related to National Charter for Environment and

<sup>5</sup> Ministry of Equipment <http://www.equipement.gov.ma/en/Pages/home.aspx>

<sup>6</sup> Decree n ° 2-04-564 of 5 kaada 1429 (November 4, 2008)

<sup>7</sup> United Nations Framework Convention on Climate Change

<sup>8</sup> IPCC <https://www.ipcc.ch/>

<sup>9</sup> Moroccan Climate Change Policy, March 2015 - <https://www.4c.ma/medias/MCCP%20-%20Moroccan%20Climate%20Change%20Policy.pdf>

<sup>10</sup> National Plan against Global Warming, 2009

<sup>11</sup> National Adaptation Plan to Climate Change, 2030

<sup>12</sup> National Strategy for Sustainable Development (NSSD) for 2017-2030  
[https://www.greengrowthknowledge.org/sites/default/files/downloads/policy-database/ENG-SNDD\\_RESUME%20EXECUTIF-V24-D%20\(1\).pdf](https://www.greengrowthknowledge.org/sites/default/files/downloads/policy-database/ENG-SNDD_RESUME%20EXECUTIF-V24-D%20(1).pdf)

	<p>Sustainable Development <a href="http://www.maroc.ma/en/content/environnement">http://www.maroc.ma/en/content/environnement</a> <sup>13</sup></p> <ul style="list-style-type: none"> <li>• National Directorate of Meteorology - <a href="http://www.marocmeteo.ma/">http://www.marocmeteo.ma/</a> <sup>14</sup></li> <li>• The Morocco Competence Center on Climate Change (4C) - <a href="https://www.4c.ma/en">https://www.4c.ma/en</a> <sup>15</sup></li> <li>• Roadmap for Integrated Climate Risk management, May 2019 <sup>16</sup></li> <li>• Integrated Disaster Risk Management and Resilience Program for Results, 2016 <sup>17</sup></li> </ul>
<b>GOV – 5</b>	<p>Stakeholder discussion and research found that Corporate Responsibility Policy reflecting the core subjects identified in ISO 26000 are applicable in the Morocco context as ISO standards are currently already used by larger corporations.</p> <p>As an alternative compliance path, , CGEM<sup>18</sup> (General Confederation of Moroccan Enterprises) who is the representative of the private sector to public authorities and institutions in Morocco, follows the underlying principles of ISO 26000 core subjects, specifying the guidelines of social responsibility of organisations. CGEM’s CSR Charter aligns to the 7 core subjects of ISO 26000, and includes the following:</p> <ul style="list-style-type: none"> <li>• Respecting Human Rights</li> <li>• Improving employment, working conditions and professional relationships</li> <li>• Protecting the environment</li> <li>• Preventing corruption</li> <li>• Respecting the rule of healthy competition</li> <li>• Strengthening the transparency of corporate governance</li> <li>• Respecting the interests of customers and consumers</li> <li>• Promoting corporate responsibility of suppliers and subcontractors</li> <li>• Developing societal commitment</li> </ul> <p>Projects have the opportunity to align their Corporate Responsibility with CGEM’s CSR Charter, with GOV-05 requirements, ensuring that all the GOV-05 requirements are addressed.</p> <p>GOV – 5 should be kept in its current form, with an inclusion of an alternative compliance path, to include CGEM’s CSR Charter as an alternative for Morocco projects, to assist in rendering the credit more applicable to the Moroccan Market. If CGEM’s CSR Charter is used, projects are to submit a CIR and ensure adherence to the core subjects identified in ISO 26000 and GOV – 5 requirements.</p>
<b>GOV – 6</b>	GOV – 6 should be kept in its current form, with no changes.
<b>GOV – 7</b>	<p>This credit was discussed by stakeholders and it was noted that currently ‘community facility management’ is not common; however, building facility management is present in Morocco.</p> <p>GOV – 7 should be kept in its current form, with no changes.</p>
<b>GOV – 8</b>	The first part of the credit requires that appointed contractors with contract amounts over R50 million (ZAR) to be ISO 14001 Certified. Research had to be conducted to convert the ZAR amount to MAD. In order to convert the ZAR to MAD, two alternatives were considered: Purchasing Power

<sup>13</sup> Law n°99-12 of March 06, 2014 related to National Charter for Environment and Sustainable Development <http://www.maroc.ma/en/content/environnement>

<sup>14</sup> National Directorate of Meteorology - <http://www.marocmeteo.ma/>

<sup>15</sup> The Morocco Competence Center on Climate Change (4C) - <https://www.4c.ma/en>

<sup>16</sup> Roadmap for Integrated Climate Risk management, May 2019

[https://www.indexinsuranceforum.org/sites/default/files/Roadmap\\_ACRI\\_DINA4\\_Marokko\\_WEB\\_190513.pdf](https://www.indexinsuranceforum.org/sites/default/files/Roadmap_ACRI_DINA4_Marokko_WEB_190513.pdf)

<sup>17</sup> Roadmap for Integrated Climate Risk management, May 2019 -

<http://documents.worldbank.org/curated/en/191191472590290382/pdf/104208-PAD-ARABIC-P144539.pdf>

<sup>18</sup> CGEM <http://www.cgem.ma/>

Parity<sup>19</sup> and direct conversion. Purchasing Power was used with the contract amount set at 29 million MAD.

The second part of the credit references the use of the Western Cape Environmental Management Plan Guidelines; however this will be replaced by Dahir Law No 12-03<sup>20</sup> related to Environmental Impact Studies for the development of the Environmental Management System (Système de Management de l'Environnement (SME). Law 12-03 on EIA is to evaluate, methodically beforehand, possible repercussions of all planned activities, construction projects, development and works, undertaken by any individual organization on the environment. The direct and indirect effects are evaluated, particularly on humans, animals, plants, soils, water, air, the climate, the natural setting as well as on public health and safety. Law 12-03 on EIA was found to be equivalent to that of Western Cape Environmental Management Plan (EMP) Guidelines.

Reference to the Framework Law No 99-12<sup>21</sup> on the National Charter for the Environment and Sustainable Development and Dahir Law No 11-03<sup>22</sup> on protection and the enhancement of the Environment will also be included as additional references for guidance to render the credit more applicable to Morocco..

GOV – 8 should be kept in its current form with an adaptation to value MAD (Moroccan Dirham) amounts to make it more applicable to the Moroccan Market.

**LIV – 09** Through stakeholder workshops, it was found that specific design of streets types and pedestrian walkways are not generic, and that they are determined only through local planning documents for each project which in turn is dependent on the location, size, politics and history of the city/site. Following extensive engagement with local stakeholders and the GBCSA, the Australian Standards were chosen to help model future Moroccan standards as Moroccan Stakeholders believe that this is the standard that they would like to see in place going forward as it is more similar to the Australian receiving environment, than South Africa.

Therefore, projects will follow Communities Submission Guidelines v1.1, AMCORD<sup>23</sup> (Australian Model Code For Residential Development) until a local standard becomes available.

Dahir Law No 12-90<sup>24</sup> on Urban planning will be used as an additional reference in guiding the project teams on local law.

No changes are proposed for credit 9.2 Recreational Facilities. It is suggested that the guidelines provided by the Communities Submission Guidelines v1.1 be followed until an equivalent local standard has become available. An additional guidance reference has been added under additional Information namely the Decret n° 2-13-424<sup>25</sup> on General Building Regulations in Morocco (Règlement Général de Construction au Maroc (RGC) and Dahir Law No 12-90<sup>26</sup> on urban planning credit 9.3 Healthy Places as additional guidance.

<sup>19</sup> The World Bank <https://data.worldbank.org/indicator/pa.nus.ppp>

<sup>20</sup> Dahir No 1-03-60 dated 12 May 2003 promulgating Law No 12-03 on environmental impact assessments.

<sup>21</sup> Dahir n°1-14-09 of 4 Joumada I 1435 ( March 6,2014) bearing promulgation of Framework Law No.99-12 on the National Charter for the Environment and Sustainable Development.

<sup>22</sup> Dahir n°1-03-59 of 10 rebii I 1424 (May 12,2003) bearing promulgation of Law No 11-03 on Protection and the Enhancement of the Environment.

<sup>23</sup> AMCORD <https://www.creationcorporation.com.au/AMCORD/AMCORD/AMCORD.PDF>

<sup>24</sup> Dahir No 1-92-31 dated 17 June 1992, promulgating Law No 12-90 on urban planning, as amended by Dahir No 1-16-124 dated 25 August 2016, promulgating Law No 66-12 on the control and infringements in the field of town planning and construction

<sup>25</sup> Decree n° 2-13-424 of 13 rejev 1434 (May 24, 2013)

<sup>26</sup> Dahir No 1-92-31 dated 17 June 1992, promulgating Law No 12-90 on urban planning, as amended by Dahir No 1-16-124 dated 25 August 2016



<b>LIV – 10</b>	LIV – 10 should be kept in its current form, with no changes.
<b>LIV – 11</b>	<p>LIV – 11 should be kept in its current form and where projects are to use alternative certification systems not currently listed, project teams are to submit a CIR providing motivation and justification as to the equivalence of the alternative certification rating tool. Additionally, projects must provide minimum energy efficiency requirements which are in line with the Green Star SA Multi Unit Residential (MURT) Tool ensuring the alternative certification tool meets the credentials, environmental impact and rigor of the GSSA MURT tool.</p>
<b>LIV – 12</b>	<p>Stakeholders noted that Culture and Heritage is a very important aspect for Morocco also ensuring that a large emphasis is placed on educating future generations on the heritage of Morocco. Morocco is home to 10 UNESCO World Heritage Sites<sup>27</sup>.</p> <p>Law 22-80 relating to the Conservation of Historic Monuments and Sites, and the registration of Art Objects and Antiquities, will be added as an additional guidance reference for Morocco projects. Law 22-80 is the guiding law in terms of on the conservation of historical monuments and sites, inscriptions, objects of art and antiquity.</p> <p>LIV – 12 should be kept in its current form, with an inclusion for additional guidance references, specifically, Law No 22-80<sup>28</sup> relating to the Conservation of Historic Monuments and Sites, and the registration of Art Objects and Antiquities, to assist in rendering the credit more applicable to the Moroccan Market.</p>
<b>LIV – 13</b>	LIV – 13 should be kept in its current form, with no changes.
<b>LIV – 14</b>	<p>Production of fresh food in Morocco is supported by Green Morocco Plan, 2010<sup>29</sup> (Plan Maroc Vert) and lately Green Generation 2020-2030 , which is new development strategy for the agricultural sector. The project aims to make agriculture one of the main contributors to Morocco’s economy, by modernizing agriculture, promoting agricultural investments, integrating the supply chain, ensuring food security, boosting agricultural exports and valuing local produce. Most Moroccans still rely on traditional distribution channels for fresh food. Almost 50% of the population reside in rural areas or small cities, where they do not have access to modern grocery retailers, such as supermarkets and hypermarkets.</p> <p>Green Morocco Plan, 2010 and Green Generation 2020-2030 will be included as an additional reference, which outlines the national agricultural strategy.</p> <p>LIV – 14 should be kept in its current form, with the inclusion of an additional reference, as guidance, specifically, Green Morocco Plan 2010 and Green Generation 2020-2030 , to assist in rendering the credit more applicable to the Moroccan Market.</p>
<b>LIV – 15</b>	<p>Stakeholders noted that developments generally do not take into consideration the aspects of ‘increased visibility’.</p> <p>No policies exist for Designing out Crime in Morocco, and rather in the Moroccan context bespoke processes are undertaken in terms of safety and crime depending on the development and its scale.</p> <p>A review of the Crime Index (which is estimation of overall level of crime in a given city or a country. We consider crime levels lower than 20 as very low, crime levels between 20 and 40 as</p>

<sup>27</sup> UNESCO <https://whc.unesco.org/en/statesparties/ma>

<sup>28</sup> Law 22-80 (decree of 1-80-341 dated 25 December 1980) on cultural and historical heritage

<sup>29</sup> Green Morocco Plan : <http://www.maroc.ma/en/content/green-morocco-plan>

being low, crime levels between 40 and 60 as being moderate, crime levels between 60 and 80 as being high and finally crime levels higher than 80 as being very high) indicates that Australia crime index is at 41,66 and Morocco at 49,06, whereas South Africa is at 77,29.

A review of the Safety Index (a higher safety index, indicating a more safe country) shows that Australia is at 58,34 and Morocco at 50,94, while South Africa, compared to Morocco sits at a low 22,71. Evidence above shows that Morocco is more in line in terms of safety and crime to Australia than that of South Africa.

Projects are therefore to follow the requirements laid out in the Communities Submission Guidelines v1.1 which address the six key CPTED principles. These CPTED principles align with the City of Cape Town, Design and Management Guidelines for a Safer City - Best practice guidelines.

LIV – 15 should be kept in its current form with no changes to the credit.

**ECON – 16** In order to reflect the Moroccan context, the investment amounts were converted to Moroccan context using the Purchasing Power Parity<sup>30</sup>, to keep in line with the GOV credits as well as for consistency purposes. It was noted that house prices and housing types in Morocco vary substantially, and thus average house prices would not be useful in this context.

It was recommended that, the investment amounts were converted to Moroccan context using the Purchasing Power Parity, to keep in line with the GOV credits as well as for consistency purposes.

Therefore, each identified amount will be converted using the Purchasing Power Parity.

- For Residential Infrastructure Investment the minimum investment amount is 5800 MAD; and
- The minimum investment amount for infrastructure provided should be at least 46 MAD per square meter for non-residential space.

ECON – 16 should be kept in its current form with an adaptation to value MAD (Moroccan Dirham) amounts to make it more applicable to the Moroccan Market.

**ECON – 17** Despite a significant reduction in poverty in recent years, stakeholders noted that affordability remains an important challenge for housing in Morocco. The Moroccan government has implemented numerous housing projects over the past decade, mobilizing thousands of hectares of land, giving developers incentives to invest in social housing projects, and getting them to commit to build 900, 000 units by 2020.

Furthermore, since 2004, the government has launched the New Cities Program (Nouvelles Villes Programme) to better control population growth.

Recently in order to strengthen the housing affordability , the Moroccan government has launched large-scale projects and set up a new urban pole development strategy on the periphery of urban areas, which aims to make such areas more attractive by carrying out housing projects to meet the housing needs of the population while respecting the specifics of these environments. This programme is part of the new incentives set out by the Finance Act of 2019. Overall, the supply of new affordable housing tends to be apartment buildings, as part of those large-scale projects located on government provided land on the periphery of urban areas. All these policies, led by the government, have not only increased the amount of housing available but have also improved the quality of the housing stock.

<sup>30</sup> The World Bank <https://data.worldbank.org/indicator/pa.nus.ppp>

Following extensive engagement with local stakeholders and the GBCSA, the Australian Standards were chosen to help model future Moroccan standards as Moroccan Stakeholders believe that this is the standard that they would like to see in place going forward as it is more similar to the Australian receiving environment, than South Africa.

Projects are to follow the Communities v1.1 Submission Guidelines, specifically, National Construction Code (NCC). The NCC is to be read in line with Règlement Général de Construction au Decree No. 2-13-424 of 13 rejev 1434 (24 May 2013) Maroc, for application in the local context.

Decree No. 2-13-424 of 13 rejev 1434 (24 May 2013) approves the general building regulations laying down the form and conditions for the issue of permits and required parts in application of the legislation relating to town planning and housing estates , groups of dwellings and parcels as well as texts taken for their application.

ECON – 17 should be kept in its current form, with additional references as guidance, to assist in rendering the credit more applicable to the Moroccan Market.

- Decree 2-13-424<sup>31</sup> on General Building Regulations in Morocco (Règlement Général de Construction au Maroc (RGC)<sup>32</sup>;
- Dahir Law No 12-90<sup>33</sup>;
- Programme National des Villes sans bidonvilles (Cities without Slums) Program 2004<sup>34</sup>
- The New Cities Program (Programme Villes Nouvelles 2014) ;
- The National Strategy on Urban Development( Stratégie Nationale de Développement Urbain)<sup>35</sup> on urban planning ;
- The new Pole Development Strategy (Stratégie de développement des Pôles Urbains) drawn up by the Ministry of Housing, Town Planning and Urban Policy , will be added as additional references

**ECON – 18** Through Stakeholders workshops it was noted that SIC<sup>36</sup> codes, for economic activities, are international standards and are already applicable in the Moroccan context and following extensive engagement with local stakeholders and the GBCSA, the Australian Standards were chosen to help model future Moroccan standards as Moroccan Stakeholders believe that this is the standard that they would like to see in place going forward as it is more similar to the Australian receiving environment, than South Africa.

ECON – 18 should be kept in its current form and referencing to the Communities v1.1 Submission Guidelines, specifically the NCC, in line with above.

**ECON – 19** Stakeholders noted that 'Higher Education', is relevant and a referred to education in Morocco and will remain. In order to ensure that this credit retains the original intent, in the Moroccan Context 'Higher' will remain in the credit requirements.

Morocco has university and non-university higher education. The system is based on a division of higher education into three stages (or 'cycles') of 3+2+3 years commonly called the License,

<sup>31</sup> Decree n ° 2-13-424 of 13 rejev 1434 (May 24, 2013) approving the general building regulations laying down the form and conditions for issuing permits and documents required under the legislation on urban planning.

<sup>32</sup> Règlement Général de Construction au Decree No. 2-13-424 of 13 rejev 1434 (24 May 2013)

<sup>33</sup> Dahir No 1-92-31 dated 17 June 1992, promulgating Law No 12-90 on urban planning, as amended by Dahir No 1-16-124 dated 25 August 2016, promulgating Law No 66-12 on the control and infringements in the field of town planning and construction

<sup>34</sup> Kingdom of Morocco Poverty and Social Impact Analysis of the National Slum Upgrading Program

<sup>35</sup> Stratégie Nationale de Développement Urbain <http://www.muat.gov.ma/sites/default/files/Documentation/10.pdf>

<sup>36</sup> SIC Codes [https://en.wikipedia.org/wiki/Standard\\_Industrial\\_Classification](https://en.wikipedia.org/wiki/Standard_Industrial_Classification)

Master and Doctorate (LMD) system. Graduates are awarded the License diploma at the end of the first cycle, the Master at the end of the second cycle, and the Doctorate after the third cycle, which includes a Public Defense of the Doctoral Thesis. However, Morocco is set to adopt a Bachelor System for higher education as of September 2020 as this new system will allow Morocco to open up more to international education systems , especially those in Anglophone countries.

The education system is governed by the state (Ministry of National Education , Vocational Training , Higher Education and Scientific Research<sup>37</sup>) which provides for its planning, organization, development, regulation and direction, in line with the nation's economic, social and cultural needs. It defines national policy in cooperation with the scientific community, the world of work and the economy as well as the local authorities, particularly the regions (Article 1 of Law 01.00<sup>38</sup> on organizing Higher Education). A National Agency for Higher Education and Scientific Research Quality Evaluation (ANEAQ)<sup>39</sup>, under State supervision, is responsible for evaluating the higher education and scientific research system.

For the second part of the credit 19.2 Skills Development Programs, through engagement with an education specialist, it was found that TVET/FET Colleges and for CETS are available in Morocco, and this requirement can remain as is. Additionally, OFPPT<sup>40</sup> which is a governmental office for Professional training, where among the beneficiaries there are some who are out-of-school youth, adults and disadvantaged people, is to be included as an additional education platform.

Two additional guidance references will be added to this credit. The National Charter for Education and Training Law No 01-00 (complemented by the Vision 2030 since 2015) on the organization of higher education and Higher Council for Education, Training and Scientific Research; which establishes the pedagogical, administrative and financial autonomy of universities and formed the founding act of the Quality Assurance system. Law No 1-05-152 on the reorganization of the Higher Education Council which provides for academic, administrative and financial autonomy of the universities.

ECON – 19 should be kept in its current form, with an additional guidance references, specifically, National Charter for Education and Training Law No 01-00 on the organization of higher education and Higher Council for Education, Training and Scientific Research and Law No 1-05-152 on the reorganization of the Higher Education Council to assist in rendering the credit more applicable to the Moroccan Market.

**ECON – 20** Projects will have the option of pursuing a CIR for Morocco specific methodology or methodology not yet specified. Alternative methodologies are available to Moroccan projects, and CIRs regarding methodologies not yet mentioned will be considered on a project specific basis.

ECON – 19 should be kept in its current form.

**ECON - 21** To calculate the Moroccan relevant investment amounts, the same approach used in Credit 16: Community Investment was used. In order to reflect the Moroccan context, the investment amounts were converted to Moroccan context using the Purchasing Power Parity<sup>41</sup> (as at 27 November 2019), to keep in line with the GOV credits as well as for consistency purposes.

It was noted that house prices and housing types in Morocco vary substantially, and thus average house prices would not be useful.

<sup>37</sup> Ministry of National Education, Vocational Training, Higher Education and Scientific Research

<https://www.men.gov.ma/en/Pages/benmokhtar%E2%80%99sbiography.aspx>

<sup>38</sup> Dahir Law No 0100 Higher Education Act

<sup>39</sup> National Agency for Evaluation and Quality Assurance of Higher Education and Scientific Research <https://www.aneaq.ma/>

<sup>40</sup> OFPPT : Office of Vocational Training and the Promotion of Work

<sup>41</sup> The World Bank <https://data.worldbank.org/indicator/pa.nus.ppp>

The purchasing power parity is calculated as follows (<https://data.worldbank.org/indicator/pa.nus.ppp>):

PPP for Morocco is 3.5

PPP For South Africa is 6.1

Therefore, the conversion rate is  $3.5/6.1 = 0.58$

ZAR Values will be multiplied by 0.58 to obtain the equivalent MAD Value.

ECON – 21 should be kept in its current form with an adaptation to value MAD (Moroccan Dirham) amounts to make it more applicable to the Moroccan Market.

**ECON – 22** This credit was discussed by the team and investigations on the suggested connection speeds (10-50Mbps) revealed that these bands are applicable to the local context in Morocco. This was after review of the 3 local providers of digital infrastructure, namely Orange<sup>42</sup>, INWI<sup>43</sup> and Maroc Telecom<sup>44</sup>. Along with South Africa, Morocco has some of the best 4G coverage in Africa, with 60% of the country area covered by LTE mobile technology. Additionally, the lower line speeds allow for wider applicability as Morocco will not get 5G until 2022.

The appropriate line speed identified for consideration within the Moroccan context is therefore 10-50Mbps/5-20Mbps. It is noted however that the Government has developed a number of guidelines to ensure all Moroccans have access to broadband internet by 2020. These guidelines are presented in the National Broadband Plan prepared by the Autorité Nationale de Régulation des Télécommunications<sup>45</sup> (ANRT, National Telecommunications authority) in 2012, in the Prime Minister's General Guidelines Note for the 2015-2018 period, as well as in the draft Plan Maroc Numérique 2020<sup>46</sup> (Digital Morocco Plan, currently in the approval process) by the Ministry of Industry, Commerce, Investment and the Digital Economy (MICIEN)<sup>47</sup> in partnership with all the Moroccan departments and entities concerned, to boost the development of the digital economy sector, which may change the identified bands above. Recently the Digital Development Agency (DDA) has approved the roadmap and general guidelines for Digital Development in Morocco by 2025.

Furthermore, following extensive engagement with local stakeholders and the GBCSA, the Australian Standards, specifically alignment to the NCC, were chosen to help model future Moroccan standards as Moroccan Stakeholders believe that this is the standard that they would like to see in place going forward as it is more similar to the Australian receiving environment, than South Africa.

ECON – 21 should be kept in its current form with additional references, to include the National Broadband Plan and Maroc Numérique 2020 to make it more applicable to the Moroccan Market.

**ECON – 23** Until recently, the Moroccan National Office for Electricity and Potable Water (Office National de l'Electricité et de l'Eau Potable- ONEE) had a monopoly on the generation, transport, and distribution of electricity within Morocco by Dahir No 1-63-226 dated 5 August 1963<sup>48</sup>.

<sup>42</sup> Orange <https://www.orange.ma/>

<sup>43</sup> INWI <https://www.inwi.ma/>

<sup>44</sup> Maroc <http://www.iam.ma/index.aspx>

<sup>45</sup> ANRT <https://www.anrt.ma/>

<sup>46</sup> Maroc Digital 2020 Strategy <https://en.unesco.org/creativity/periodic-reports/measures/strategie-maroc-digital-2020>

<sup>47</sup> MICIEN <http://www.mcinet.gov.ma/>

<sup>48</sup> Dahir No 1-63-226 dated 5 August 1963 <http://extwprlegs1.fao.org/docs/pdf/Mor178299.pdf>

In 2009, Morocco adopted a national energy strategy aiming at strengthening the security of its energy supply as well as securing general cost-effective access to electricity. It also accelerated the development of renewable energies to reduce energy dependence and decrease greenhouse gas emissions. In this context, Law No 13-09<sup>49</sup> relating to renewable energies was promulgated in 2010 to liberalise and develop the renewable energy sector in Morocco through the opening up of renewable electric and thermic production to competition.

At the United Nations Climate Change Conference (COP 22) held in Marrakech in 2016, Morocco raised its target of increasing the share of renewable energy in installed power to 42% by 2020 and to 52% by 2030.

Additional references will be added to guide the project teams. - Law No 48-15 regulates the electricity sector and the establishment of the ANRE the Moroccan Energy Authority (Autorité Nationale de Régulation de l'Energie), Law No 54-14 which guides and allows national electricity self-producers to join the transmission network to carry energy from production sites to consumption sites and Law No 57-09 which aims to integrate energy efficiency techniques in a sustainable manner.

ECON – 23 should be kept in its current form, with additional references to assist in rendering the credit more applicable to the Moroccan Market.

Additional references:

- Law No 48-15 dated 24 May 2015<sup>50</sup>, on the regulation of the electricity sector and the establishment of the ANRE The Moroccan Energy Authority (Autorité Nationale de Régulation de l'Energie).
- Law No 54-14 promulgated in August 2015<sup>51</sup>, which allows national electricity self-producers to join the transmission network to carry energy from production sites to consumption sites;
- Law No 57-09 promulgated in February 2010<sup>52</sup> on the establishment of the Morocco Agency for Solar Energy, which is now known as the Morocco Agency for Sustainable Energy (MASEN).

**ENV – 24** Like South Africa, stormwater is a critical topic for the Moroccan context. From the research and stakeholder interviews it was clear that the South African requirements are applicable to the Moroccan context. Although slightly onerous, it was agreed that the benchmark for Stormwater management is to align with the South African context and is achievable if the correct measures are in place.

WSUD<sup>53</sup> guidelines are noted as the identified guidelines for this credit. WSUD terminology is internationally recognized for excellence and innovation in urban design, building design and sustainability.

Morocco is committed to an Integrated Water Resources Management (IUWM) approach under its National Water Strategy (SNE), National Water Plan (PNE)<sup>54</sup> and new Water Law 36-

<sup>49</sup> Law n°13-09 on Renewable Energy

<sup>50</sup> Law No 48-15 dated 24 May 2015 on the regulation of the electricity sector and the establishment of the Moroccan Energy Authority

<sup>51</sup> Law No 54-14 promulgated in August 2015, which allows national electricity self-producers to join the transmission network to carry energy from production sites to consumption sites.

<sup>52</sup> Law No 57-09 promulgated in February 2010 created the Morocco Agency for Solar Energy, which is now known as the Morocco Agency for Sustainable Energy (MASEN).

<sup>53</sup> WSUD Guidelines <https://www.sa.gov.au/topics/planning-and-property/land-and-property-development/planning-professionals/water-sensitive-urban-design>

<sup>54</sup> National Water Plan (PNE), 2015

15<sup>55</sup> issued in 2016. Due to the unavailability of Moroccan WSUD guidelines, the agreed approach is that this credit will use international best practice to be used in the absence of locally applicable standards specifically outlined in the Communities v1.1 Submission Guidelines. Project teams who choose to target this credit can submit CIRs (Credit Interpretation Request) on a case by case basis where the project team chooses to follow an alternative methodology.

For the Morocco Context the IUWM Guidelines are to be used in conjunction with Water Act 36-15 in terms of the sustainable management of water.

This credit will remain as it is, and Australian WSUD guidelines will be referenced as these are international best practice and are in line with the WSUD Guidelines for South Africa: Framework and Guidelines. It is noted that when Morocco WSUD guidelines become available these will be referenced and will replace the international guidelines.

ENV – 24 should be kept in its current form, with an additional guidance references, (see below) to assist in rendering the credit more applicable to the Moroccan Market.

Additional references:

- Integrated Urban Water Management (IUWM) in Morocco <sup>56</sup>
- Dahir Law 10-95 <sup>57</sup>
- Water Act 36-15 <sup>58</sup>
- National Water Plan, 2015 <sup>59</sup>
- National Water Strategy, 2014 <sup>60</sup>
- Dahir Law No 78-00 <sup>61</sup>
- Governance through integrated water management of water resources in Morocco <sup>62</sup>
- Managing Urban Water Scarcity in Morocco <sup>63</sup>

#### ENV – 25

Major changes to this credit relate to changing Notional Building requirements in the Performance Pathway to be in line with local Moroccan standards, where these are more stringent than the current requirements. The same applies for the Prescriptive Pathway.

It is noted that The local equivalent of SANS 10400 Part XA <sup>64</sup> has been identified as the Thermal Regulation for Construction in Morocco "Règlementation thermique de construction au Maroc" <sup>65</sup>. Additional guidance references, to further localize the credit

<sup>55</sup> Dahir Law on Water 36-15

<sup>56</sup> IUWM Morocco <http://documents.worldbank.org/curated/en/333161468121153578/Project-Information-Document-Concept-Stage-Morocco-Integrated-Urban-Water-Management-P151128>

<sup>57</sup> Law no. 10-95 on water [http://gis.nacse.org/rewab/docs/Royal\\_Decree\\_No\\_1-95-154\\_Promulgating\\_Law\\_on\\_Water\\_EN.pdf](http://gis.nacse.org/rewab/docs/Royal_Decree_No_1-95-154_Promulgating_Law_on_Water_EN.pdf)

<sup>58</sup> Dahir n° 1-16-113 du 6 kaada 1437 (10 aout 2016) portant promulgation de la loi n° 36-15 relative a l'eau

<sup>59</sup> National Water Plan, 2015

<sup>60</sup> National Water Strategy, 2014

<sup>61</sup> Dahir Law 78-00 [https://ustr.gov/sites/default/files/uploads/agreements/fta/morocco/asset\\_upload\\_file485\\_3865.pdf](https://ustr.gov/sites/default/files/uploads/agreements/fta/morocco/asset_upload_file485_3865.pdf)

<sup>62</sup> Governance through integrated water management of water resources in Morocco

<sup>63</sup> Managing Urban Water Scarcity in Morocco <http://documents.worldbank.org/curated/en/416241516117427311/pdf/122698-WP-P157650-Summary-Report-Urban-water-scarcity-in-Morocco-ENG-P157650-2017-12-25-04-12.pdf>

<sup>64</sup> SANS Regulation XA <https://sans10400.co.za/wp-content/uploads/2013/11/A-Guide-to-SANS-10400XA.pdf>

<sup>65</sup> Règlement Thermique de Construction au Maroc [http://architectesmeknestafilalet.ma/documentation\\_telechargements/Efficacit%C3%A9%20energetique/Reglement\\_thermique\\_de\\_construction\\_au\\_Maroc\\_-\\_Version\\_simplifiee.pdf](http://architectesmeknestafilalet.ma/documentation_telechargements/Efficacit%C3%A9%20energetique/Reglement_thermique_de_construction_au_Maroc_-_Version_simplifiee.pdf)



are, Law No 47-09 related to Energy Efficiency<sup>66</sup>.

**Additional references:**

- The qualita'air program 2016<sup>67</sup>
- The National Quality Air Program (Le Programme national de la qualité de l'air 2017-2030)<sup>68</sup>

**ENV 26** – From research, experience and stakeholder interviews the conclusion was that the requirements are still tough to achieve in Morocco, however the aim is to improve industry benchmarks in Morocco.

Due to the lack of information and documented literature, the agreed approach is that this credit will use international best practice standards as outlined in the Communities v1.1 Submission Guidelines as well as the Sustainable Precincts tool. Project teams who choose to target this credit can submit CIRs (Credit Interpretation Request) on a case by case basis where the project team chooses to follow an alternative methodology.

Project teams will make use of the MAT – 6 Steel credit requirements as laid out in the Green Star SA Technical Manual Mat-06 Credit Guidance. Therefore, this credit will remain as is and Australian PVC Best Practice Guidelines will be referenced as these are international best practice. It is noted that when Morocco PVC guidelines become available these will be referenced and will replace the international guidelines. Australian PVC Best Practice Guidelines are in line with the requirements laid out under the South African PVC standards, namely, AVI standards SAVIBP 1001 and 1002.

For 26B.1 Prescriptive Pathway - Sustainable Primary Construction Materials, as Morocco does not yet have **PVC** standards available, Australian PVC Best Practice Guidelines<sup>69</sup> will be referenced as these are international best practice. It is noted that when Morocco PVC guidelines become available these will be referenced and will replace the international guidelines.

For **Concrete**, Due to the lack of information and documented literature, the agreed approach is that this credit will use international best practice standards as outlined in the Communities v1.1 Submission Guidelines as well as the Sustainable Precincts tool. Project teams who choose to target this credit can submit CIRs (Credit Interpretation Request) on a case by case basis where the project team chooses to follow an alternative methodology.

For **Steel**, due to the lack of information and documented literature, the agreed approach is that this credit will use international best practice standards as outlined in the Communities v1.1 Submission Guidelines as well as the Sustainable Precincts tool. Project teams who choose to target this credit can submit CIRs (Credit Interpretation Request) on a case by case basis where the project team chooses to follow an alternative methodology.

For **Asphalt**, It was agreed that no changes and additional reference documents are required for this credit as the credit requirements can be applied to the Moroccan context.

ENV – 26 should be kept in its current form, with the inclusion of additional references to specifically, Life cycle and Carbon print analysis of construction materials Technical Guide,

<sup>66</sup> Law No 47-09 of Morocco on energy efficiency

<sup>67</sup> Qualita'air program 2016 <https://www.fm6e.org/images/Brochures/qualitaair2016-en.pdf>

<sup>68</sup> The National Air Quality Program 2017-2030 <http://www.maroc.ma/fr/actualites/mme-el-ouafi-le-programme-national-de-la-qualite-de-lair-2017-2030-vise-reduire-la>

<sup>69</sup> Australia Best Practice PVC Guidelines <https://new.gbca.org.au/pvc/>



	namely Guide technique : analyse de cycle de vie et empreinte carbone des matériaux de construction, published by the Moroccan Energy Cluster (EMC) <sup>70</sup> , to assist in rendering the credit more applicable to the Moroccan Market.
<b>ENV 27</b>	– ENV – 27 should be kept in its current form with no changes to the credit.
<b>ENV 28</b>	<p>– From stakeholder workshops and discussions, it was found that in Morocco a ‘suitably qualified professional’ is not defined as a single individual but rather defined as a competent company, who is registered under Ministry of Equipment<sup>71</sup>. It was further noted that any person within that company can undertake an EIA, compile an Ecology Plan or Biodiversity plan if they fall under the company which is accredited by the Ministry of Equipment.</p> <p>The process of accreditation involves a committee where there is a representative of the governmental authority for the environment and the accreditation is called Système d’agrément des bureaux d’études. Le domaine des études d’impact est le D19<sup>72</sup>.</p> <p>For the purposes of this credit, a suitably qualified professional will be assessed on a case by case basis, projects are to submit a CIR, for the approval of an “organisation-based approach”. Motivation is to include CV of professional justifying professional’s accreditation, experience, and alignment with credit.</p> <p>Companies that carry out projects relating to a certain type of activity must obtain an environmental acceptability decision (decision d’acceptabilité environnemental) prior to the construction of their plant. Such approval is granted by the Ministry of Environment on the basis of the results of an environmental impact study. In principle, the authorities request such an authorisation prior to issuing the building permit and the certificate of compliance. Projects must achieve clearance and acceptability from the Ministry of Environment before undertaking any works on the project site. Following extensive engagement with local stakeholders, it was found that projects are bound by National law, Dahir Law 12- 03 of 12 May 2003, this law applies on a local and provincial level and no additional pieces of regulation are in place. This is to ensure the conduct and consistency, of projects on a national level.</p> <p>Dahir Law 12-03 on Environmental Impact Studies is to evaluate, methodically beforehand, possible repercussions of all planned activities, construction projects, development and works, undertaken by any individual organization on the environment. The direct and indirect effects are evaluated, particularly on humans, animals, plants, soils, water, air, the climate, the natural setting as well as on public health and safety. Dahir Law 12-03 is equal in their outcomes objectives when compared to NEMA.</p> <p>ENV –28 should be kept in its current form, with an alternative compliance to be shown through, Dahir Law No 12-03 on Environmental Impact Studies, which will replace NEMA<sup>73</sup>. Additionally, in Morocco a ‘suitable qualified professional’ will be assessed on a case by case basis, projects are to submit a CIR, for the approval of an “organisation-based approach”. Motivation is to include CV of professional justifying professional’s accreditation, experience, and alignment with credit.</p>

<sup>70</sup> Moroccan Energy Cluster <https://clusteremc.org/>

<sup>71</sup> Ministry of Equipment <http://www.equipement.gov.ma/en/Pages/home.aspx>

<sup>72</sup> Ministry of Equipment <http://www.equipement.gov.ma/Ingenierie/Systemes-regissant-la-Profession/Pages/Agrement-des-Bureaux-d-Etudes.aspx>

<sup>73</sup> NEMA <https://www.environment.co.za/environmental-laws-and-legislation-in-south-africa/nema-south-africa-national-environmental-management-act-legislation-and-environmental-acts.html>

<b>ENV 29</b>	<p>– From stakeholder workshops and discussions, it was found that in Morocco a ‘suitably qualified professional’ is not defined as a single individual but rather defined as a competent company, who is registered under Ministry of Equipment . It was further noted that any person within that company can undertake an EIA, compile an Ecology Plan or Biodiversity plan if they fall under the company which is accredited by the Ministry of Equipment.</p> <p>The process of accreditation involves a committee where there is a representative of the governmental authority for the environment and the accreditation is called <i>Système d’agrément des bureaux d’études</i>. Le domaine des études d’impact est le D19 .</p> <p>For the purposes of this credit, a suitably qualified professional will be assessed on a case by case basis, projects are to submit a CIR, for the approval of an “organisation-based approach”. Motivation is to include CV of professional justifying professional’s accreditation, experience, and alignment with credit.</p> <p>Furthermore, there are no such ‘bodies’ that govern Environmental or Ecology specialists.</p> <p>ENV – 29 should be kept in its current form, with an inclusion of additional guidance references , to assist in rendering the credit more applicable to the Moroccan Market.</p> <p>Dahir Law 12 – 03<sup>74</sup> on Environmental Impact Studies will replace NEMA. Additionally, in Morocco a ‘suitable qualified professional’ is not defined as a single individual but rather defined as a competent company, who is registered under Ministry of Equipment. It was further noted that any person within that company can undertake an EIA, compile an Ecology Plan or Biodiversity plan if they fall under the company which is accredited by the Ministry of Equipment.</p>
<b>ENV 30</b>	<p>– Morocco has undertaken a series of strategic actions to reform the waste management sector, such as strengthening of the legal framework, implementation of solid waste management (SWM) programs support for the National Household Solid Waste Program (PNDM)<sup>75</sup>, and development of a national master plan for hazardous waste management. Law 28-00<sup>76</sup> establishes integrated and affordable Solid Waste Management in Morocco and aims to mitigate the impacts on public health and environment.</p> <p>ENV – 30 should be kept in its current form, with additional references, specifically, Law 28-00 on solid waste management and disposal adopted in 2006 , to assist in rendering the credit more applicable to the Moroccan Market.</p>
<b>ENV 31</b>	<p>– ENV – 31 should be kept in its current form with no changes to the credit.</p>
<b>ENV 32</b>	<p>– ENV – 32 should be kept in its current form, with additional references specifically, Morocco's National Charter for Environment and Sustainable Development<sup>77</sup> to assist in rendering the credit more applicable to the Moroccan Market.</p>
<b>INN</b>	<p>INN should be kept in its current form with no changes to the credit.</p>

*Table 1: Summary of Green Star Sustainable Precincts credits*

<sup>74</sup> Dahir No 1-03-60 dated 12 May 2003 promulgating Law No 12-03 on environmental impact assessments

<sup>75</sup> Morocco – Solid Waste Management Program <https://www.worldbank.org/content/dam/Worldbank/document/Climate/Climate-Finance-Projects-briefs/Morocco-Municipal-Solid-Waste-Management.pdf>

<sup>76</sup> Solid Waste Management Law 28-00 November 2006

<sup>77</sup> The National Charter for the Environment and Sustainable Development [http://www.chartenvironnement.ma/index.php?option=com\\_content&view=article&id=119%3Ala-charte-nationale-de-l'environnement-et-de-developpement-durable&catid=34%3Ademo&lang=en](http://www.chartenvironnement.ma/index.php?option=com_content&view=article&id=119%3Ala-charte-nationale-de-l'environnement-et-de-developpement-durable&catid=34%3Ademo&lang=en)

## Acronyms

AMCORD	Australian Model Code For Residential Development
ANEAQ	A National Agency for the Evaluation and Quality Assurance of Higher Education and Scientific Research
ANRT	Autorité Nationale de Régulation des Télécommunications
AP	Accredited Professional
BREAAM	Building Research Establishment Environmental Assessment Method
CETS	Computing and Educational Technology Services
CGEM	La Confédération Générale des Entreprises du Maroc
CIR	Credit Interpretation Request
DDA	Digital Development Agency
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
ENV	Environmental Category
FET	Further Education and Training
FSC	Forest Stewardship Council
GBCA	Green Building Council of Australia
GBCSA	Green Building Council of South Africa
GCMs	Global Circulation Models
GOV	Governance Category
GS	Green Star
HQE	Haute Qualité Environnementale
IAP	International Association for Public Participation
INN	Innovation category
IPCC	Intergovernmental Panel on Climate Change
LEED	Leadership in Energy and Environmental Design
LIV	Livability Category
LMD	License, Master and Doctorate
MGBC	Morocco Green Building Council
NEMA	National Environmental Management Act
OFPPPT	L'Office de la Formation Professionnelle et de la Promotion du Travail
RGC	Règlement Général de Construction au Maroc
SME	System Système de Management de l'Environnement
SuDS	Sustainable Drainage System
SWM	Solid Waste Management
PPP	Purchasing Power Parity
TVET	Technical and Vocational Education and Training
TPES	Total Energy Supply
TFC	Total Final Consumption
WSUD	Water Sensitive Urban Design

## Introduction

What is Green Star Sustainable Precincts? Green Star is an internationally recognized rating system that delivers independent verification of sustainable outcomes throughout the life cycle of the built environment.

Green Star Sustainable Precincts is a holistic rating tool for communities and precincts.

As per the Australian Green Star Communities v1.1. Submission Guidelines:

*“Green Star – Communities is a rating tool that evaluates the sustainability attributes of the planning, design, and construction of large-scale development projects, at a precinct, neighbourhood, and/or community scale. The Green Star – Communities rating tool will assist governments, development project teams, contractors and other interested parties aiming to deliver large-scale sustainable developments around Australia to:*

- *Provide diverse, affordable, inclusive, well connected and healthy places to live, work and play;*
- *Protect, maintain and restore the natural environment by reducing the ecological footprint of developments;*
- *Receive recognition for demonstrated leadership and commitment to sustainability;*
- *Achieve real value for money through demonstrated whole-of-life cost savings; and*
- *Encourage opportunities for business diversity, efficiency, innovation, and economic development.”*

Green Star – Communities assesses projects against a holistic set of distinct social, environmental, and economic categories, and an innovation category. The categories are called:

- Governance;
- Livability;
- Economic Prosperity;
- Environment; and
- Innovation.

The Green Star Sustainable Precincts Rating Tool is composed of the following documents

- i. Green Star Australia – Communities Submission Guidelines and Submission Templates
- ii. Green Star Australia – Communities Scorecard; and
- iii. Green Star Australia – Communities Change in Ecological Value Calculator.
- iv. Green Star – Sustainable Precincts Local Context Report

### Local Context Report – Green Star Sustainable Precincts for Morocco

The development of the Australian Communities Tool was been a complex process and took an extensive amount of time in Australia. Green Building Council South Africa (GBCSA) then took on the development of the Sustainable Precincts Tool for South Africa, through the process of an LCR. The objective of the Local Context Report (LCR) for South Africa was to assess where the tool needs to be changed to be applicable to the South African Context. The development of the LCR resulted in the Pilot Green Star South Africa Sustainable Precincts (SUP) tool, which is available to the South African and African market.

SAEDM initiated the LCR process for Morocco. Mazagan Urban Pole was currently going through its initial stages of development and SAEDM wanted to use the Sustainable Precincts tool for to certify the project. Terramanzi was appointed to lead the development of the LCR; which is done in collaboration with SAEDM. The Stakeholder Group consisted of 11 experts from the industry.

### Stakeholders, Roles & Responsibilities

#### SAEDM

SAEDM was the client on the project as they are the custodians of the LCR and guided the LCR development to ensure the Technical Consultant adheres to the GBCSA's vision, which is:

*This process must be led by an experienced SA Green Star AP and be informed by a one or more workshops and professional industry stakeholder input. The LCR must address climatic conditions, government planning informants, relevant regulations and any other Morocco - specific circumstances which may be in conflict with certain Green Star SA requirements. The LCR also analyses the Green Star Sustainable Precinct tool credit-by-credit, identifying any ramifications that may result from the application of the Green Star SA rating tool to the Moroccan context*

### Technical Consultant

The Technical Consultant, Terramanzi, is the appointed party and experienced Green South Africa AP, responsible for managing and leading the stakeholder participation and the developing of the LCR. Terramanzi is expected to make use of their experience on the developing the South African LCR and being the SUP AP on the first ever SUP project in South Africa to inform the Moroccan LCR. Terramanzi was responsible for administrative tasks related to minutes and meetings, as well as ensuring that the expert's opinions are considered. Terramanzi engaged with industry experts where the expertise was missing.

### Stakeholder Group

There were 13 people accepted for the Stakeholder Group has a wealth of experience and knowledge, which the consultant captured into the development of the LCR.

- Karim LAGHMICH, General Director, SAEDM
- Kenza EL WAFI, Architect and Development Project Manager, SAEDM
- Tarik NGADI, Legal Expert and Responsible of Institutional Affairs, SAEDM
- Hicham ZAROUAL, Engineer and Responsible of External and Landscaping Works, SAEDM
- Abed CHEMAOU, Responsible of Public Partnerships, SAEDM
- Youssef MANSOUR, Regional Operating Principal, Keller Williams Morocco
- Youssef MERNISSI, Regional Director, Keller Williams Morocco
- Nadia CHARIR, Architect- Urban management department, Urban Agency
- Mohamed EL GANNOUNI, Legal expert– Urban management department, Urban Agency
- Lucie MORAND, Project Manager - Sustainable Urban Projects Pole Management Board and Strategy SUEZ Consulting
- Mathilde PECNARD, Head of Urban Projects Unit Strategy & Consultancy Division, SUEZ Consulting
- Christine LEGER, Environmental Manager, Phenixa Group
- Etienne TERBLANCHE, Energy Specialist, Climetric

### Objective of the Local Context Report

The following report is a local context assessment to allow for the adoption of the Green Star SA Sustainable Precincts certification in Morocco. Currently the Green Building Council of South Africa (GBCSA) allow certification via Green Star SA in South Africa. The GBCSA are also able to certify projects outside of South Africa, provided a LCR is developed and approved for a particular country. A LCR is prepared and submitted to the GBCSA for approval by the first project seeking to be certified in that specific country. The LCRs are owned and published by the GBCSA and updated from time to time to reflect any changes received and collected through project feedback. The LCR is prepared by the project at their cost.

Through this local context report the GBCSA will assess for the use of this certification in Morocco.

The GBCSA would manage and allow the certification of this project through its existing established processes. The GBCSA encourage the project to use this opportunity to allow capacity growth in Morocco related to green building and transfer of knowledge.

Multiple Workshops were set up via Zoom and face-to-face in Casablanca, Morocco at the head offices of OCP GROUP, a leading chemical company in Morocco, with SAEDM and Moroccan industry professionals and academics to discuss each credit in the Green Star SA Sustainable Precinct rating tool and their applicability to the Moroccan context. The comments from the workshop and views expressed by the professionals and academics have been included in this report.

## Methodology

The context report addresses climatic conditions and ecology, water and energy patterns, building regulations and any other Morocco-specific circumstances which may be in conflict with certain Green Star SA Sustainable Precincts requirements. The context report also analyses the Green Star SA Sustainable Precincts tool credit-by-credit, identifying any ramifications that may result from the application of the Green Star SA rating tools to the Morocco context.

The Sustainable Precincts tool is different from the other Green Star tools as it does not follow the standard eight categories of Green Star. The Sustainable Precincts tool has four categories: namely Governance, Livability, Economic Prosperity and Environment. In total, there are 32 credits in the four categories and 100 points are available for the projects. All references that have been included as part of the Local Context Report, have been reviewed and found to be equal in their outcome's objectives. Additionally, for credits where Moroccan standards were not available and/or stringent enough international best practice was used and where the South African LCR was not applicable,

GBCSA was engaged at a high level throughout the process of the LCR development.

The team looked at the eligibility criteria and the certification process, like that of the South African LCR and evaluated if all the requirements and reviewed its appropriateness for Morocco.

Each credit was reviewed in the following manner:

- Aim of the Credit
  - Is the aim of the credit relevant to the Moroccan Context?
- Credit Criteria
  - Are the credit criteria relevant to the Moroccan Context?
  - Are the benchmarks set correctly for the Moroccan Context?
  - Are there local equivalent standards/legislation that can be referenced?
  - What must be amended to make the credit criteria appropriate for implementation in Morocco.
- Total suite of credits
  - Are there any major gaps in the issues that the credits address?
  - Are there Moroccan specific planning items that must be included?

## Stakeholder Meetings and Workshops

As part of the LCR development process, 2 prior discussion workshops were held with SAEDM and SUEZ and 2 Stakeholder workshops were held.

Sustainable Precincts High Level Discussion (Initial review and discussion of the Sustainable Precincts Tool and a focus on Governance and Livability)	28 October 2019
Sustainable Precincts High Level Discussion (Focused discussion of Governance and Livability)	4 November 2019
GBCSA and Terramanzi Engagement	22 November 2019
Stakeholder Workshop 1 (Initial stakeholder engagement, review of the Sustainable Precincts Tool and an in-depth discussion of all credits)	27-28 November 2019

Stakeholder Workshop 2 (Progress on the LCR programme, resolutions to outstanding Credits and revised Project Programme)	4 March 2020
Terramanzi and Climetric Engagement (Energy Due Diligence)	4 March 2020

The goal of the workshops was to get as much feedback and technical input from the different stakeholders. The first workshop was structured as follows, first a general session introducing the tool and giving background ground to the tool and credits followed by working group sessions. In the general session we discussed the tool name, eligibility criteria and recertification. During the latter part of the workshops, stakeholders were asked to provide their expertise on specific credits.

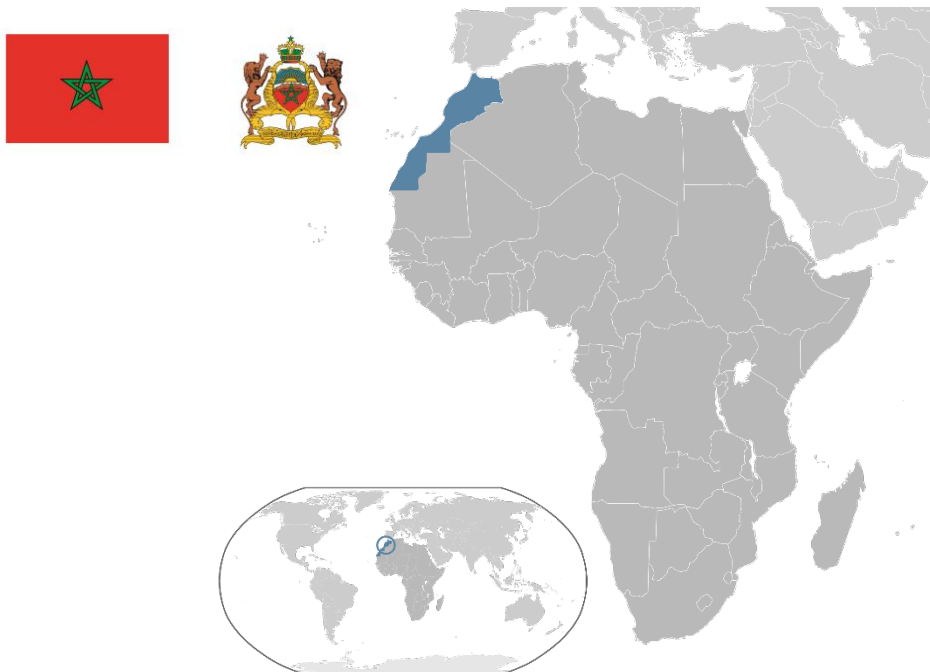
# Background

## Introduction of MGBC

Morocco has a green building council, the Morocco GBC (MGBC) , which is registered with the World Green Building Council as a prospective membership level. The MGBC is newly established and has therefore not yet produced an environmental rating tool that would be used for Sustainable Precincts projects in Morocco. (World Green Building Council, 2020)

## Overview of Morocco

The Kingdom of Morocco is the most westerly of the North African countries where coastline borders on both the Atlantic and Mediterranean Sea and neighbors include Algeria and Mauritania (Plecher, 2018). The capital of Morocco is Rabat, and the largest city is Casablanca; other large cities include Marrakesh, Tetouan, Tangier, Salé, Fes, Agadir, Meknes, and Oujda (Morocco Overview, 2020). The official language of Morocco being Arabic (Morocco Guide , 2020), 60% of the population speaks Moroccan Arabic while 30% to 40% speak Tamazight (Berber), however French is the second language of Morocco and occupies a very important place in public life (Nordea , 2020).



*Figure 1: Morocco and the World*

## Population and Urbanization

Morocco, officially the Kingdom of Morocco is home to a current population of 36,910,560 million inhabitants and occupies 446,300 square kilometers; this culminates in an overall population density of about 83 people per square kilometer. The actual urban population of Morocco is 63.8 %of the total population in 2020 (Worldometer, 2020).



Morocco's population is displaced across 3 major geographic zone, with the biggest portion of Moroccans living on the coastal plains and plateaus while the mountainous and desert regions are less densely populated. Casablanca situated on the Atlantic coast on the Chawiya Plain and with 3.3 million inhabitants is Morocco's biggest city. The country's capital Rabat is also found on the Atlantic coast but is much smaller with merely 600 000 people. Morocco's growth rate is higher than most developing countries, although significantly less in comparison with the rest of Africa with a growth rate of 1.39%. In Morocco, urbanization from 2005 – 2015, went from 55.13% to 60.2% jumping 5 % in 10 years (Morocco - Urbanization 2008-2018 , 2020).

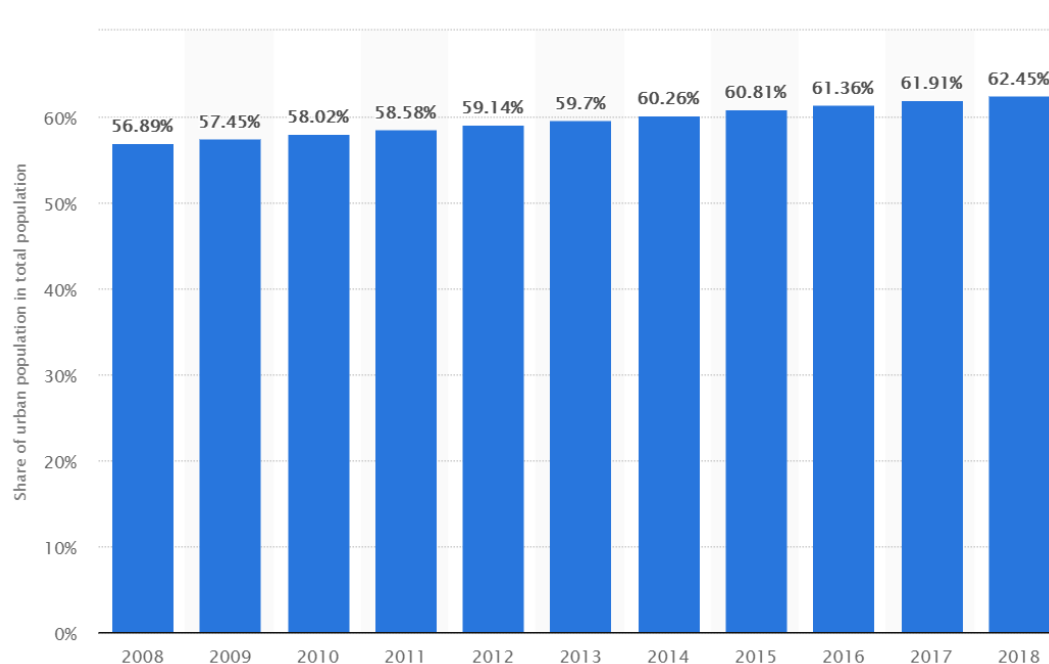


Figure 2: Urbanisation in Morocco (Morocco - Urbanization 2008-2018 , 2020)

### Socio Economic Background

According to the most recent data in 2013, Morocco had 1% of the total population living in extreme poverty, with 0.6% of the country's workforce living on less than 1.9 US dollars per person per day in 2014. Morocco boasts a consistent decrease in poverty between 2000 and 2014, with the proportion of the population living under the national poverty line having dropped from 15.3% in 2000 to 4.8% by 2013. In comparison, neighboring country Mauritania had 31% of its population living under the national poverty line by the same year (UN SDG Country Profile, 2017).

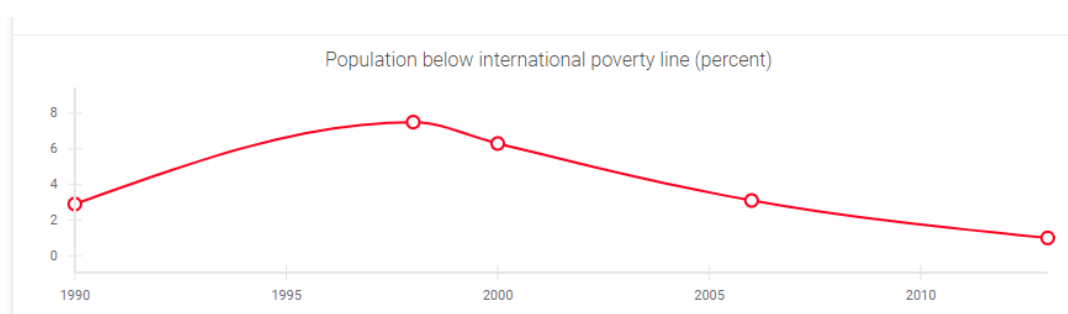


Figure 3: Proportion of the population living below the extreme poverty line (UN SDG Country Profile, 2017).

### Education

Access to quality education is a persisting issue in Morocco despite numerous interventions to the national education system and culture. Morocco continues to show a high dropout rate increasing with each age group

and resulting in a low national graduation rate. The Moroccan government funded a “Non-Formal Education Project” aimed at reintegrating young people who had dropped out of school, back into the education system. This programme has seen an increase from 64465 beneficiaries in 2015-2016 up to 90000 by the following year. (Mansouri & El Amine Moumine, 2017).

Since then, Morocco has undertaken an ambitious reform program to increase access to education and improve the performance of the education, such as the Education Support Program (\$500 million), approved on June 20, 2019. The project’s objectives are to establish an enabling environment for quality early childhood education service delivery, support improved teaching practices in primary and secondary education, and strengthen management capacity and accountability along the education service delivery chain in the Program Areas. (World bank, May 2020).

Then, in August 2019, the Kingdom's parliament passed a bill aimed at revamping the country's entire primary education system, with its advocates saying it will promote socio-economic equality and social inclusiveness. The bill focuses on closing the country's education gap and developing a new generation of Moroccans, equipped with the diplomatic and scientific skills needed for Morocco to play a bigger role on the international stage.

## Geography

Morocco spans from the Mediterranean Sea and Atlantic Ocean on the north and the west respectively, into large mountainous areas in the interior body, to the Sahara desert in the far south. Morocco's landscape is mountainous with slopes that gradually transition into plateaus and valleys. The Atlas mountains dominate the central part of the country, while the Rif mountains make up the northern edge. The southeastern region of the country is blanketed by the Sahara Desert, the world's third largest desert at over 3,600,000 sq. miles( 9,400,000 sq. km) (World Atlas, 2020).



Figure 4: World Atlas Morocco Geography

## Climate

Morocco is described as having a hybrid climate with a moderate and subtropical, cooled by breezes off the

Atlantic and Mediterranean. In the interior the temperatures are more extreme, winters can be fairly cold and the summers very hot. Average summer temperatures in the coastal cities, range from 64-82 °F (18- 28°C). In the interior, however, highs frequently exceed 95°F (35°C). Average daily temperatures range from about 54°F (12°C) in winter (Dec-Mar), to 77°F (25°C) and higher in summer (Jun-Sep) (Morocco Seasons & Climate, 2020).

Rain season starts in October month with precipitation is the least in February month, representing an average of 40 mm. Most precipitation falls in June, representing an average of 107 mm (Climate Data.org, 2020).

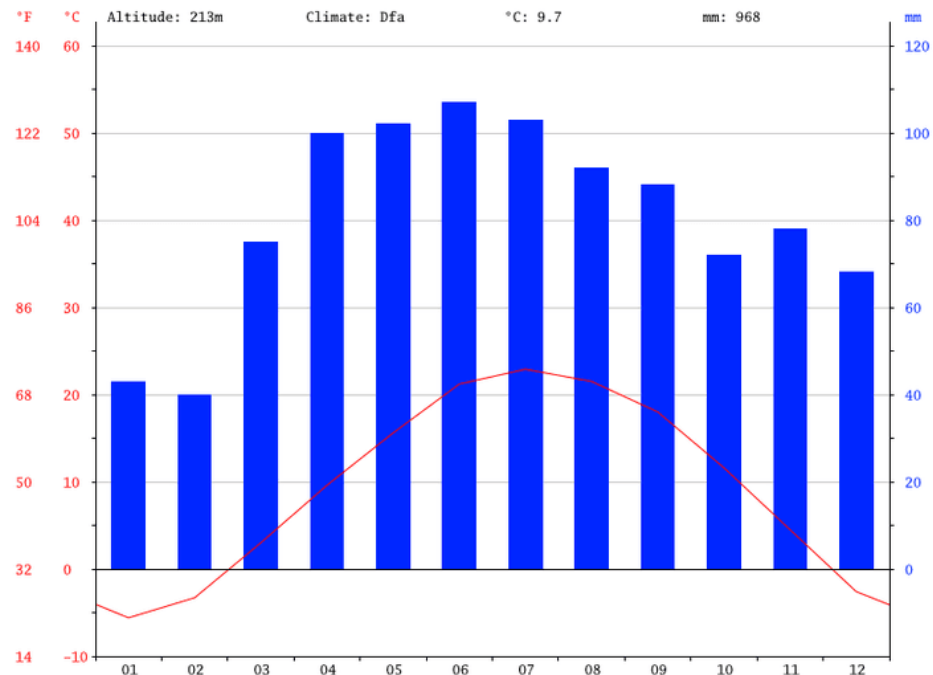


Figure 5: Morocco Average Rainfall (Climate Data.org, 2020).

At an average temperature of 22.9 °C in July, it is the hottest month of the year. January, averages at -5.6 °C being the lowest average temperature of the whole year (Climate Data.org, 2020).

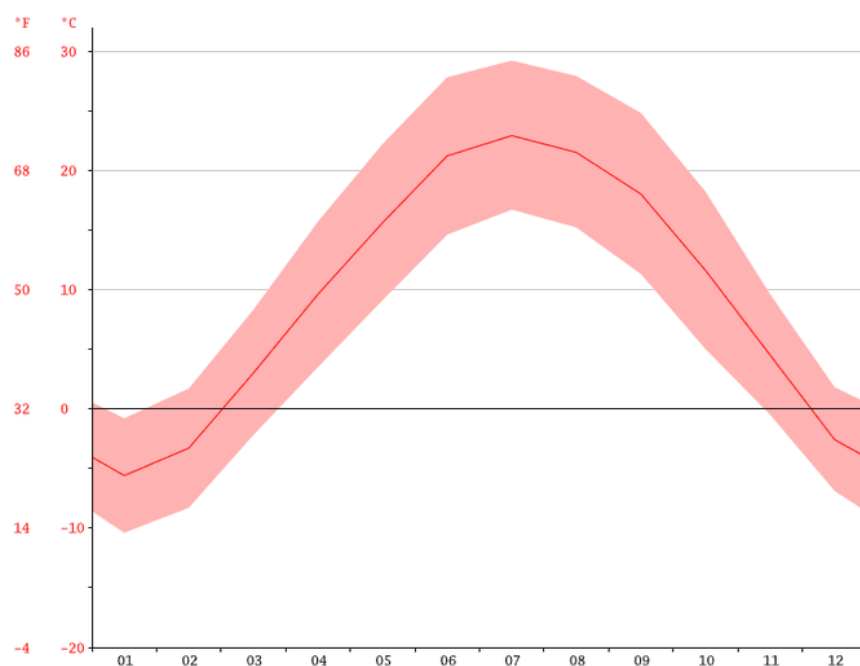


Figure 6: Morocco Average Temperature (Climate Data.org, 2020).

## Energy and Electricity Usage

Morocco has committed to reducing GHG emissions by 42% below business-as-usual (BAU) by 2030. In Morocco, the building sector plays an important role in reaching this target. The building sector's share of total final energy consumption was 34% in 2016. Morocco has committed that to reach national reduction targets, energy use must be reduced by 19 % in the residential sector and by 10 % in the services sector. Between 2014 and 2017, data showed that energy used in buildings and electricity is on the rise with the residential sector increasing by 7% and by 12% in the services sector (Building Brief - Morocco, 2019). Morocco is also heavily dependent on imports to meet its energy needs. 91% of its energy is sourced from abroad, with imports including crude oil , petroleum products, coal, gas from Algeria, and electricity from Spain via dual interconnectors. As a developing economy, Morocco has seen a continuous rise in energy demand since the early 20th century, driven by industrialization, overall economic development, and rising living standards. Demand has grown by an average of 6% to 7% a year over the last 25 years (Morocco, an Emerging Economy with Energy Challenges, 2020).



Figure 7: Electricity consumption (TFC) by consuming sector, 1973-2017 (IEA, 2019).

In 2017, the industrial sector remained the largest consumer of electricity in Morocco, accounting for 11.8 TWh or 36% of the total (Figure 7). The residential sector was the second largest, with 11.0 TWh or 34%, followed by

the commercial and public services sector, with 5.2 TWh or 17%, and agriculture with 3.7 TWh or 12% of total electricity consumption (IEA, 2019). As a rising population in rural areas has gained access to electricity, now accounting for 99.43%, electricity consumption has accelerated. In the last decade, consumption grew in agriculture grew by 66%, the commercial and public services sector by 88%, residential by 67% and industry by 38 (IEA, 2019).

Total primary energy supply (TPES) in Morocco reached 20.5 million tonnes of oil-equivalent (Mtoe) in 2017, a 32% increase from 15.6 Mtoe in 2007. TPES has grown on average 2.4% annually over the last decade in line with the overall economic growth of the country. The gross supply of fossil fuels saw a 37% growth from 2007 to 2017. A significant increase of natural gas supply (87%) was supported by large imports from Algeria between 2005-12. Gas use, however, plateaued after 2012 at around 1.22 billion cubic meters per year. The remainder of TPES consisted of biofuels and waste (7%), electricity imports (2%), and small shares of hydro, wind and solar (2% together). Renewable sources are however growing rapidly from a low base. Over the past decade, hydro grew by 29%, while solar and wind together increased 15 times. The supply of biofuels and waste declined by 29%. (IEA, 2019). Furthermore, it represents Morocco's diversification of energy mix over the last two decades, first by increasing coal consumption in the mid-nineties and, more recently, in 2005 with the introduction of natural gas (IEA, 2019).

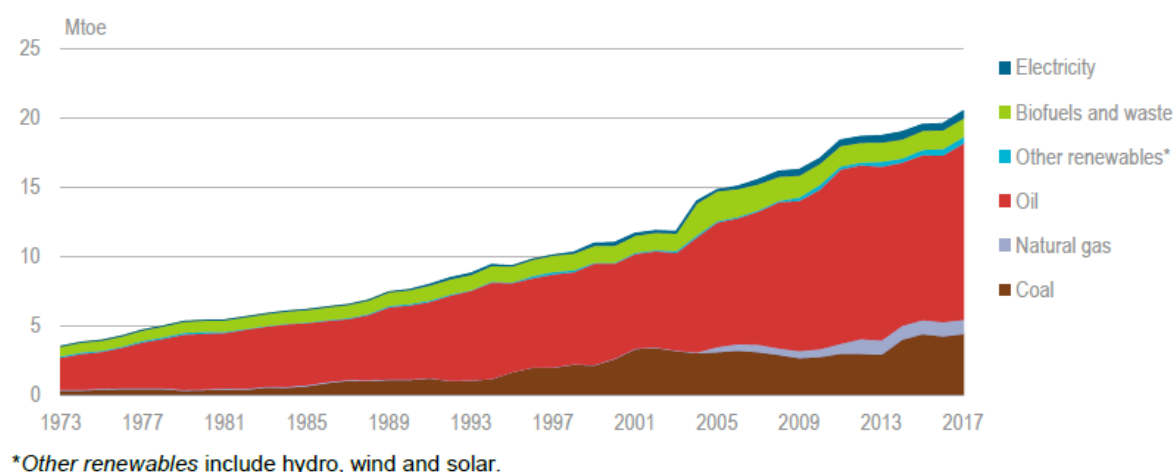


Figure 8: Total primary energy supply (TPES) by source, Morocco 1973-2017 (IEA, 2019).

Morocco's total energy consumption stands at approximately 28.21 billion kWh of electric energy per annum. With a population of 36 million this equates to an average of 784kWh per capita per annum. (Energy consumption in Morocco, n.d.). Morocco's total final consumption (TFC) reached 16.1 Mtoe in 2017, a 34% increase from 12.06 Mtoe in 2007. TFC is largely dominated by three sectors – transport (36%), residential (25%) and industry (24%), which together account for over four-fifths of TFC. These are all sectors with high growth rates. Since 2007, the transport sector has grown by 58%, residential by 26% and industry by 16% (IEA, 2019).

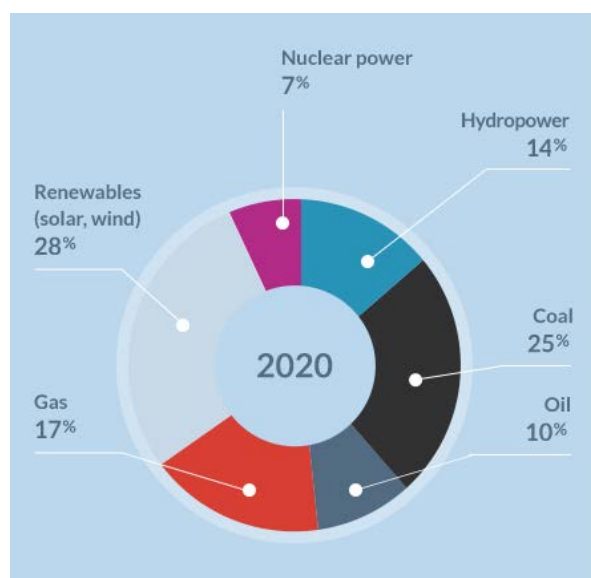


Figure 9: Energy Mix in Morocco, 2020

In 2020, Morocco's energy mix is still characterized by a large proportion of coal, and fossil fuels in general, and only a small percentage of renewable energies, despite a recent surge in wind power.

Due to its growing population and economic development, Morocco's energy demands are rapidly accelerating. The Moroccan government has made more use of the private sector to meet the country's energy needs following power shortages and a desire to control public spending. It is projected that the state's share of electricity production is likely to decline to 40% in 2020. However, the state-owned Office National de l'Electricité (ONE) will maintain sole responsibility for distribution and transmission of electricity in Morocco. (Energy policy of Morocco, 2019)

In 2003, Morocco had an installed generating capacity of 4.8 GW. The country's two largest power stations are both coal-fired, namely Mohammedia and Jorf Lasfar. The majority of Morocco's coal is sourced from South Africa, although coal was purchased from Poland for the Jorf Lasfar power plant in 2005. Morocco ceased coal production in 2000 after closure of Jerada coal mine. In 1997, Jorf Lasfar became Morocco's first privately operated power plant when it was undertaken by a US-Swiss consortium. The consortium expanded the power plants generating capacity to 1400 MW in 2001. (Energy policy of Morocco, 2019)

The expansion of generating capacity at Jorf Lasfar is in line with the country's wider campaign to increase generating capacity. A \$500 million (350-400 MW) combined-cycle powerplant was commissioned in Tahaddart, in 2005 as per the government's plan. The power plant is owned by ONE 948%), Siemens (20%) and Endesa (32%). (Energy policy of Morocco, 2019)

## Renewable Energy

The Moroccan government has initiated energy reforms to promote, firstly, the development of the country's industry in the renewable energy and energy efficiency sectors, secondly to infiltrate regional and international markets and, thirdly, to encourage the development of local resources. (Morocco, n.d.)

The government has upped the ante on its role in international action on climate change. Acknowledging the Paris Agreement, Morocco has set a new national climate policy and hosted the United Nations Conference of Parties (COP22) Summit in Marrakesh in 2016. (Morocco, n.d.)

Renewable energy is essential in ONE's \$3,4 billion energy advancement strategy, announced in January 2004. Following the 2010 announcement of law No 13-09 ("renewable energy law"), Morocco's framework of regulation generally supports the alternative of renewable energy in the electricity sector. In 2015, the Moroccan government announced that it will attain a 52% share of renewable energy in electricity by 2050. In order to achieve its target, Morocco invests in solar power and wind sources of renewable energy. (Energy policy of

Morocco, 2019)

#### Solar Power

Morocco announced, in November 2009, a solar energy venture to the value of \$9 billion, which officials claimed will hold a share of 38% of the country's installed power generation by 2020. Funding was stated to be from a ratio of private and state capital. The project will entail five solar power generation sites nationwide and will produce 2000 MW of electricity by 2020. Germany has conveyed its willingness to participate in the advancement of the solar project as well as a Moroccan desalination plant. (Energy policy of Morocco, 2019)

The solar project is anchored around the development of Concentrated Solar Power (CSP) and Photovoltaic (PV) facilities; both facilities are governed by the Moroccan Agency for Solar Energy (MASEN). Morocco pioneered solar power technology in the Middle East and North Africa region by pursuing CSP. This project is Morocco's strategy to cut its dependency on fossil fuels and to achieve the goal of 52% power generation from renewables by 2030. (Energy policy of Morocco, 2019)

In Morocco, the largest CSP project is Noor Solar, located in the Drâa-Tafilalet region, 10 kilometers from Ouarzazate city, on the edge of the Sahara Desert. The project comprises of three stages: Noor I, Noor II and Noor III. The first stage (Noor I) was launched in February 2016 and employs 500 000 parabolic mirrors to generate a capacity of 160 MW electricity: making it one of the largest solar power plants worldwide. Noor II and Noor III were scheduled to operate by 2018. Apart from the CSP project, Morocco is developing Noor PV 1 program as well as Noor Midelt phase 1, which essentially uses PV to additionally increase the electricity generation from solar. The entire Noor Plant development was scheduled for commission in 2018. The development would have a capacity of 582 MW; enough to supply 1.1 million houses. Electricity generation by solar and wind renewables has increased almost four-fold from 2010-2015. (Energy policy of Morocco, 2019)

#### Wind Power

Morocco has eight wind farms, as of 2016, with total operational capacity of 487 MW. This capacity is anticipated to increase to 1000 MW in 2020 with an additional six wind farms. Beginning in 2010, Morocco aims at achieving a 2 GW production capacity from wind power as part of the Moroccan Integrated Wind Energy Project (Energy policy of Morocco, 2019).

#### Hydro Power

Morocco's advantageous geographical location, encompassing the country's four perennial rivers and numerous dams, abounds opportunities for hydroelectric potential. Today, Morocco's total installed capacity is 8,262 MW of which 1,770 MW share is from hydropower. The government's policy states an increase of renewable generation capacity to 42% share of the country's energy mix by 2030. (Morocco, 2018)

In preparation for a doubling of energy demands by 2025, Morocco plans to accelerate the pace of reforms to allow public and private operators to develop 10,100 MW of supplemental capacity by 2030. This encompasses 1,330 MW of hydropower with the private sector allocated 550 MW to develop and approximately 100,6 MW in small hydro. This will help Morocco achieve 2,000 MW of installed hydropower capacity by 2020. (Morocco, 2018)

With 3,500km of coastline, Morocco's geographical context presents the opportunity for the advancement of pumped storage projects which, coupled with existing solar and wind renewables, can provide a viable solution to a stable and reliable renewable strategy. (Morocco, 2018)

The main power in the power sector is government owned Office National de l'Electricité et de l'Eau Potable (ONEE) is carrying out an environmental and social management system (SMES) at the Al Wahada (the second-largest dam in Africa) and Afourer hydropower plants. Furthermore, the ministry of Energy in partnership with the German government is committing to the assessment of the viability of seawater pumped storage. (Morocco, 2018)

Two new pumped storage stations totaling a capacity of 600 MW was announced by ONEE in 2017. The first station, El Menzel II station, will be situated in upper Sebou. The second station, Ifhasa station, will be constructed on the right bank of Oued Laou, completion date scheduled for 2025. These stations will evenly split the 600 MW capacity required. (Morocco, 2018)

The commissioning of the 350 MW Abdelmoumen pumped-storage, situated 7km NE of Agadir, will supplement

the 450 MW Afourer project. Abdelmoumen will be commissioned in 2020, adding 350 MW of capacity to Morocco. (Morocco, 2018)

Moreover, construction of the 128 MW Khénifra hydropower plant has begun coupled with several small hydropower strategies. (Morocco, 2018)

### Biomass Energy

As with hydropower potential, biomass is also a renewable that Morocco possesses in abundance. Despite the 12,568 GWh/year potential in solid bioenergy and ratio of biogas and biofuels, the country has only capitalized on 1% of its biomass potential due to high cost implications of investment and insufficient refining process skills and knowledge. (Energy policy of Morocco, 2019)

### Nuclear Energy

Morocco has indicated interest in nuclear energy primarily for desalination as well as other purposes. The Moroccan government signed an agreement in September of 2001 with the United States initiating the legal groundwork for constructing a 2 MW research reactor. The agreement with U.S. company General Atomics is to construct the reactor east of capital, Rabat. (Energy policy of Morocco, 2019)

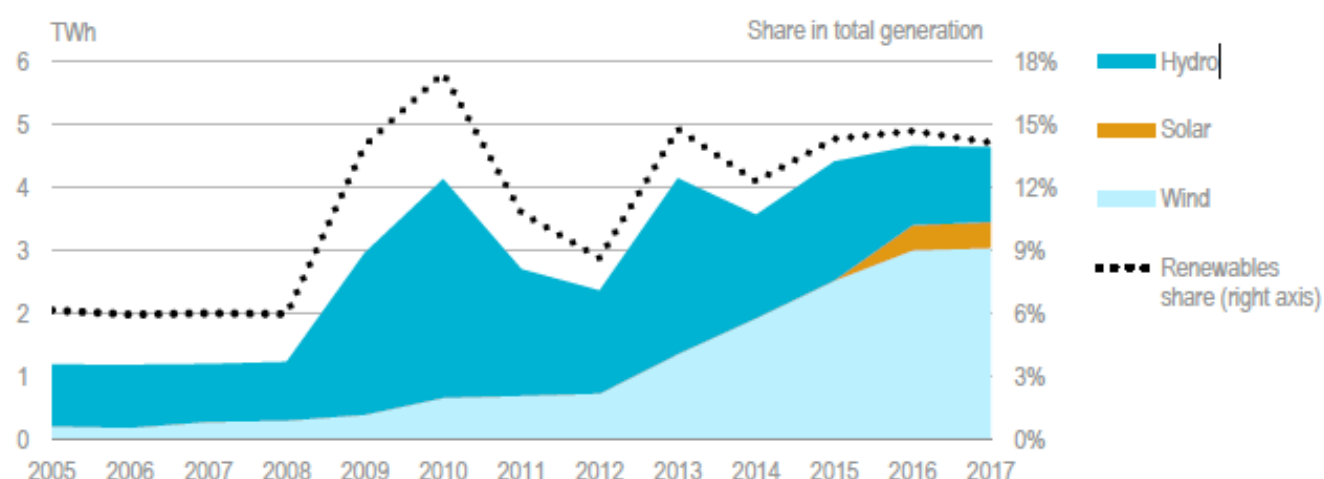


Figure 10: Renewable energy generation by source Morocco (IEA, 2019).

Theoretically, Morocco could become entirely self-sufficient with electric energy as the total production of all Moroccan electric energy generating facilities accounts for 29 billion kWh per annum. Despite this, Morocco trades energy with foreign countries (Energy consumption in Morocco, n.d.)



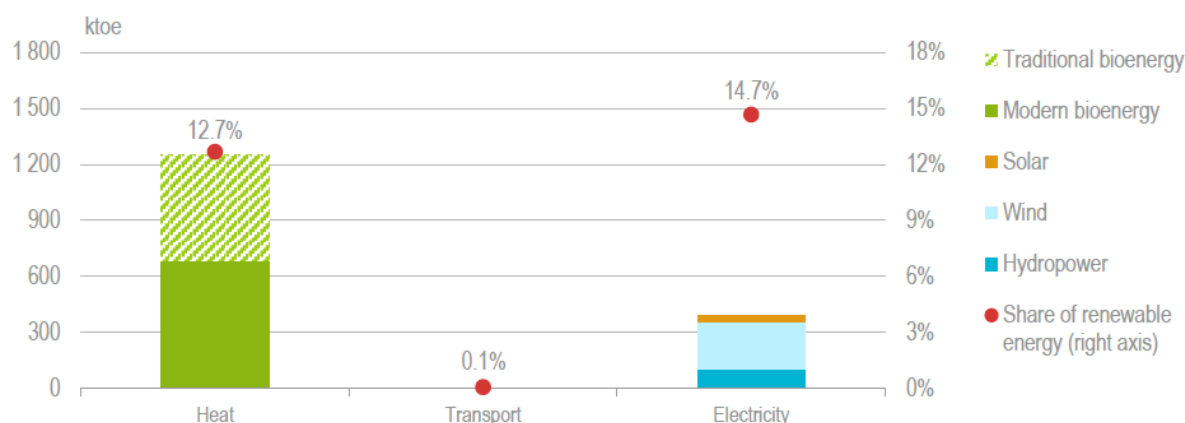


Figure 11: Renewable energy supply by sector and source (IEA, 2019).

The advancement of renewable alternatives in Morocco is encouraging energy security as well as helping to deliver on Morocco's clean energy and climate change commitments. Morocco is making strong strides aimed at affordable, reliable, and sustainable energy aligned with the United Nations Sustainable Development Goals (SDG 7). However, advancement in energy intensity reduction of Morocco economy has proven to be very challenging to achieve. Although the contribution of renewables is progressing steadily, its contribution in total final consumption decreased significantly over the past 10 years due to exponential energy demand. SDG 7 seeks a significant increase in the contributions of renewable energy in the global energy mix by 2030. As Morocco only has renewable energy targets for electricity, the government is encouraged to develop targets for the utilization of modern renewables in the transport and residential sectors; this will substantially reduce reliance on fossil fuel use. Morocco's continued reliance on fossil fuel imports, namely coal, oil and gas, for the majority of its energy needs, abounds opportunities to reduce imports by advancing domestic energy resources to reduce oil and coal use (Morocco, n.d.).

## Water

Morocco is a water-scarce country faced with diminishing groundwater reserves and a strong reliance on rainwater, especially for agriculture. Many rural communities depend on a single water source to support households and their livelihoods. An insufficiently functioning sanitation network and wastewater treatment system results in already scarce water resources to become contaminated and therefore unsuitable for multipurpose use. (Water and Sanitation, 2019)

Currently, 83% of Moroccans have access to improved drinking water and 72%, have access to improved sanitation (Nunnally, n.d.). In 2017, as per Figure 12 below, 70.27% of the population used a "safely managed" drinking water service—an improved source located on premises, available when needed and free from contamination (UN SDG Country Profile, 2017).

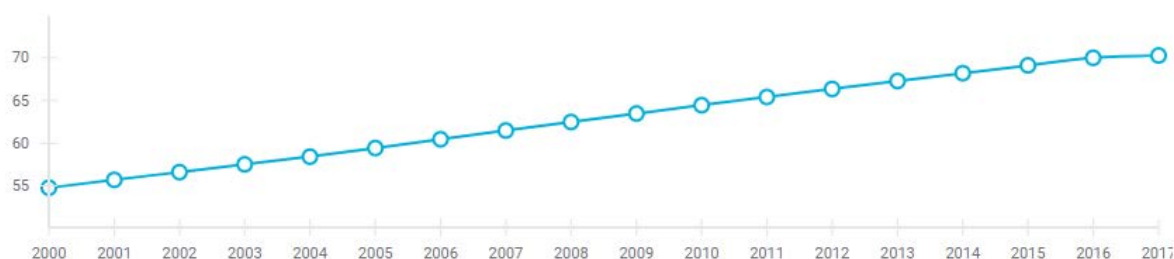


Figure 12: Percentage of population using safely managed drinking water services (Water and Sanitation, 2019).

Most of the drinking water in Morocco is sourced from seven rivers. From north to south, the seven rivers are the Loukkos River, the Moulouya River, the Sebou River, the Bou Regreg River, the Oum Er-Rbia River, the Tensift

River and the Souss-Massa-Draa basin. The Loukkos River is the only one that does not originate in the Atlas Mountains (Magnus, 2019).

Approximately 69% of Morocco's drinking water comes from the above rivers and the remaining 31% from groundwater. Morocco is projected to receive 50% less rainfall by 2050 which means that the country anticipates water shortages. To counter this, Morocco's growing interest in seawater desalination as a source of water matches its growing water demands for drinking, industry, and mining (Magnus, 2019).

Morocco's water supply and sanitation are provided by numerous utilities ranging from private companies in four cities, including Casablanca and Rabat, to public municipal utilities in 13 other cities, as well as ONEE. ONEE manages bulk water supply to the utilities mentioned, water distribution in approximately 500 small towns, including sewerage and wastewater treatment in 60 of these towns (Water supply and sanitation in Morocco, 2020).

In Casablanca and surrounding areas, water treatment and delivery are managed by Lydec under a 30-year concession. Lydec is managed by Suez (world-leading water treatment provider). Lydec predominantly gets its water from the Oum Er-Rbia River. Similar arrangements are implemented in other cities such as Fez, Tangier, Sale, Meknes, Rabat, Marrakesh and Agadir, where water is treated and controlled in alignment with WHO standards (Magnus, 2019).

Aimed at supporting its development and streamlining water management, Morocco has proven its commitment to managing its water resources by constructing major water infrastructure to satisfy the country's household, industrial and agricultural demands (Afilal, 2017).

The policy on managing and mobilizing water resources by the construction of huge dams which play a role in storing rainwater in preparation for dry periods as well as for irrigation. A 1980's long-term planning policy that allows decision-makers to prepare for shortages by providing public authorities with foresight of water resource availability over a 20-30-year timeframe. Progressive strides were made at the regulatory and institutional level to advance water management efficiency across the country. This references the adoption of essential pieces of legislation, namely Law 10-95 for integrated, participatory, and decentralized water resources management through the founding of water basin agencies and the commissioning of mechanisms for the conservation of water resources. The Advancement of technical and scientific research skills in the appropriate agencies at both the central and local levels. (Afilal, 2017) As a result of these policies and investments, Morocco now has the capacity to harvest 17.6 billion m<sup>3</sup> of rainwater into 140 enormous dams and thousands of boreholes and wells to capture groundwater. (Afilal, 2017)

The past fifteen years has witnessed significant improvements to the access of water supply but to a lesser extent to sanitation. In a growing population, the percentage of Moroccans lacking access to water and sanitation are faced with a variety of challenges including mass migrations, bringing the majority of the population to the cities giving rise to slums. These communities are generally situated bordering urban areas where access to clean water, sanitation and electricity services do not exist. (Water supply and sanitation in Morocco, 2020)

The 33% of Moroccans lacking access to sufficient sanitation are at high risk of waterborne diseases such as gastrointestinal infections, malaria and typhoid. Despite Morocco's agricultural industry's GDP responsibility of 19%, only 15% of agricultural land has access to irrigation. Lack of sanitation services and inadequate wastewater treatment results in contamination of the, already scarce, water resources.

Further challenges include a low degree of wastewater treatment (13% treated from collected wastewater), insufficient house connections in the most impoverished urban areas, and limited sustainability of rural systems (20% estimated to be dysfunctional). (Water supply and sanitation in Morocco, 2020)

A National Sanitation Program was approved, in 2005, that's goal is to treat 60% of wastewater collected and securing 80% of urban households to sewers by 2020. Lack of water connections for the urban poor is being addressed as part of the National Human Development Initiative. (Water supply and sanitation in Morocco, 2020).

From 2004-2011, Morocco's 'Cities Without Slums' development campaign realized 100,000 new housing units, effectively providing 1.5 million people with access to water, sanitation and power. (Nunnally, n.d.)

Moroccan water resource management is further supported by USAID by introducing new technology to help advance agricultural productivity and rural livelihoods by reducing operational costs while using less water. In addressing water supply, sanitation and hygiene, USAID cooperates with local-level water-supply government institutions to incorporate water-efficient technology and water management strategies that promote conservation and grow public awareness and community participation in water challenges. (Water and Sanitation, 2019).

Groundwater, indicated in Figure 13 below, accounts for approximately 20% of water resources. The biggest aquifers cover 10% of the country. Groundwater withdrawals are overexploited by around 4.2 BCM/year and are 10% higher than the average annual recharge. The high extraction rate has resulted in a water table drop of 2 meters per year (Water Resources in Morocco, 2019).

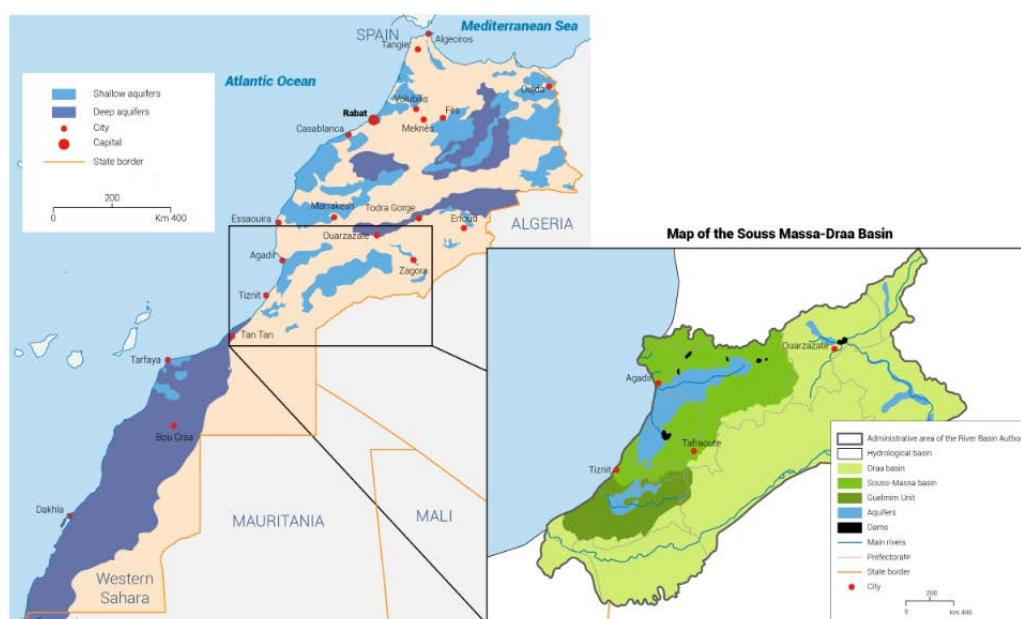


Figure 13: Groundwater distribution (Water Resources in Morocco, 2019).

## Waste Generation and Recycling

Morocco is admirable in North Africa for its share in promoting the use of renewable energy, however, like its neighbors, the country has a crucial problem with waste. (Morocco's recycling pioneers, 2017)

Morocco inaugurated a new Solid Waste Management Plan in 2008; aimed at eliminating mis-managed waste, and recycling 20% of plastic waste by 2020. Despite its goals to develop waste management facilities, Morocco's operational landfill count was a mere 14 landfills in 2016, focused around major cities. Establishing new, government-owned waste treatment facilities and backing municipalities to advance greater waste management capacity can significantly reduce open dumping. Merely 10 Moroccan private recycling establishments are operational, and the lack of a stable flow of high-quality plastic waste and low profitability of the sector have resulted in low recycling rates. Lastly, Morocco initiated a ban on plastic bags, although the ban has not impacted the vast informal market, which has proven to be difficult to harness. Greater control and enforcement of the ban, and further consumption bans, can help relieve the plastic waste at risk of infiltrating into nature. (Dalberg Advisors, WWF Mediterranean Marine Initiative, 2019 "Stop the Flood of Plastic: How Mediterranean countries can save their sea")

Funded by Dirham 40 billion (3,7 billion Euro), Morocco's National Program for Household Waste Management of 2008 aimed at the advancement in waste collection and recycling and also overhauling the country's landfills. (Morocco: "Huge Potential for Investment", n.d.)

The strategy has proven its viability with official collection rates doubling from 44% to 85.2% from 2008-2016. The construction of 22 new landfill and trash treatment centers has, in part, aided the National Program for Household Waste Management. Three additional centers under construction are provided to propel the national treatment rate of household waste from 53% today to 81%.

Following a comprehensive audit by the United Nations in 2014, it was determined a recycling rate of merely 8-10%. Additionally, there was no structure in place to separate household recyclables like glass, paper and card, plastic and metals, no recycling system for batteries, no data on used tires and no centralized or organized waste collection for electrical and electronic equipment waste. Furthermore, approximately 30 million tons of construction waste created yearly were predominantly not separated and dumped on the roadside, riverside on unused plots of land. The audit also revealed that recyclable household waste – recycled and collected by unofficial waste pickers – was sold to wholesalers and sent to Casablanca to convert it to energy, for reuse or to export. Generally, waste segregation has not yet been facilitated. There is an informal recycling sector, which describes valuable waste recovered by waste pickers at landfill sites. (Morocco: "Huge Potential for Investment", n.d.)

Outlining other solutions such as a \$271.3 million program, supported by the World Bank, from 2009-2011 had already resulted in the founding of a National Commission of Solid Waste Management; an efficient result-focused incentive strategy allocating national financial resources to support municipalities; the professional collection services benefitting 66% of the urban population; higher municipal service tax; the disposal rate to sanitary landfills increase from 10% in 2008 to 37% in 2013; the closing or rehabilitation of 21 open dump sites; the development of 15 well-managed landfills; the authorization of 21 environmental impact assessments; and the trialing of social inclusion interests for approximately 150 waste pickers (Morocco: "Huge Potential for Investment", n.d.).

Although the effects of these measures did not benefit Morocco as an entirety. A 2017 scientific study on the province 'Khenifra' revealed 6 communities that were completely oblivious to the waste management law in Morocco. Additionally, the municipalities had never attempted to trial a selective collection or compost due to the heterogenous nature of the waste and the challenge of sorting. This may describe the force of municipalities to landfilling options (Morocco: "Huge Potential for Investment", n.d.). Figure 14 below indicates the proportions of plastic produced, used, managed, and mismanaged in Morocco, with Figure 15 showing locations of recycling facilities, small controlled landfills, large controlled landfills and controlled landfills under construction.

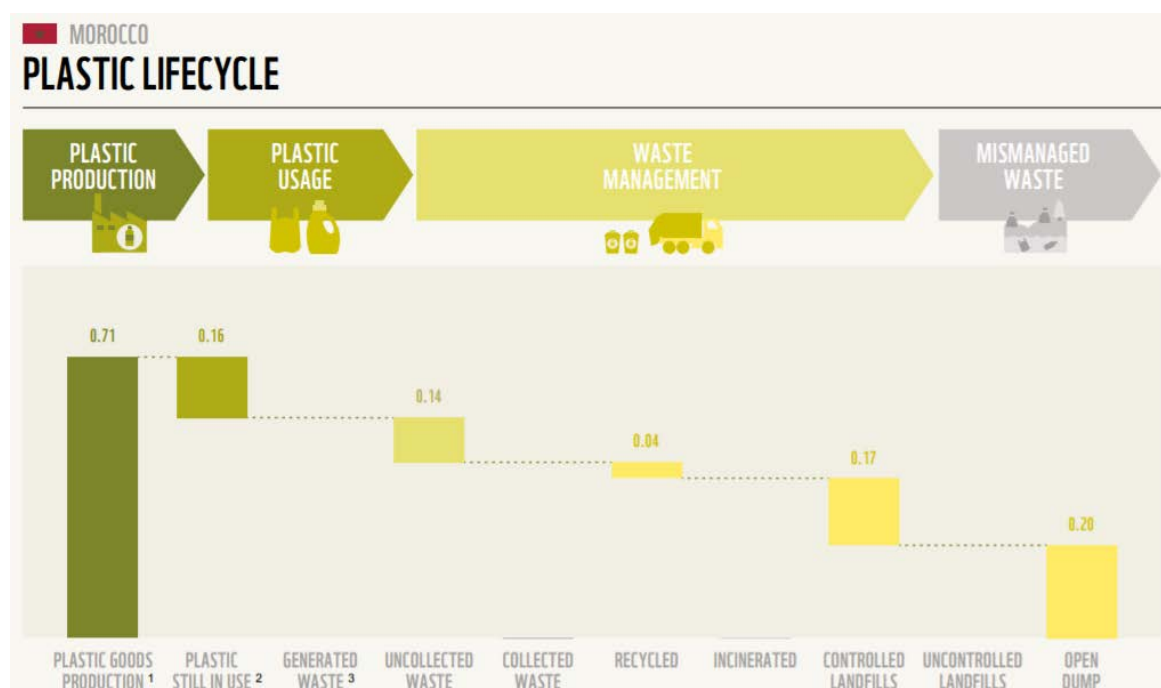


Figure 14: Plastic in Morocco (Stop the Flood of Plastic: How Mediterranean countries can save their sea, 2019).

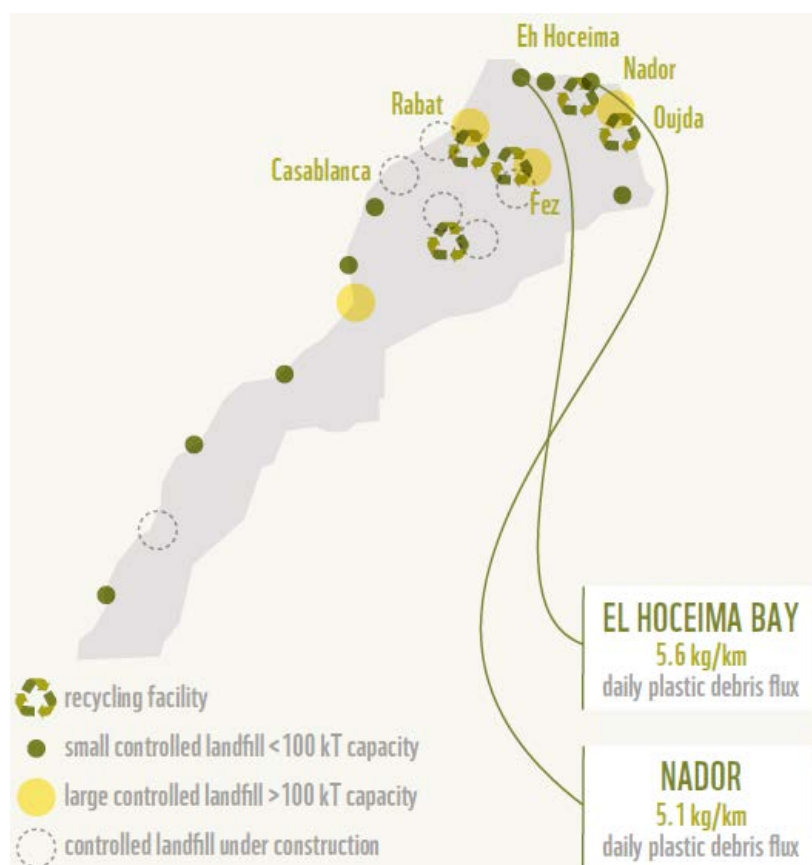


Figure 15: Waste Facilities in Morocco (Stop the Flood of Plastic: How Mediterranean countries can save their sea, 2019).

Majority of the waste in Morocco is made up of largely organic waste, with plastics and paper/cardboard making up only 20% of the waste composition; with glass making up the smallest percentage at 3%.

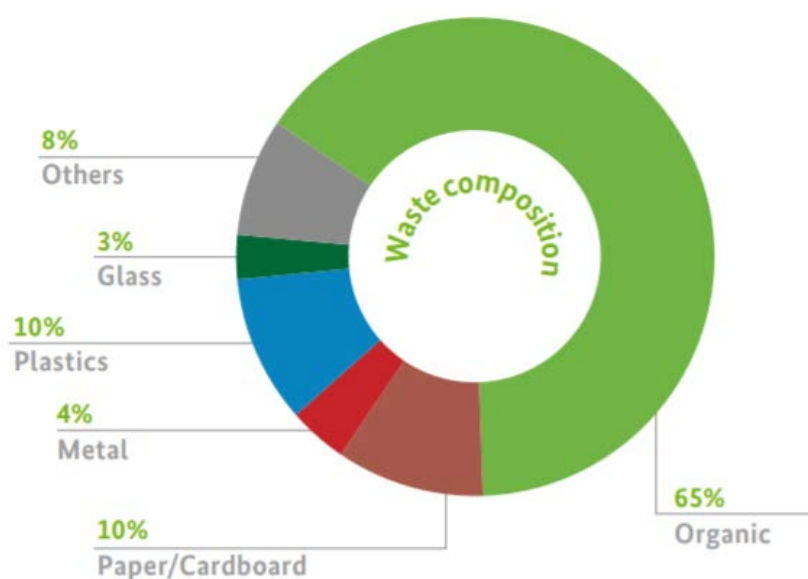


Figure 16: Waste composition in Morocco. (Report on the Solid Waste Management in Morocco, 2014)

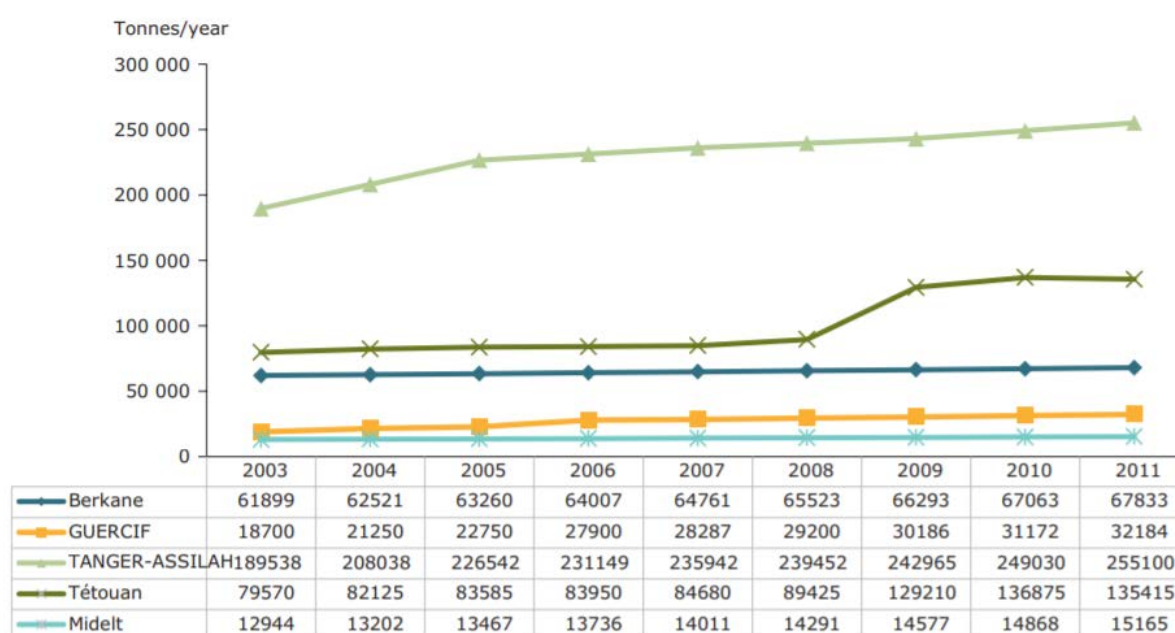


Figure 17: Waste produced from 2003-2011 in Morocco (Horizon 2020 Mediterranean report, 2014)

### Building Sector Growth

Morocco's building sector is expanding rapidly. From 600 million m<sup>2</sup> in 2017, with rising demand building growth will need to increase by an additional 250 million m<sup>2</sup> by 2030. The fastest growing market segment is middle income housing and the largest market is for modern Moroccan housing, a specific type of housing combining residential and commercial activities. Morocco has a large share of houses built by their owners. While 67% of Moroccans own their home, only 12% buy it from private and 2% from a public real estate developer. In particular the most popular type of housing (modern Moroccan housing) is mostly self-built (Building Brief - Morocco, 2019).

## Transport and Mobility

*“Morocco is a well-recognized model in the region for sustainable urban mobility. Its authorities have acknowledged that only concrete action towards sustainability can improve the Kingdom’s economic, social and environmental performance”. (Calvet, 2019)*

Over the years, Morocco has demonstrated a strong vision for public transport, in particular by leading a reflection around the decentralization of public transport networks and by setting up the Support Fund for Transport Restructuring (UITP: Advancing Public Transport, 2019).

As economic development progresses and urban centers rapidly grow, Moroccan cities are increasingly facing urban mobility challenges and seeing disruptive technologies change the way these problems are addressed (Oxford Business Group, 2020). Rabat, which saw its population increase by 18% over the last decade, is expected to accommodate 1.94m passenger movements per day in 2024, up from 1.49m in 2014. Casablanca’s 2019 figure of 7.8m movements per day is expected to rise to 10m by 2030 (Oxford Business Group, 2020).

Bus transportation in Morocco is based on a concessions model and in August 2019 private transport operator ALSA (a subsidiary of UK-based National Express) launched 37 bus lines in Rabat. Its fleet of 250 vehicles is set to increase to 350 over a period of years. In November 2019 Casablanca’s started a new partnership with ALSA, which will progressively take over the current bus fleet and add 700 new buses by 2021 (Oxford Business Group, 2020).

In Marrakesh, the bus rapid transit (BRT) system has a fleet of 30 fully-electric buses and consists of four lines with their own dedicated lanes, linking the city’s surrounding areas to two points in the city center with interchanges at Douar Al Askar, Bab Doukkala and Jamaâ el Fna (From BRT to Tram Lines: How Morocco is boosting Public Transport , 2016).

Morocco Government aims to support the cities in helping them develop a clear vision of urban mobility for the next decade. By adopting new governance frameworks that focus on bringing together districts from the same metropolitan area in will improve mobility and bring cities together (Nour-Eddine Boutayeb, 2015).

The initiatives that Government has put in place will further integrate public transportation networks and increase private sector participation. In Morocco, public transportation should be considered as a means of boosting socio-economic integration while connecting suburban areas with economic centers and ultimately moving towards a more inclusive development (Oxford Business Group, 2020).

## Urban Realities of Morocco

Morocco’s society and economy continues to be transformed by urbanisation. To date, population displacement in Morocco has increased by 25% since 1970 towards urban area, resulting in a 60% total. Despite a higher fertility rate in rural areas, rural-urban migration makes Morocco’s sustained population growth of a predominantly urban nature. Trends project that by 2050 that three-quarters of Morocco’s population will be urbanites. Coupled with the densification of people, urbanisation will also result in the concentration of economic activities in cities; accounting for approximately 75% of the country’s GDP and 70% of investment at the national level (Lall, Mahgoub, Maria, Touati, & Acero, Leveraging Urbanization To Promote A New Growth Model While Reducing Territorial Disparities In Morocco, 2020).

Morocco’s urbanisation, despite its challenges, is the generator of the demographic and economic growth that we know today. Demonstrating strong potential to absorb rural poverty (poverty rates at 4.8% in urban areas and 14.5% in rural areas) through substantial public investment, cities remain afflicted by poverty-stricken districts. The year 2014 saw approximately 325 000 urbanites living below the relative poverty threshold of US\$3.1 per day (in 2011 purchasing power parity terms) and an additional 1.6 million Moroccans being economically insecure. Urban unemployment is demonstrated at 14% compared to 3.8% rural unemployment. Youth unemployment is mostly evidenced as an urban occurrence compared to in rural areas at 36% and 8.4% respectively (Lall, Mahgoub, Maria, Touati, & Acero, Leveraging Urbanization To Promote A New Growth Model While Reducing Territorial Disparities In Morocco, 2020).

Spatial disparities remain a key cause for concern for Moroccan civilians as well as for national and local governments. Rural per capita household consumption exhibits a 54% less difference compared to urban areas with skewed access to services and social protection. Morocco's latest years saw the adoption of ambitious programs by the government to address living standards in urban and rural areas. The successful roll-out of these living standard initiatives saw significant improvement through national master plans such as the Cities without Slums Program (Programme Villes sans Bidonvilles), which aspired to eradicate slums in the urban nodes from 2004-2010. At least 167 000 households benefited from improved housing conditions or were rehoused as a result of the Cities without Slums Program. In conjunction, from 2000-2015, 230 cities experienced improved living conditions and urban nodes through urban upgrading programs (programmes de mise à niveau urbaine). Additionally, the National Human Development Initiative - tasked with combatting social exclusion in urban areas and improving living standards of the population – has benefitted over 1.6 million households (Lall, Mahgoub, Maria, Touati, & Acero, Leveraging Urbanization To Promote A New Growth Model While Reducing Territorial Disparities In Morocco, 2020).

Cities generate positive spill-overs for both their surrounding metropolitan regions (particularly rural areas) as well as for the Morocco in a broader sense with 80% of total tax receipts and 60% of total employment stemming from urban areas. However, despite contextually similar precedence, Morocco has not generated the same degree of growth benefits. In comparison, Morocco's urbanisation evidences consistently lower levels of GDP per capita due to slower structural of the economic and a lower share of tradable sectors in the economies of large to medium cities. These trends suggest that Morocco requires particular policies to enhance returns from its urbanisation process (Lall, Mahgoub, Maria, Touati, & Acero, Leveraging Urbanization To Promote A New Growth Model While Reducing Territorial Disparities In Morocco, 2020).

Countries, such as Morocco, that have successfully leveraged urbanisation to stimulate growth while minimising territorial disparities as well as the rift in living conditions have communicated differentiated and integrated policies to address particular territorial development challenges. The benefits manifesting from both economic concentration and social convergence necessitates implementing policy actions aimed at economic integration. Integration is established via institutions that secure access to basic services for everyone. As economic integration becomes for challenging, corresponding policies should incorporate roads, railways, airports, harbours and communications systems that establish the routes for goods, services, people, and ideas. Where integration is most challenging (for social and administrative reasons) the response should include integrated policies, with institutions that unite, infrastructure that integrates and strategies that target, for example slum-eradicating interventions focused on specific vulnerable factions (Lall, Mahgoub, Maria, Touati, & Acero, Leveraging Urbanization To Promote A New Growth Model While Reducing Territorial Disparities In Morocco, 2020).

## Key Legislation, Policy and Strategies

### Moroccan Urban planning policy

The National Law No 12-90 on urban planning sets out the general principles applicable to strategic planning and zoning in Morocco. This law is governed by the national authority, namely the Ministry of Planning of the National Territory, Urban Planning, Housing and City Policy (Chambers and Partners , 2020).

Strategic plans and zoning schemes are established through the issue of Urban Development Master Plans and zoning plans. Development plans are prepared by each municipality, dividing the area into zones of different uses, and attributing building density ratios to each zone (Chambers and Partners , 2020).

Urban planning (and zoning) regulations must be verified before applying for a specific project's building permit. The specific plans and regulations for each local region within Morocco are available to the public from the relevant local urban agency (through completion of a dedicated application form) informing applicable uses and



restrictions regarding construction of buildings (Morocco OECD Dialogue on Territorial Development Policies , 2018).

No agreement with public authorities is necessary in order to facilitate a private development project. However, in some cases involving a specific real estate project (mostly to promote tourism, industrial, artisanal and social housing projects), it is possible to request and obtain an authorisation from the relevant authorities to derogate from the applicable urban regulations (Morocco OECD Dialogue on Territorial Development Policies , 2018).

### Moroccan Energy Strategy

Energy and climate policy in Morocco have seen major developments since the first International Energy Agency (IEA) in-depth review (IDR) of the country in 2014 and the IEA Clean Energy Technology Assessment of Morocco in 2016. Since 2014, the government of Morocco has proceeded with energy reforms based on the priorities outlined in its 2009 National Energy Strategy to enhance energy supply diversification, foster the development of Morocco's industry and economy in the sectors of renewable energy and energy efficiency; integrate with regional and international markets; make energy efficiency a national priority; and encourage the development of indigenous resources (Energy Policies Beyond IEA Countries - Morocco 2019, 2019).

In this context, Law No 13-09 relating to renewable energies was promulgated in 2010 to liberalise and develop the renewable energy sector in Morocco through the opening up of renewable electric and thermic production to competition (Energy Policies Beyond IEA Countries - Morocco 2019, 2019).

The government has stepped up its role in international action on climate change, ratifying the Paris Agreement, setting a new national climate policy and hosting the United Nations Conference of Parties (COP22) summit in Marrakesh in 2016 (Energy Policies Beyond IEA Countries - Morocco 2019, 2019).

The development of renewables is helping to improve energy security as well as deliver on Morocco's clean energy and climate change commitments. Morocco is making strong progress towards affordable, reliable, sustainable and modern energy in line with the United Nations Sustainable Development Goals (SDG 7).

Climate policy and renewable energy deployment contribute to the development of the economy, attract foreign investment, create employment, and boost its industrial sector. With its ambitious clean energy transition, Morocco is attracting international green finance and is becoming a partner in the Mediterranean region and in Africa (Energy Policies Beyond IEA Countries - Morocco 2019, 2019).

### Moroccan Environmental Policy

Mindful of environmental degradation consequences, Morocco has developed a legal framework and policies for environmental protection and sustainable development.

The established environmental policies are the following:

- Law No. 11-03 for environmental protection and development.
- Law No. 10-95 for water conservation and management
- Law No. 13-03 for minimization and control of atmospheric pollution
- Law 28-00 for waste management
- Law No. 22-10 for use of degradable or biodegradable plastic bags and sachets
- Law 1203 stipulating the requirements for completing an Environmental Impact Study was promulgated in 2008.
- 

### Law No. 11-03

Law No: 11-03 which relates to the protection and enhancement of the environment was promulgated in 12 May 2003. This law defines the principles and guidelines for the Moroccan environmental legal strategy. This general law adopts a global and integrated approach ensuring the best possible balance between the need to preserve the environment and the country's economic and social development needs.

The objective of Law No. 11-03 is to provide a framework which governs the protection of the environment. The law deals with the need to preserve and protect natural resources such as soil and subsoil, fauna, flora and biodiversity, inland waters, air, coastline, countryside and mountainous areas , by introducing legislative and regulatory measures which must be taken to ensure their protection from the various forms of pollution, to fix the conditions of their exploitation and to specify the standards of their control.

Thus, the promulgation of this law was accompanied by the development of Law No. 12-03 relating to the completion of environmental impact studies, Law No. 13-03 relating to minimization and control of atmospheric pollution and Law No. 28-00 which regulates waste management and disposal (Collection of Laws relating to Environmental Protection , 2010).

#### Law No. 10-95

Law No. 10-95 for the conservation and management of water resources was promulgated on August 16, 1995. Its objective was to set up a national water policy which considers developments resources and national water needs. The law provides legal provisions aimed at rationalizing the use of water, generalizing access to water, interregional solidarity, reducing disparities between cities and the countryside in order to ensure hydraulic safety. of the whole territory of the Kingdom (Morocco) (Collection of Laws relating to Environmental Protection , 2010).

#### Law No. 13-03

Law No. 13-03 on Combating Air Pollution contains all the necessary provisions to set up a system for the efficient management of air quality. Furthermore, the 2009 Decree No. 2-09-286, which falls under the Law 13-03, sets standards for air quality and the procedures for air monitoring that is not complemented by regulations for using the information gathered in decision-making. Similarly, the 2010 Decree No. 2-09-631, which also falls under the Law 13-03, setting limit values for clearance, emission or discharge of pollutants into the air from stationary sources of pollution and the procedures for air monitoring, has to be applied to industrial plants. There are currently two voluntary initiatives to limit air emissions, based on international recommendations. No specific order for sectoral values has been adopted so far, although these have largely already been developed by the relevant public authorities. There are also no obligations on industry to self-monitor their emissions or to report them (United Nations, 2012).

#### Law No. 28-00

Law No. 28-00 regulates waste management and disposal and was promulgated on 07 December 7, 2006. This law controls the management of household, industrial, medical and hazardous waste (Collection of Laws relating to Environmental Protection , 2010).

This law prescribes standards and technical prescriptions for the following aspects

- Management of hazardous waste
- Management of non-hazardous industrial, medical, pharmaceutical, agricultural, inert, and household waste
- Labelling and packaging of containers used to transport hazardous waste
- Management of hazardous medical and pharmaceutical waste
- Design of controlled landfill sites
- Opening, transfer, closure or substantial modification of the treatment, recovery, incineration, storage, elimination of landfill, household, and similar waste

- Waste recovery methods
- Sorting, packaging, collection, transport, storage, treatment, classification, and elimination of waste
- Reduction in the quantity and harmfulness of waste during its production

#### Law No. 22-10

The 2010 Law No. 22-10 on the Use of Degradable or Biodegradable Plastic Bags and Sacks specifies mandatory standards for plastic bags, below which domestic production, import, sale or free distribution are forbidden. These standards do not, however, apply to plastic bags for agricultural and industrial use and for waste collection. Non-compliance with the Law is subject to sanctions (United Nations, 2012).

#### Law No. 12-03

Law no 12-03 stipulating the requirements for completing an Environmental Impact Study was promulgated in 2008.

To manage and protect the environment, Moroccan legislation defines the requirement for completing an Environmental Impact Study in order to assess the project's impact on the environment and to determine its compatibility with the country's environmental protection requirements.

The environmental impact study is a systematic means of evaluating the various impacts of the project on mankind, fauna and flora, soil, water, air, climate, historical sites, public sanitation and security while taking into consideration the interactions between these factors.

The environmental impact assessment includes an in-depth description of the project, a thorough evaluation of the potential impacts associated with the project and investigation into the possible measures to be used to minimise the negative impacts. It also includes a monitoring programme which details actions pertaining to all management, communication, and training requirements of the project. Every project is subject to public inquiry process.

The government authority in charge of the environment, in conjunction with the National Committee or the Regional Committees on environmental impact studies, will decide on the 'environmental will decide on the 'environmental acceptability' of a project subject to the completion and submission of an environmental impact study (Collection of Laws relating to Environmental Protection , 2010).

#### Socio Economic / Historic Factors Associated With The Planning Perspective For Morocco

Post-colonial Moroccan urban planning has been critiqued for its lack of imagination through functionalism that runs hand in hand with progressivism with the primary goal of social reform through development and infrastructure. The primary critique is linked to the notion that space is unimaginatively perceived as an absolute object that exists within its own boundaries and devoid of any social or cultural properties. This functionalist approach to zoning has led to an increase in social segregation through its spatial divisions.

The legislative principles that govern the Moroccan urban planning process are tied to its colonial legacy and in need of complete reform and while legislation allows for a process of public participation, it has been argued that this process has historically undermined the voice of the citizen (Idrissi, 2014 ).

Although urbanization is positively affecting the Moroccan social and economic environment, the seemingly uncoordinated responsibilities linked to territorial planning have resulted in fragmented urban expansion and land access constraints. The challenges faced by urbanization are attributed to a lack of organisation by local administrations with regards to urban and territorial planning. Furthermore, local administrations will need to

coordinate with Moroccan government in order to improve the connectivity between and within cities and to ensure affordability and access to public transport for the urban population (Lall, Mahgoub, Maria, Touati, & Acero V, Leveraging Urbanization to Promote a New Growth Model While Reducing Territorial Disparities in Morocco : Urban and Regional Development Policy Note, 2019).

### Historical layout and urban planning in Morocco

The historic towns or medinas were split between the commercial and residential use areas. The former consisted of streets lined with shops and businesses leading to a central mosque and primarily occupied by men. The latter was a loosely coordinated assemblage of clustered houses representing neighbourhoods and built around dead-end streets. The residential areas were predominantly occupied by women and children during the daytime. Situated at the boundary of the medina was the residential home of the king (Studer, 2014). Many cities in Morocco represent over 800 years of history in their architecture and in many cases were founded as either a residential city or a military camp by a sultan or a king throughout Moroccan history. Cities were divided into quarters based on religion, kinship and commercial activity and inhabited by a mixed socio-economic population (Studer, 2014).

The French administration introduced professional urban planning after setting up the protectorate in 1912. Morocco was used by the western powers as an experiment for urbanism. New cities and towns intended for European immigrants were built adjacent to existing medinas with the intention of creating dual cities. The intention of the dual cities was to allow Europeans and Moroccans to coexist without requiring that either adapt their customs and traditions too drastically (Studer, 2014).

Morocco was under the authoritarian rule of the French Army general and colonial administrator Hubert Lyautey. Lyautey has been praised (in 1931) for his implementation of urbanism in Morocco – for choosing to make a clear distinction between new cities and the existing medinas, which would allow existing Moroccan traditions to remain unaffected by the arriving European traditions. During the French occupation of Morocco, the French administration would seize land that was being used by regional tribes, divide the land into lots and then sell those lots in order to finance their planned developments on that land (Studer, 2014).

After Moroccan independence from the French rule in 1956, many native Moroccans who had historically occupied the medinas began moving into the European cities and towns. The distinction shifted from colonial (European cities) and native (medinas) to formal and informal settlements resulting in different planning approaches applied to each. These differences in planning can clearly be seen in many of present-day Morocco's towns and cities, with a clear distinction between the informal and formal parts of each city (Studer, 2014). A total reform of municipalities in 1976 led to a reimagining of the planning process, whereby additional quarters were introduced to the city space. The three primary quarters – where city centres were housed – included the informal quarter (medina), the formal quarter (European section) and the economic quarter. Land owners and community committees became more actively involved in urban development and were eventually integrated into the municipal and governmental planning activities (Studer, 2014).

In 2007, planning approaches shifted to be more inclusive of informal quarters within the conception of a city and planning documents recommended that all quarters be considered as part of the imagined city or town space (Studer, 2014).

# Applying Green Star SA Credit by Credit

The Green Star SA Sustainable Precincts Tool has been assessed for relevance on a credit by credit basis. Each credit's applicability to the Moroccan context is discussed and recommendations are made of where the project team must submit a Credit Interpretation Request (CIR) to the GBCSA where an alternative standard may be better suited.

## Eligibility criteria

### Space Use

Set out below are the building classifications as defined by the NCC 2016 Building Code of Australia – Volume One. Effort has been made to find a correlated description for the Moroccan context, however in Morocco, building types are not classified like that of South Africa and Australia, and therefore to align the to the Sustainable Precincts Tool, Morocco is to align selected building types, to international standards, with the Occupancy and Building Classifications as set out in the NCC 2016 Building Code of Australia – Volume One until such time that a similar code system is available in Morocco. These are to be read together with the General Construction Regulation in Morocco (Règlement Général de Construction au Maroc), Decree n°2-13-424 Law No 12-90 on Urban planning and Decree n° 2-14-499 on the Security Regulations against the risk of fire and panic in constructions (Le Règlement général de construction fixant les règles de sécurité contre les risques d'incendie et de panique dans les constructions)..

**Class 1:** one or more buildings, which in association constitute—

- a) **Class 1a** — a single dwelling being—
  - i. a detached house; or
  - ii. one of a group of two or more attached dwellings, each being a building, separated by a fire-resisting wall, including a row house, terrace house, townhouse or villa unit; or
- b) **Class 1b** —
  - i. (i) a boarding house, guest house, hostel or the like—
    - A. with a total area of all floors not exceeding 300 m<sup>2</sup> measured over the enclosing walls of the Class 1b; and
    - B. in which not more than 12 persons would ordinarily be resident; or
  - ii. 4 or more single dwellings located on one allotment and used for short-term holiday accommodation, which are not located above or below another dwelling or another Class of building other than a private garage.

**Class 2:** a building containing 2 or more sole-occupancy units each being a separate dwelling.

**Class 3:** a residential building, other than a building of Class 1 or 2, which is a commonplace of long term or transient living for a number of unrelated persons, including—

- a) a boarding house, guest house, hostel, lodging house or backpacker's accommodation; or
- b) a residential part of a hotel or motel; or
- c) a residential part of a school; or
- d) accommodation for the aged, children or people with disabilities; or
- e) a residential part of a health-care building which accommodates members of staff; or
- f) a residential part of a detention center.

**Class 4:** a dwelling in a building that is Class 5, 6, 7, 8 or 9 if it is the only dwelling in the building.

**Class 4** is excluded from the Space Use requirements as set out in the Communities Guidelines.

**Class 5:** an office building used for professional or commercial purposes, excluding buildings of Class 6, 7, 8 or 9.

**Class 6:** a shop or other building for the sale of goods by retail or the supply of services direct to the public, including —

- a. an eating room, café, restaurant, milk or soft-drink bar; or
- b. a dining room, bar area that is not an assembly building, shop or kiosk part of a hotel or motel; or
- c. a hairdresser's or barber's shop, public laundry, or undertaker's establishment; or
- d. market or sale room, showroom, or service station.

**Class 7:** a building which is—

- a. **Class 7a** — a carpark; or
- b. **Class 7b** — for storage or display of goods or produce for sale by wholesale.

**Class 8:** a laboratory, or a building in which a handicraft or process for the production, assembling, altering, repairing, packing, finishing, or cleaning of goods or produce is carried on for trade, sale, or gain.

**Class 9:** a building of a public nature—

- a) **Class 9a** — a health-care building, including those parts of the building set aside as a laboratory; or
- b) **Class 9b** — an assembly building, including a trade workshop, laboratory or the like in a primary or secondary school, but excluding any other parts of the building that are of another Class; or
- c) **Class 9c** — an aged care building.

#### Spatial Differentiation

No changes to the current requirements

#### Conditional Requirement

Projects must meet the Conditional Requirement as set out in CREDIT 28 Sustainable Sites. The project must be subject to the Law 12-03 on Environmental Impact Studies and projects must obtain an environmental acceptability decision from the Ministry of Environment.

#### Timing of Certification

No changes to the current requirements

#### Implementation & Re-certification

Green Star – Sustainable Precincts requires projects to maintain a valid rating throughout their lifetime, until the plan for development is fully built out. The certification process for Green Star – Sustainable Precincts requires an Initial Certification, and subsequent Recertification at 5 (five) year intervals until the plan for development is fully built out. If the project is not recertified within these 5-year intervals the rating will expire.

If your project build-out programme is somewhat longer than 5 years or 5-year multiples, the GBCSA will accept 6 or 7 years as an acceptable period - this is to be agreed on a project-by-project basis via Technical Clarification.

The Recertification process consists of three types of checks:

1. New credits check – new credits that were not submitted at the Initial Certification stage require complete assessment to verify compliance with the credit criteria.
2. Revised/updated credits check – where project details have changed (i.e. physical changes to the design or changes in design methodology) and compliance with the credit criteria needs to be reaffirmed.
3. Unchanged credits check - no check required.

#### Green Star SA category weighting system

It has been agreed with the project team that the category weighting system should remain the same as that of the Green Star SA rating tools, until such a time as there is the capacity to facilitate a revision of the category environmental weighting system.

## Credit Overview

### Credit by credit review

For each credit reviewed as part of this report, the credits are color coded in accordance with the changes required for applicability to the local context:

	The credit should be kept in its current form and no adjustments need to be made.
	The credit requires a mandatory CIR or TC or adaptation or additional guidance to ensure relevance to the Moroccan context.
	The credit should be omitted and made 'not applicable' for the Moroccan application of the tool.

- the aim of the credit is defined
- the credit's suitability to the Moroccan context is interrogated
- recommendations for minor changes, where applicable for the purpose of application within the Moroccan context, of the Green Star SA Sustainable Precincts tool are made

Moroccan projects would also be required to use the latest Green Star SA TCs, CIRs and Errata relevant to rating tools, published on the GBCSA's website, which represent the current version of that specific tool.

GOVERNANCE			28
Credit	Credit Name		Points
GOV-1	Green Star Accredited Professional		1
GOV-2	Design Review		8
GOV-3	Engagement		6
GOV-4	Adaptation and Resilience		4
GOV-5	Corporate Responsibility		3
GOV-6	Sustainability Awareness		2
GOV-7	Community Participation and Governance		2
GOV-8	Environmental Management		2
LIVEABILITY			22
Credit	Credit Name		Points
LIV-9	Healthy and Active Living		5
LIV-10	Community Development		4
LIV-11	Sustainable Buildings		4
LIV-12	Culture, Heritage and Identity		3
LIV-13	Walkable Access to Amenities		2
LIV-14	Access to Fresh Food		2
LIV-15	Safe Places		2

ECONOMIC PROSPERITY			21
Credit	Credit Name		Points
ECON-16	Community Investment		4
ECON-17	Affordability		4
ECON-18	Employment and Economic Resilience		2
ECON-19	Education and Skills Development		3
ECON-20	Return on Investment		2
ECON-21	Incentive Programs		2
ECON-22	Digital Infrastructure		2
ECON-23	Peak Electricity Demand Reduction		2
ENVIRONMENT			29
Credit	Credit Name		Points
ENV-24	Integrated Water Cycle		7
ENV-25	Greenhouse Gas Emissions		6
ENV-26	Materials		5
ENV-27	Sustainable Transport and Movement		3
ENV-28	Sustainable Sites		2
ENV-29	Ecological Value		2
ENV-30	Waste Management		2
ENV-31	Urban Heat Island		1
ENV-32	Light Pollution		1
INNOVATION			10
Credit	Credit Name		Points
INN-33	Innovation		10



## Governance


GOV-1	Green Star Accredited Professional
GOV-2	Design Review
GOV-3	Engagement
GOV-4	Adaptation and Resilience
GOV-5	Corporate Responsibility
GOV-6	Sustainability Awareness
GOV-7	Community Participation and Governance
GOV-8	Environmental Management

	Credit Title	Aim of the Credit	Credit Criteria Summary	Technical Manual Compliance Requirements	Technical Manual Definitions	Technical Manual Guidance	Technical Manual Documentation Requirements	No. of Points Available	No. of Points Achieved	Points to be Confirmed	Reasons for changes/Summary	GBCA Concluding Comments
GOV-01	Green Star SA AP	To recognise projects that engage a Green Star SA Accredited Professional to support the Green Star SA certification process.	1.1 1 point is available where a Green Star SA Accredited Professional (GSA AP) has been contractually engaged to provide advice, support, and information related to Green Star principles, structure, timing and processes, throughout the relevant certification period.	1.1 One (1) point is awarded when a <del>Green Star Accredited Professional (GSA AP)</del> Green Star South Africa Accredited Professional (GSA AP), with Green Star <del>Community Sustainable Precincts</del> training, has been contractually engaged as part of the project team, to deliver services in accordance with the requirements of 1.1.1 to 1.1.5.  1.1.1 <del>The GSA AP must have attended the Green Building Council of Australia's GBC program and have current accreditation throughout the relevant certification period. –</del> GSA AP must have attended the Green Star Sustainable Precincts Workshop and passed the Green Star Sustainable Precincts exam (i.e. be a Green Star Sustainable Precincts AP). Before starting on the project. For Pilot projects, the Green Star Sustainable Precincts exam is to be passed before project's first submission. 1.1.2 <del>The GSA AP must provide advice and support (see Guidance) to ensure that the project team has access to information covering Green Star principles, structure, timing, and process including: a. Eligibility b. Categories c. Point allocation and scores d. Documentation and Compliance Requirements e. Technical Clarification and Credit Interpretation Requests f. Certification process g. Green Star branding and marketing rules 1.1.3 For initial certification the GSA AP must complete the Project Inception Checklist (see Guidance). 1.1.4 The GSA AP must facilitate at least two workshops (see Guidance) with the project team, covering the Green Star principles, structure, timing, and process topics outlined in 1.1.2 1.1.5 The GSA AP must provide guidance and support to the design team at all stages of the project, as follows.</del>  2.0 Design Review Requirements As per the Green Star Communities v1.1 Submission Guidelines  2.0.1 Including Design Review in the Planning and Design Process a. As per the Green Star Communities v1.1 Submission Guidelines b. At least one design review meeting must be held prior to the submission of a Development Agreement (DA) (or similar) with any relevant approval/consent authority. It is the responsibility of the applicant to organise and implement the design reviews of the site planning, layout and urban design; the GBGA does not facilitate this process.  2.0.2 Composition of the Design Review Panel a. As per the Green Star Communities v1.1 Submission Guidelines b. As per the Green Star Communities v1.1 Submission Guidelines c. Be registered by a relevant professional <del>body</del> (see Guidance) and be bound by that institution's code of ethics in relation to objectivity, integrity and accountability.  2.0.3 Type of Design Review The Design Review process undertaken by the project can be one of the following types: A. As per the Green Star Communities v1.1 Submission Guidelines B. As per the Green Star Communities v1.1 Submission Guidelines C. As per the Green Star Communities v1.1 Submission Guidelines	Green Star (SA) <del>Community Sustainable Precincts</del> Accredited Professional – an individual who has acquired the appropriate competencies, skills and knowledge to become a Green Star SA Accredited Professional. The person must have attended the Green Star <del>Community Sustainable Precincts</del> Course and passed the Green Star <del>Community Sustainable Precincts</del> exam.	1.1 As per the Green Star Communities v1.1 Submission Guidelines	1.1 Additional Supporting Documents <del>Copy of Green Star Sustainable Precincts AP Certificate</del>	1		1.1 As there is no accreditation currently available at Morocco GBC, therefore the credit remains as is with any professional seeking AP accreditation to do so through the GBGA.	Project approach approved	
			2.1 Site Planning and Layout Up to 4 points are available where the project's site planning and layout is subject to a design review process: 2 points are awarded for an in-house design review process. 3 points are awarded for a mixed design review process. 4 points are awarded for a fully independent design review process.	2.1 As per the Green Star Communities v1.1 Submission Guidelines	2.1 Additional Reference Documents <del>-Act No 46 of 2013 Spatial Planning and Land Use Management Act, 2013 -City of Cape Town Municipal By-Law, 2014 (as applicable municipal By-Law based on project location) -Dahir Law No 12-90 on Urban Planning</del>	2.1 Additional Supporting Documents As per the Green Star Communities v1.1 Submission Guidelines	4		2.1 More relevant references for Morocco have been included.	Project approach approved		
GOV-02	Design Review	To encourage and recognise projects that undertake a design review process designed to facilitate sustainable urbanism.	2.2 Urban Design Up to 4 points are available where the project's urban design is subject to a design review process: 2 points are awarded for an in-house design review process. 3 points are awarded for a mixed design review process. 4 points are awarded for a fully independent design review process.	2.2 As per the Green Star Communities v1.1 Submission Guidelines	2.2 As per the Green Star Communities v1.1 Submission Guidelines	2.2 Additional Reference Documents In addition to the documentation listed in the Submission Guidelines, project team may also use the Department of Cooperative Governance and Traditional Affairs Integrated Urban Design Guidelines <del>-City of Cape Town Urban Design Policy, Sep 2012 -Dahir Law No 12-90 on Urban Planning</del>	2.2 Additional Supporting Documents A copy of the outlined Review Methodology compiled by the panel chair CV's of the 7 panel members not serving as the chairperson	4		2.2 More relevant references for Morocco have been included.	Project approach approved	
			3.1 Stakeholder Engagement Strategy 3 points are available where the project has a Stakeholder Engagement Strategy prepared in accordance with the specified requirements.  3.1.1 Commitment 3.1.1.1 The Strategy must contain a commitment statement from the project applicant that addresses the International Association for Public Participation (IAP2) core values for public participation. This commitment may include elements such as a value statement, policy and/or procedures for engagement.  All other compliance requirements as per the Green Star Communities v1.1 Submission Guidelines.	3.1 As per the Green Star Communities v1.1 Submission Guidelines	3.1 Reference Standards IAP2 <del>Australia</del> <del>South Africa</del>  Alternative compliance <del>Project can use an alternative method through aligning the public participation process required during and environmental impact assessment process with the credit requirements. Projects should use the Environmental Impact Assessment Process Guidelines and will have to demonstrate that all the GOV-03 requirements have been addressed.</del>  Projects can use an alternative method through aligning the public participation process required during and environmental impact assessment process (Dahir Law 12-03) with the credit requirements. Projects following the Public Participation in the Environmental Impact Assessment Process Guidelines (Law 12-03) will have to demonstrate that all the GOV-03 requirements have been addressed.	3.1 Additional Supporting Document <del>-Act No 46 of 2013 Spatial Planning and Land Use Management Act, 2013 -Decree 2-04-564 of 5 Kaada 1429 (4 November 2008)</del>	3		3.1 IAP2 does not yet exist for the Morocco context. TMG made numerous efforts at communicating and engaging with IAP2 regarding the registration of Morocco for IAP2, however these were unsuccessful. Therefore projects will have to align their stakeholder engagement strategy and commitment with the International IAP2 Core Values.  Where projects are to follow the EIA public participation process a CIR must be submitted. In electing to use the EIA public participation process for compliance, project teams will need to demonstrate that all the requirements outlined within the GOV-03 Engagement credits have been incorporated and addressed during the public participation process.	Project approach approved		
GOV-03	Engagement	To encourage and recognise projects that develop and implement a comprehensive, project specific stakeholder engagement strategy early in the planning process.	3.2 Strategy Implementation 3 additional points are available where 3.1 has been achieved and there is evidence that the Stakeholder Engagement Strategy is being implemented and formal monitoring, evaluation and corrective action is being undertaken.	3.2 As per the Green Star Communities v1.1 Submission Guidelines	3.2 As per the Green Star Communities v1.1 Submission Guidelines	3.2 As per the Green Star Communities v1.1 Submission Guidelines	3.2 As per the Green Star Communities v1.1 Submission Guidelines	3		3.2 No changes have been made, this credit has been accepted as is.	Project approach approved	
			4.1 Climate Adaptation 2 points are available where a project-specific Climate Adaptation Plan (CAP) has been developed in accordance with a recognised standard and Solutions have been included into the plan for development that specifically addresses the risk assessment component of the adaptation plan.  4.2 Community Resilience 2 points are available where, prior to the occupation of any habitable building on the project site, a project specific Community Resilience Plan (CRP) has been developed that addresses preparation, during- and post-disaster communication, safety, and response	4.1 As per the Green Star Communities v1.1 Submission Guidelines  4.2 As per the Green Star Communities v1.1 Submission Guidelines	4.1 Climate Scenarios (South Africa) It is recommended that project teams refer to CAHO's Australian Climate Futures portal (https://australianclimatefutureportal.com.au/) for the latest climate scenarios. It is recommended that project teams refer to CAHO's Australian Climate Futures portal (https://australianclimatefutureportal.com.au/) for the latest climate scenarios.  Additional Reference Documents <del>-National Climate Change Response -Climate Change Adaptation Plan City of Johannesburg 2009 -Moroccan Climate Change Policy (MCCP), March 2014 -National Plan against Global Warming (PNAG, 2009) -National Adaptation Plan to Climate Change 2003 (NAP) -National Strategy for Sustainable Development (NSDD) for 2017-2030 -Law n°199-12 of March 06, 2014 related to National Charter for Environment and Sustainable Development -National Directorate of Meteorology - http://www.meteo.ma/ -The Morocco Competence Center on Climate Change (4C) - https://www.4c.ma/en</del>  4.2 Additional Reference Documents <del>-Act No 46 of 2013 Spatial Planning and Land Use Management Act, 2013 -Act No 46 of 2013 Spatial Planning and Land Use Management Act, 2013 -Roadmap for Integrated Climate Risk Management, May 2019 -Integrated Disaster Risk Management and Resilience Program for Results, 2016</del>	4.1 As per the Green Star Communities v1.1 Submission Guidelines  4.2 As per the Green Star Communities v1.1 Submission Guidelines	2  2		4.1 Additional Moroccan additional guidance reference documents have been listed within the guidelines to assist in rendering the credit more applicable to the Moroccan Market. As the credit is to be completed by a suitably qualified individual, the one will be on the said professional to use the correct Global Circulation Models (GCM) endorsed by the IPCC (Intergovernmental Panel on Climate Change).  4.2 Additional reference added for local context	Project approach approved		
GOV-04	Adaptation and Resilience	To encourage and recognise projects that are resilient to the impacts of a changing climate and natural disasters.	5.1 Corporate Responsibility 1 point is available where the project applicant has a corporate responsibility policy and reports publicly about it annually. 5.1.6 GRI Value.	5.1 As per the Green Star Communities v1.1 Submission Guidelines	5.1 As per the Green Star Communities v1.1 Submission Guidelines	5.1 As per the Green Star Communities v1.1 Submission Guidelines	5.1 As per the Green Star Communities v1.1 Submission Guidelines	1		5.1 No changes have been made, this credit has been accepted as is.	Project approach approved	
			5.2 Sustainability Reporting Up to 2 points are available where the project applicant undertakes sustainability reporting annually in accordance with the GRI Sustainability Reporting Guidelines, for either the core (1 point) or comprehensive (2 points) options.	5.2 Sustainability Reporting Up to two (2) points are awarded where the project applicant undertakes Sustainability Reporting annually in compliance with the GRI Sustainability Reporting Guidelines or the King Code IV, and in accordance with one of the following two alternative pathways: A. One (1) point is awarded where the sustainability reporting is in accordance with the 'Core' option of 5.2.1A or B. Two (2) points are awarded where the sustainability reporting is in accordance with the 'Comprehensive' option of 5.2.1B. C. Two (2) points are awarded where sustainability reporting is in accordance with the King IV.	5.2 As per the Green Star Communities v1.1 Submission Guidelines	5.2 Additional Reference Documents King IV  Alternative Compliance: Projects can use an alternative method, CGEM (La Confédération Générale des Entreprises du Maroc) which is the representative of the private sector to public authorities and institutions. CGEM principles are based on the ISO 26000 core subjects. Projects are to align all requirements with that of GOV-5.  The documentation listed below to demonstrate that the project applicant undertakes sustainability reporting annually in accordance with King IV Extracts from the King IV report demonstrating compliance with all stipulated credit requirements  The documentation listed below to demonstrate that the project applicant undertakes sustainability reporting annually in accordance with CGEM Extracts from the CGEM report demonstrating compliance with all stipulated credit requirements	5.2 As per the Green Star Communities v1.1 Submission Guidelines	2		5.2 Stakeholder discussion and research found that Corporate Responsibility Policy reflecting the core subjects identified in ISO 26000 are applicable in the Moroccan context as ISO standards are currently already used by larger corporations. Whilst the GRI Sustainability Guidelines and King IV are applicable to Morocco, it was flagged during workshops that use of CGEM may also be used, which is a representative of the private sector to public authorities and institutions. Where projects are affiliated, they are able to use CGEM and ensure it aligns to the GOV-5 requirements as well as ensure it meets the core subjects of ISO 26000.  Where projects are not affiliated to CGEM project teams may use GRI Sustainability Reporting Guidelines or the King Code IV. This is important especially for those not affiliated with CGEM as well as smaller entities.  Where projects are to follow CGEM a CIR must be submitted.	Project approach approved	
GOV-05	Corporate Responsibility	To encourage and recognise projects with a project applicant that has corporate responsibility (CR) as a core value.	5.1 Corporate Responsibility 1 point is available where the project applicant has a corporate responsibility policy and reports publicly about it annually. 5.1.6 GRI Value.	5.1 As per the Green Star Communities v1.1 Submission Guidelines	5.1 As per the Green Star Communities v1.1 Submission Guidelines	5.1 As per the Green Star Communities v1.1 Submission Guidelines	5.1 As per the Green Star Communities v1.1 Submission Guidelines	1		5.1 No changes have been made, this credit has been accepted as is.	Project approach approved	
			5.2 Sustainability Reporting Up to 2 points are available where the project applicant undertakes sustainability reporting annually in accordance with the GRI Sustainability Reporting Guidelines, for either the core (1 point) or comprehensive (2 points) options.	5.2 Sustainability Reporting Up to two (2) points are awarded where the project applicant undertakes Sustainability Reporting annually in compliance with the GRI Sustainability Reporting Guidelines or the King Code IV, and in accordance with one of the following two alternative pathways: A. One (1) point is awarded where the sustainability reporting is in accordance with the 'Core' option of 5.2.1A or B. Two (2) points are awarded where the sustainability reporting is in accordance with the 'Comprehensive' option of 5.2.1B. C. Two (2) points are awarded where sustainability reporting is in accordance with the King IV.	5.2 As per the Green Star Communities v1.1 Submission Guidelines	5.2 Additional Reference Documents King IV  Alternative Compliance: Projects can use an alternative method, CGEM (La Confédération Générale des Entreprises du Maroc) which is the representative of the private sector to public authorities and institutions. CGEM principles are based on the ISO 26000 core subjects. Projects are to align all requirements with that of GOV-5.  The documentation listed below to demonstrate that the project applicant undertakes sustainability reporting annually in accordance with King IV Extracts from the King IV report demonstrating compliance with all stipulated credit requirements  The documentation listed below to demonstrate that the project applicant undertakes sustainability reporting annually in accordance with CGEM Extracts from the CGEM report demonstrating compliance with all stipulated credit requirements	5.2 As per the Green Star Communities v1.1 Submission Guidelines	2		5.2 Stakeholder discussion and research found that Corporate Responsibility Policy reflecting the core subjects identified in ISO 26000 are applicable in the Moroccan context as ISO standards are currently already used by larger corporations. Whilst the GRI Sustainability Guidelines and King IV are applicable to Morocco, it was flagged during workshops that use of CGEM may also be used, which is a representative of the private sector to public authorities and institutions. Where projects are affiliated, they are able to use CGEM and ensure it aligns to the GOV-5 requirements as well as ensure it meets the core subjects of ISO 26000.  Where projects are not affiliated to CGEM project teams may use GRI Sustainability Reporting Guidelines or the King Code IV. This is important especially for those not affiliated with CGEM as well as smaller entities.  Where projects are to follow CGEM a CIR must be submitted.	Project approach approved	

GOV-06	Sustainability Awareness	To encourage and recognise those projects that enhance knowledge and understanding of its sustainability attributes.	<b>6.1 Community Users' Guide</b> 1 point is available where a Community Users' Guide is developed for, and provided to all project occupants. The Community Users' Guide must also be publicly available.  <b>6.2 Sustainability Education Facility</b> 1 point is available for the provision of physical sustainability education facilities on the project site.	6.1 As per the Green Star Communities v1.1 Submission Guidelines	6.1 As per the Green Star Communities v1.1 Submission Guidelines	6.1 As per the Green Star Communities v1.1 Submission Guidelines	6.1 As per the Green Star Communities v1.1 Submission Guidelines	1			6.1 No changes have been made, this credit has been accepted as is.	Project approach approved
				6.2 As per the Green Star Communities v1.1 Submission Guidelines	6.2 As per the Green Star Communities v1.1 Submission Guidelines	6.2 As per the Green Star Communities v1.1 Submission Guidelines	6.2 As per the Green Star Communities v1.1 Submission Guidelines	1			6.2 No changes have been made, this credit has been accepted as is.	Project approach approved
GOV-07	Community Participation and Governance	To encourage and recognise projects that establish mechanisms for community participation in management arrangements for facilities and programs.	<b>7.1 Community Facility Management</b> 1 point is available where a community led entity is responsible for the management and/or coordination of at least one community facility.  <b>7.2 Community Program Management</b> 1 point is available where a community led entity is responsible for the management and/or coordination of at least one community program or service.	7.1 As per the Green Star Communities v1.1 Submission Guidelines	7.1 As per the Green Star Communities v1.1 Submission Guidelines	7.1 As per the Green Star Communities v1.1 Submission Guidelines	7.1 As per the Green Star Communities v1.1 Submission Guidelines	1			7.1 No changes have been made, this credit has been accepted as is.	Project approach approved
				7.2 As per the Green Star Communities v1.1 Submission Guidelines	7.2 As per the Green Star Communities v1.1 Submission Guidelines	7.2 As per the Green Star Communities v1.1 Submission Guidelines	7.2 As per the Green Star Communities v1.1 Submission Guidelines	1			7.2 No changes have been made, this credit has been accepted as is.	Project approach approved
GOV-08	Environmental Management	To encourage and recognise the adoption of formal environmental management practices.	<b>8.1 Environmental Management System</b> 1 point is available where all contractors with a contract value of > <del>50-million-ZAR</del> <del>50-million-MAD</del> 70 million have a valid ISO 14001 Environmental Management System (EMS) accreditation prior to and throughout the duration of the contract(s).  <b>8.1.1</b> All contractors, which have one or more contract(s) for the project site, which have a total combined contract value of > <del>44-million-ZAR</del> <del>44-million-MAD</del> 29 million, must meet the accreditation requirement. Contractors with a combined contract value of <del>50-million-ZAR</del> <del>50-million-MAD</del> 70 million or less are excluded.  <b>8.1.2 &amp; 8.1.3 As per the Green Star Communities v1.1 Submission Guidelines</b>	<del>Construction Works – any design, construction or operation activity associated with a development under Part 4 of the Environmental Planning and Assessment Act 1979 (as amended) or any activity under Part 4 of the Act involving building works or related works.</del>  <del>Construction Works means any of the following work:</del> Any activity that alters the physical form or biological functioning (e.g. using paint on site has the potential to alter the biological function of the site) of the site, including but not limited to: • Demolition; • Earthworks; • Construction; and • Provision of services	8.1 As per the Green Star Communities v1.1 Submission Guidelines	<del>8.1 All referenced 50-million amounts to be replaced with 24000-million. All referenced 150 million ZAR will be replaced with MAD 29 million</del>	1			<b>8.1</b> The first part of the credit requires that appointed contractors have contract amounts over R50 million (ZAR). Research had to be conducted to convert the ZAR amount to MAD (Moroccan Dirham). In order to convert the ZAR to MAD, two alternatives were considered. Purchasing Power Parity (PPP) and direct conversion.  <b>1.</b> Use the Purchasing Power Parity conversion factor to calculate what the equivalent amount of R50 million ZAR would be in MAD. The World Bank lists the South African implied Exchange Rate for RSA 2018 as 6.1 whilst the Moroccan Implied Exchange Rate is listed as 3.5 (as at 26 November 2019). The new conversion factor was then calculated as follows:  1 USD = 0.18 0.18 x R50 000 000= MAD 29 000 000  The amount calculated using the PPP proved to be too low. It was suggested that an amount that is too low may disadvantage smaller contractors, as attaining an ISO 14001 certificate may prove to be too expensive for them.  <b>2.</b> The second alternative investigated was a direct conversion from ZAR to MAD using the current exchange rate at 1.5332 (November 2016). The amount converted amount came approximately MAD 75 Millions.  Purchasing Power Parity (PPP) was used with the contract amount set at 29 million MAD. Further research was done to determine if this amount is acceptable for the Moroccan market, to ensure that the credit is challenging enough to make it aspirational but not so challenging that it would not be targeted by projects. Although it was noted that the purchasing power parity (ppp) was slightly low, it was agreed that an uptake of accreditation amongst contractors in the market would be beneficial and therefore the PPP methodology is preferred. It was also noted that generally contract values of over 100 million (MAD) have ISO Certifications, however it was noted again that given the above that a lower rate would allow for more inclusivity amongst contractors	Project approach approved	
			<b>8.2 Environmental Management Plan</b> 1 point is available where the developer requires the development and implementation of a comprehensive, project-specific Environmental Management Plan (EMP) for construction works.	<b>8.2 Environmental Management Plan</b> 8.2.1 - As per the Green Star Communities v1.1 Submission Guidelines 8.2.2 The EMP must be developed in accordance with <del>and</del> the most recent version of the <del>the NWMP-Environmental-Management-System-Guidelines</del> Western Cape Environmental Management Plan Guidelines.	<b>8.2 Environmental Management Plan</b> <del>NWMP-Environmental-Management-System-Guidelines.</del>  <del>The Western Cape Environmental Management Plan Guidelines have been identified as the reference benchmark for best practice in the development and implementation of a comprehensive EMP.</del>  <del>This does not however mean that projects cannot use an alternative guideline to undertake the development of their EMP. Alternative guidelines used to undertake the development and implementation of an EMP must be approved by the GBCSA through a Credit Interpretation Request.</del>  Dahur Law 12-03 relating to Environmental Studies has been identified as the reference benchmark for best practice in the development and implementation of a comprehensive EMP.  This does not however mean that projects cannot use an alternative guideline to undertake the development of their EMP. Alternative guidelines used to undertake the development and implementation of an EMP must be approved by the GBCSA through a Credit Interpretation Request.  <b>Standards and Guidelines</b> Dahur Law 99-12 on the National Environmental and Sustainable Charter Dahur (Royal Decree) no. 1-03-59 of 20 Rabii I 1424 (22 May 2003) promulgating law no. 12-03 relative to the protection and reclamation of the environment Dahur Law No12-03 related to Environmental Impact Studies	<del>8.2 Documentation to support the use of the Western Cape Environmental Management Plan Guidelines in the development of a project-specific EMP.</del>  <del>NWMP-Environmental-Management-System-Guidelines reference to be replaced with the Western Cape Environmental Management Plan Guidelines</del> Western Cape Environmental Management Plan Guidelines will be replaced by Dahur Law 12-03 relating to Environmental Studies	1			<b>8.2</b> Western Cape Environmental Management Plan (EMP) Guidelines to be replaced by Dahur Law 12-03 relation to Environmental Impact Studies to make the credit more applicable to the Moroccan Market.	Project approach approved	

## Livability

LIV-9	Healthy and Active Living
LIV-10	Community Development
LIV-11	Sustainable Buildings
LIV-12	Culture, Heritage and Identity
LIV-13	Walkable Access to Amenities
LIV-14	Access to Fresh Food
LIV-15	Safe Places

	Credit Title	Aim of the Credit	Credit Criteria Summary	Technical Manual Compliance Requirements	Technical Manual Definitions	Technical Manual Guidance	Technical Manual Documentation Requirements	No. of Points Available	No. of Points Achieved	Points to be subtracted	Reasons for changes/Summary	GBCA Concluding Comments
LIV-09	Healthy and Active Living	To encourage and recognise projects that promote healthy and active living.	<b>9.0 Minimum Requirement- Footpaths</b> To be eligible for points in this credit, projects must provide footpaths in line with the project's street hierarchy.	<b>9.0 Minimum Requirement- Footpaths</b> The project must be provided with footpaths in accordance with the requirements of 9.0.1 to 9.0.4. 9.0.1 Footpaths must be provided in accordance with the principles outlined in the <b>South African National Standard Guidelines 2023</b> , the Australian Model Code for Residential Development (AMCROD) for pedestrian facilities (see Guidance). This Code for pedestrian facilities must be applied to all development types.  All other Compliance Requirements as per the Green Star Communities v1.1 submission guidelines	<b>Best practice standards</b> – for the purposes of this credit the default standards for open space planning in NSW have been identified as the best practice standard for Australia and for South Africa, Morocco.  <b>Footpaths</b> – Generally referred to as 'walkways' in the South African context. Areas and streets exclusively for pedestrians or where non-motorised traffic and pedestrians have priority.	<b>9.0 MINIMUM REQUIREMENT - FOOTPATHS (S)</b> <b>AMCROD Requirements:</b> The following is a summary of the AMCROD requirements for footpaths: <b>provision: SA National Model Facility Guidelines (2014): The table is a summary of the SA National design criteria for pedestrian facilities:</b> <b>Table 9.0 Characteristics of Street Types and Pedestrian Walkway Provision</b> AMCROD Requirements: The following is a summary of the AMCROD requirements for footpaths: 	<b>9.0</b> As per Green Star V1.1 Communities Submission Guidelines  Additional reference: Dahir Law 12-90 on Urban Design Decret n° 2-13-424 on General Building Regulations in Morocco (Règlement Général de Construction au Maroc (RGC))	0				Project approach approved
			<b>9.1 Active Lifestyle</b> 2 points are available where the project site has been designed and built to promote an active lifestyle, through well designed walking paths and cyclist facilities.	<b>9.1</b> As per Green Star V1.1 Communities Submission Guidelines		<b>9.1</b> As per Green Star V1.1 Communities Submission Guidelines	<b>9.1</b> As per Green Star V1.1 Communities Submission Guidelines	2			<b>9.1</b> No changes have been made, this credit has been accepted as is.	Project approach approved
			<b>9.2 Recreational Facilities</b> 2 points are available where all habitable buildings have easy access to both a local park and at least one publicly accessible sports facility.	<b>9.2</b> As per Green Star V1.1 Communities Submission Guidelines		<b>9.2</b> As per Green Star V1.1 Communities Submission Guidelines	<b>9.2</b> As per Green Star V1.1 Communities Submission Guidelines	2			<b>9.2</b> No changes are proposed for credit 9.2 Recreational Facilities. It is suggested that the guidelines provided by the Australian Communities tool be followed until an equivalent local standard has become available.	Project approach approved
			<b>9.3 Healthy Places</b> 1 point is available where 9.1 and 9.2 have both been achieved, and the development has been designed and built in line with holistic and active and healthy living principles.	<b>9.3</b> As per Green Star V1.1 Communities Submission Guidelines		<b>9.3</b> As per Green Star V1.1 Communities Submission Guidelines, except, include, under the heading <b>STANDARDS AND GUIDELINES</b> Additional Information  <b>City of Cape Town (2012): Urban Design Policy.</b> Dahir Law 12-90 on Urban Design	<b>9.3</b> As per Green Star V1.1 Communities Submission Guidelines	1			<b>9.3</b> An additional reference has been added under Additional Information Dahir Law 12-90 relating to Urban Planning as further localized reference for credit 9.3 Healthy Places.	Project approach approved
LIV-10	Community Development	To encourage and recognise projects that engage in and facilitate the development of the project's community.	<b>10.0 Minimum Requirement Community Development Plan</b> To be eligible for points in this credit, a Community Development Plan for the project community must be developed and implemented.	<b>10.0</b> As per Green Star V1.1 Communities Submission Guidelines	Include after COMPLIANCE REQUIREMENTS, before GUIDANCE, a new heading:  <b>DEFINITIONS</b>  <b>Community</b> – the relevant stakeholders who impact or are impacted by the project, for example, residents, business representatives, education representatives.	<b>10.0</b> Include under the heading GUIDANCE, a new heading:  <b>SYNERGY WITH OTHER CREDITS IN THE RATING TOOL</b>  <b>Engagement &amp; Community Participation and Governance</b> Facilities or programs that would benefit from management by a community entity could be identified through the stakeholder engagement process outlined in the Engagement credit. It is anticipated that the mechanisms for the management by a community entity would be included in the Community Development Plan as outlined in this credit.	<b>10.0</b> As per Green Star V1.1 Communities Submission Guidelines	0			<b>10.0</b> No changes have been made, this credit has been accepted as is.	Project approach approved
			<b>10.1 Community Development Officer</b> 1 point is available where a Community Development Officer is employed to implement the Community Development Plan for the project.	<b>10.1</b> As per Green Star V1.1 Communities Submission Guidelines		<b>10.1</b> As per Green Star V1.1 Communities Submission Guidelines	<b>10.1</b> As per Green Star V1.1 Communities Submission Guidelines	1			<b>10.1</b> No changes have been made, this credit has been accepted as is.	Project approach approved
			<b>10.2 Community Group</b> 1 point is available where a community group is established and contributes to the implementation of the Community Development Plan.	<b>10.2</b> As per Green Star V1.1 Communities Submission Guidelines		<b>10.2</b> As per Green Star V1.1 Communities Submission Guidelines	<b>10.2</b> As per Green Star V1.1 Communities Submission Guidelines	1			<b>10.2</b> No changes have been made, this credit has been accepted as is.	Project approach approved
			<b>10.3 Community Events</b> 1 point is available where free community events are facilitated and supported.	<b>10.3</b> As per Green Star V1.1 Communities Submission Guidelines		<b>10.3</b> As per Green Star V1.1 Communities Submission Guidelines	<b>10.3</b> As per Green Star V1.1 Communities Submission Guidelines	1			<b>10.3</b> No changes have been made, this credit has been accepted as is.	Project approach approved
			<b>10.4 Community Information</b> 1 additional point is available where at least two of the first three initiatives are undertaken and community information is made directly available and distributed to the community.	<b>10.4</b> As per Green Star V1.1 Communities Submission Guidelines		<b>10.4</b> As per Green Star V1.1 Communities Submission Guidelines	<b>10.4</b> As per Green Star V1.1 Communities Submission Guidelines	1			<b>10.4</b> No changes have been made, this credit has been accepted as is.	Project approach approved
LIV-11	Sustainable Buildings	To encourage and recognise projects that deliver sustainable buildings and energy efficient homes designed and constructed to meet the changing needs of occupants across their lifetime.	<b>11.1 Certified Non-residential Buildings</b> Up to 4 points are available based on the percentage of all buildings in the project site, which are eligible to be certified using the Green Star SA suite of building rating tools or another compliant environmental rating tool, that achieve a certified rating.	<b>11.1</b> As per Green Star V1.1 Communities Submission Guidelines	<b>EDGE - (Excellence in Design for Greater Efficiencies).</b>	<b>11.1</b> As per Green Star V1.1 Communities Submission Guidelines	<b>11.1</b> As per Green Star V1.1 Communities Submission Guidelines	4			<b>11.1</b> No changes have been made, this credit has been accepted as is.	Project approach approved
			<b>11.2 Habitable and Livable Housing Available Certified Residential Buildings</b> Up to 4 points are available based on the percentage of dwellings in the project site, which are eligible to be certified using the Green Star SA Multi Unit Residential rating tool or the EDGE rating tool or BREEM, HSE Rating or LEED rating.  A. Have achieved a <b>Habitat4RES</b> rating of 3 stars or more, and B. Have achieved certification in accordance with the guidelines for Livable Housing Design published by Livable Housing Australia, which are eligible to be certified using the Green Star Multi-Unit Residential rating tool, or EDGE rating tool, or other compliant environmental rating tool.	<b>11.2 HABITABLE AND LIVABLE HOUSING AUSTRALIA</b> Up to four (4) points are awarded based on the percentage of all dwellings on the project site, which achieve a certified rating in accordance with 11.2.1 and 11.2.2. Points are awarded on a pro-rata basis (see Guidance) when both 11.2.1 and 11.2.2 are achieved. No partial points are available when only one requirement is met. <b>11.2.1 Habitat4RES Rating:</b> The project team must demonstrate that the eligible dwellings in the project site have achieved a Habitat4RES rating of 3 stars or more. <b>11.2.2 Livable Housing Design Certification</b> The project team must demonstrate that the eligible dwellings in the project site have achieved certification from Livable Housing Australia.  <b>11.2 CERTIFIED RESIDENTIAL BUILDINGS</b> Up to four (4) points are awarded based on the percentage of all dwellings on the project site, which achieve a rating in accordance with 11.2.1. Points are awarded on a pro-rata basis. <b>11.2.1 Compliant Building Rating Tools</b> Building rating tools that can be used for demonstrating compliance include: A. The Green Star SA Multi Unit Residential Tool with a minimum of 4 points achieved under ENE-G1 B. The EDGE rating tool. C. NCQ Rating D. LEED E. BREEM	<b>11.1 &amp; 11.2 CALCULATION OF POINTS</b> Example Points Calculation - Certified Non-residential buildings (11.1) <b>homestar (11.2N2):</b> A development has 20 buildings (dwellings) and is eligible to be certified using <b>homestar</b> as the Green Star SA suite of building rating tools or another compliant environmental rating tool. <b>Example Points Calculation - Habitat4RES and Livable Housing Australia (11.2):</b> Green Star SA Multi Unit Residential rating or EDGE rating. A development has 125 dwellings and of those dwellings: 41 achieve <b>Livable Housing Australia</b> certification and a <b>Habitat4RES</b> rating of 3 stars or more, an apartment block with 50 units achieve a Green Star SA Multi Unit Residential rating and a development with 10 dwellings achieve an EDGE rating. In total 41 dwellings have achieved a rating. Points are awarded as follows: (calculation remains the same)  <b>STANDARDS AND GUIDELINES</b> <b>Referenced documents</b> The following documents are referenced in this credit: Green Star SA Rating Tools, <a href="http://www.gbca.org.au">www.gbca.org.au</a> Green Building Council of Australia, <a href="http://www.gbca.org.za">www.gbca.org.za</a> <b>Livable Housing Australia</b> , <a href="http://www.livablehousingaustralia.org.au/">http://www.livablehousingaustralia.org.au/</a> <b>EDGE Buildings</b> , <a href="http://www.edgebuildings.com/">http://www.edgebuildings.com/</a>  <b>Additional Information</b> Additional information can be found in the following documents: <b>Ageing and Life Course, Family and Community Health (2007), Global Age-Friendly Cities - A Guide, World Health Organization-Geneva</b> <b>Disability Access to Premises - Buildings Standard 2010</b>	<b>11.1 &amp; 11.2</b> Residential buildings - <b>Habitat4RES Rating</b> - <b>Multi Unit Residential (MURT) or EDGE rating</b> <b>Prior to construction:</b> A commitment from the project applicant that they will seek to have dwellings designed and constructed to achieve a <b>Habitat4RES</b> rating of 3 stars or more <b>MURT</b> rating with a minimum of 4 points achieved under ENE-G1 or an EDGE rating, and Project documentation that supports the implementation of the project applicant's commitment. <b>During construction:</b> A site plan showing the progress to date, and showing all completed dwellings; A summary of which dwellings have achieved a rating of 3 stars or more <b>MURT</b> rating with a minimum of 4 points under ENE-G1 or an EDGE rating, and A commitment from the project applicant that they will continue to seek to have dwellings designed and constructed to achieve a <b>Habitat4RES</b> rating of 3 stars or more <b>MURT</b> rating with a minimum of 4 points achieved under ENE-G1 or an EDGE rating <b>After construction:</b> A summary of how many dwellings have achieved a rating of 3 stars or more <b>MURT</b> rating with a minimum of 4 points achieved under ENE-G1 or an EDGE rating, and For those dwellings completed, provide a copy of the <b>Habitat4RES</b> MURT or EDGE rating certificate(s). Where the amount of dwellings certified would result in excessive amounts of documentation, confirmation from <b>Habitat4RES</b> or GBSCA (MURT) or from the GBSCA (EDGE) of the number of dwellings certified <b>certifications achieved</b> for the project site will be accepted.			<b>11.2</b> Where projects are to use alternative certification systems not currently listed, project teams are to submit a CR providing motivation and justification as to the equivalence of the alternative certification rating tool. Additionally, projects must provide minimum energy efficiency requirements which are in line with the Green Star SA Multi Unit Residential (MURT) Tool ensuring the alternative certification tool meets the credentials, environmental impact and rigor of the GSA MURT tool.	Project approach approved		
			<b>11.2N2 Homestar (No Projects exist)</b> Up to 4 points are available based on the percentage of all dwellings in the project site, which are eligible to be certified using the Homestar rating tool, that achieve a rating of 4 stars or greater.	<b>11.2N2 HOMESTAR (NO PROJECTS ONLY)</b> Up to four (4) points are awarded based on the percentage of all dwellings on the project site, which achieve a rating in accordance with 11.2N2.1. Points are awarded on a pro-rata basis. <b>11.2N2.1 Homestar Rating:</b> The project team must demonstrate that the eligible dwellings in the project site have achieved a Homestar rating of 4 stars or greater.		<b>11.1</b> As per Green Star V1.1 Communities Submission Guidelines	<b>11.1</b> As per Green Star V1.1 Communities Submission Guidelines				<b>11.2N2</b>	Project approach approved

LIV-12	Culture Heritage and Identity	To encourage and recognise projects that celebrate and incorporate the heritage, culture and historical context of the project site, supporting communities and places with the development of a sense of place and identity.	<b>12.1 Understanding Culture, Heritage, and Identity</b> 1 point is available where the culture, heritage, and identity of the project site has been researched and interpreted as part of the master planning process.	<b>12.1</b> As per Green Star V1.1 Communities Submission Guidelines  <i>Additional Reference</i> Law 22-80 on the conservation of historical monuments and sites, inscriptions, objects of art and antiquity promulgated by dahir No. 1-80-941 of 17 safar 1401 (25 December 1980)	As per Green Star V1.1 Communities Submission Guidelines	<b>12.1</b> As per Green Star V1.1 Communities Submission Guidelines	<b>12.1</b> As per Green Star V1.1 Communities Submission Guidelines	1			<b>12.1</b> No changes have been made, this credit has been accepted as is.	Project approach approved
			<b>12.2 Enhancing Community Culture, Heritage, and Identity</b> 2 additional points are available where the interpretation of the culture, heritage, and identity of the project site informs the design of the project in a way that strengthens cultural and heritage connections, and contributes to building a strong local identity.	<b>12.2</b> As per Green Star V1.1 Communities Submission Guidelines	As per Green Star V1.1 Communities Submission Guidelines	<b>12.2</b> As per Green Star V1.1 Communities Submission Guidelines	<b>12.2</b> As per Green Star V1.1 Communities Submission Guidelines	2			<b>12.2</b> No changes have been made, this credit has been accepted as is.	Project approach approved
LIV-13	Walkable Access to Amenities	To encourage and recognise projects that celebrate and incorporate the heritage, culture and historical context of the project site, supporting communities and places with the development of a sense of place and identity.	<b>13.1 Walkable Access to Amenities</b> 2 points are available where all habitable buildings on the project site have walkable access to a diverse number of amenities.	<b>13.1</b> As per Green Star V1.1 Communities Submission Guidelines	As per Green Star V1.1 Communities Submission Guidelines	<b>13.1</b> As per Green Star V1.1 Communities Submission Guidelines	<b>13.1</b> As per Green Star V1.1 Communities Submission Guidelines	2			<b>13.1</b> No changes have been made, this credit has been accepted as is.	Project approach approved
LIV-14	Access to Fresh Food	To encourage and recognise projects where occupants have access to fresh food within walking distance of where they live or work.	<b>14.1 Access to Fresh Food</b> 1 point is available where all habitable buildings are within a walkable distance to a source of fresh food	<b>14.1</b> As per Green Star V1.1 Communities Submission Guidelines  <i>Additional Reference</i> Plan Maroc Vert, 2010	As per Green Star V1.1 Communities Submission Guidelines	<b>14.1</b> As per Green Star V1.1 Communities Submission Guidelines	<b>14.1</b> As per Green Star V1.1 Communities Submission Guidelines	1			<b>14.1</b> Production of fresh food in Morocco is supported by Plan Maroc Vert, which the government developed in 2010. This will be included as an additional guidance reference.	Project approach approved
			<b>14.2 Local Food Production</b> 1 point is available where the project has a strategy to integrate productive landscape within the landscape objectives for the project site.	<b>14.2</b> As per Green Star V1.1 Communities Submission Guidelines	As per Green Star V1.1 Communities Submission Guidelines	<b>14.2</b> As per Green Star V1.1 Communities Submission Guidelines	<b>14.2</b> As per Green Star V1.1 Communities Submission Guidelines	1			<b>14.2</b> No changes have been made, this credit has been accepted as is.	Project approach approved
LIV-15	Safe Places	To recognise projects in which the activity of planning and detailed design for land use, development and redevelopment takes into consideration designing out crime principles.	<b>15.0 Minimum Requirement - Viability</b> To be eligible for this credit: - All tunnels and underpasses within the project site must have end-to-end visibility; and - All public areas, such as playgrounds, skate parks and community food gardens, must be visible from at least one street.	<b>15.0</b> As per Green Star V1.1 Communities Submission Guidelines	As per Green Star V1.1 Communities Submission Guidelines	<b>15.0</b> As per Green Star V1.1 Communities Submission Guidelines	<b>15.0</b> As per Green Star V1.1 Communities Submission Guidelines	0			<b>15.0</b> No changes have been made, this credit has been accepted as is.	Project approach approved
			<b>15.1 Design for Safety</b> 2 points are available where the Minimum Requirement has been met and: - A crime risk assessment process is undertaken; and - A design strategy has been adopted that incorporates designing out crime principles.	<b>15.1</b> As per Green Star V1.1 Communities Submission Guidelines		<b>15.1</b> As per the Communities Tool <del>example add under</del> <b>DESIGN FOR SAFETY (15.1)</b> <b>Designing-out Crime (South Africa)</b> <i>Project seeking to achieve certification through GBCSA can also make reference to the City of Cape Town Design and Management Guidelines for a Safe City - Design guidelines for the creation of sustainable, safe and lively neighbourhoods in Cape Town</i> <i>This document addresses the following six key overlapping CPTED principles which align to the requirements of 15.1.1 above...</i> <i>- Clear boundaries and unobstructed ownership of public space</i> <i>- Improved surveillance and activity</i> <i>- Safe access and movement</i> <i>- A positive image</i> <i>- Positive relationship and licensed spaces</i> <i>- Good urban management and monitoring</i>  <b>STANDARDS AND GUIDELINES</b> <b>Referenced Documents</b> <i>City of Cape Town (2014). Design and Management Guidelines for a Safe City Best practice guidelines for the creation of sustainable, safe and lively neighbourhoods in Cape Town</i> <i>http://resources.moph.gov.za/documents/2014/06/17/standards%20and%20guidelines%20for%20the%20creation%20of%20safe%20and%20lively%20neighbourhoods.pdf</i>  <b>Additional Information</b> <i>http://www.capegateway.org.za/</i>	<b>15.1</b> As per Green Star V1.1 Communities Submission Guidelines	2			<b>15.1</b> No policies exist for Designing out Crime in Morocco, and rather in the Moroccan context bespoke processes are undertaken in terms of safety and crime depending on the development and its scale.  A review of the Crime Index (which is estimation of overall level of crime in a given city or a country. We consider crime levels lower than 20 as very low, crime levels between 20 and 40 as being low, crime levels between 40 and 60 as being moderate, crime levels between 60 and 80 as being high and finally crime levels higher than 80 as being very high) indicates that Australia crime index is at 41.86 and Morocco at 49.06, whereas South Africa is at 77.29.  A review of the Safety Index (a higher safety index, indicating a more safe country) shows that Australia is at 58.34 and Morocco at 50.94, while South Africa, compared to Morocco sits at a low 22.71. Evidence above shows that Morocco is more in line in terms of safety and crime to Australia than that of South Africa.  Projects are therefore to follow the requirements laid out in the Communities Submission Guidelines v1.1 which address the six key CPTED principles.	Project approach approved

## Economic Prosperity

ECON-16	Community Investment
ECON-17	Affordability
ECON-18	Employment and Economic Resilience
ECON-19	Education and Skills Development
ECON-20	Return on Investment
ECON-21	Incentive Programs
ECON-22	Digital Infrastructure
ECON-23	Peak Electricity Demand Reduction

55 | Page



CCM-20	Return on Investment	To encourage and recognize holistic methods to assess the return on investment in response to the sustainability goals for the project	20.1 Analysis of Direct Costs and Benefits 1 point is available where projects apply cost and benefit analysis methods in assessing return on investment from optional investment items.	20.1 As per the Green Star Communities v1.1. submission guidelines	20.1 As per the Green Star Communities v1.1. submission guidelines	20.1 As per the Green Star Communities v1.1. submission guidelines	20.1 As per the Green Star Communities v1.1. submission guidelines	1		20.1 Credit to remain as is, with the option of pursuing a CR for Morocco specific methodologies or methodologies not yet specified.	Project approach approved
		20.2 Analysis of Indirect Costs and Benefits 1 additional point is available where: a. Criterion 20.1 is achieved; and b. Where the analysis of the costs and benefits includes indirect costs and benefits	20.2 As per the Green Star Communities v1.1. submission guidelines	20.2 As per the Green Star Communities v1.1. submission guidelines	20.2 As per the Green Star Communities v1.1. submission guidelines	20.2 As per the Green Star Communities v1.1. submission guidelines	20.2 As per the Green Star Communities v1.1. submission guidelines	1		20.2 Credit to remain as is, with the option of pursuing a CR for Morocco specific methodologies or methodologies not yet specified.	Project approach approved
		21.0 General Requirements - These relate to the compliance requirements set out in the Green Star Communities v1.1 submission guidelines - please refer to Column 23F for more detail.  21.0.1 General Requirements for Incentives Initial point d: For example, providing rebates for project occupants in a community in <del>Sydney</del> <del>suburban</del> <del>Casablanca</del> for a store in <del>Mabrouk</del> <del>Cap</del> <del>area</del> <del>where</del> <del>the</del> <del>project</del> <del>is</del> <del>not</del> <del>considered</del> <del>reasonable</del> . Initial point g: They must be in addition to any local, state or federal, provincial or national government programs or mandatory requirements in that state/province or local area.  21.0.2 Calculation of Incentive Value Incentives are classified as anything that encourages sustainable practices that reduce the ongoing cost of living and working, and which is subsidised by the project applicant. Incentives can include rebates, free items (under <del>€200</del> <del>€442</del> MAD 308), or reductions in the Recommended Retail Price (RRP) of items through bulk purchases or negotiation with suppliers.  The benefit of the incentive is quantified as an associated <del>dollar</del> <del>rand</del> MAD value. The <del>dollar</del> <del>rand</del> MAD value associated with the incentive will be the value of an item (those under: <del>\$999</del> <del>€999</del> MAD 308 provided for free), the value of a rebate or reduction of the RRP (items over <del>\$999</del> <del>€999</del> MAD 308), or the value of an avoided cost.  The project team must comply with the following regarding the calculation of incentive values: a. The rebates or reductions offered must not exceed 70% of the RRP of the item for items over <del>\$400</del> <del>€442</del> MAD 308. For example if an eligible fridge costs <del>\$4,000</del> <del>€440</del> MAD 580, the maximum rebate or reduction allowed is <del>\$400</del> <del>€440</del> MAD 406. Items under <del>\$200</del> <del>€442</del> MAD 308 may be offered for free. b. Incentives cannot be averaged to achieve the required benchmarks. For example providing <del>€1,000</del> <del>€1,000</del> MAD 1160 in rebates to 50% of dwellings is not considered equivalent to providing <del>€1,000</del> <del>€1,000</del> MAD 580 to every dwelling.	21.0 As per the Green Star Communities v1.1. submission guidelines	21.0 As per the Green Star Communities v1.1. submission guidelines	21.0 As per the Green Star Communities v1.1. submission guidelines	21.0 As per the Green Star Communities v1.1. submission guidelines			21.0 This credit required minor adjustment to reflect Moroccan appropriate investment amounts, and to refer to specific location examples more appropriate to the Moroccan context.  In order to calculate South Africa relevant investment amounts, the same approach used in Credit 8 Environmental Management and 16: Community Investment was used. The investment amounts were expressed in terms of PPP.  Use the Purchasing Power Parity conversion factor to calculate what the equivalent amount of R5322 ZAR into MAD (https://data.worldbank.org/indicator/PA.NUS.PP) The World Bank list the South African implied Exchange Rate for ZAR 2018 as 1:1 whilst the Moroccan implied Exchange Rate is listed as 3:1. The new conversion factor was then calculated as follows: 1:548.1= 0.58 0.58*5322 = MAD 308	Project approach approved	
		21.1 Residential Incentives Up to 3 points are awarded based on the provision of incentives provided to encourage sustainable practices that reduce the ongoing cost of living and working, where the dollar value of incentives provided is <del>≥ €442</del> <del>€442</del> MAD 308 per residential dwelling	21.1 Residential Incentives Two (2) points are awarded where the <del>dollar</del> <del>rand</del> MAD value of incentives provided is <del>≥ €442</del> <del>€442</del> MAD 1160 per residential dwelling  For incentives of a lesser value partial points are awarded on a linear scale. For example, where a project applicant provides incentives with a combined value of <del>€442</del> <del>€400</del> MAD 406 to each residential dwelling the points awarded would be calculated as follows: <del>€442</del> <del>€400</del> MAD 406 / MAD 1160 x 2 points available = 0.4 points	21.1 As per the Green Star Communities v1.1. submission guideline	21.1 As per the Green Star Communities v1.1. submission guideline	21.1 As per the Green Star Communities v1.1. submission guideline	21.1 As per the Green Star Communities v1.1. submission guideline	2		21.1 This credit required only minor adjustment to reflect changes applied to 21.0.	Project approach approved
CCM-22	Digital Infrastructure	To encourage and recognize projects that use digital infrastructure to create greater efficiencies in the operation of individuals with other people, goods, services, and information.	22.1 High-speed Broadband 1 point is available where habitable buildings are provided with any of the following:  A. Fibre to the Premises (FTTP), or  B. Fixed wireless connectivity with minimum speeds of <del>≥ 10</del> <del>10</del> 50Mbps/5-20Mbps.	22.1.A As per the Green Star Communities v1.1. submission guidelines	22.1.A As per the Green Star Communities v1.1. submission guidelines	22.1.A As per the Green Star Communities v1.1. submission guidelines	22.1.A As per the Green Star Communities v1.1. submission guidelines	1		22.1.A No changes have been made, this credit has been accepted as is.	Project approach approved
		22.1.B Fixed wireless systems must use technology, commonly referred to as LTE (Long Term Evolution) or 4G, to deliver high-speed broadband services to a fixed number of connections at a fixed cell boundary (coverage area), with minimum speeds of <del>≥ 10</del> <del>10</del> 50Mbps/5-20Mbps.	22.1.B As per the Green Star Communities v1.1. submission guidelines	22.1.B As per the Green Star Communities v1.1. submission guidelines	22.1.B As per the Green Star Communities v1.1. submission guidelines	22.1.B As per the Green Star Communities v1.1. submission guidelines			22.1.B Investigations on the suggested connection speeds (10-50Mbps) revealed that these bands are applicable to the local context in Morocco. This was after review of the 3 local providers of digital infrastructure, namely Orange, Inwi and Maroc Telecom. Along with South Africa, Morocco has some of the best 4G coverage in Africa, with 60% of the country area covered by LTE capable technology. Additionally, the lower line speeds allow for wider applicability as Morocco will not get 5G until 2022.  The appropriate line speed identified for consideration within the Moroccan context is therefore 10-50Mbps/5-20Mbps.  Additionally, building classifications will fall in line with NCC, until local standards become available as following extensive engagement with local stakeholders and the BRCA, the Australian Standards were chosen to help model future Moroccan standards as Moroccan Stakeholders believe that this is the standard that they would like to see in place going forward as it is more similar to the Australian teching environment, thus South Africa.  Credit to remain as is, except for minor changes.	Project approach approved	
		22.2 Wireless Local Area Network 1 point is available where a Free Wireless Local Area Network is provided at every activity centre in the project	22.2.1 The Free Wireless Local Area Network must meet following:  a. At a minimum, meet the standard of 802.11n b. Wi-Fi must be accessible throughout 70% of activity centres in 8 out of 10 c. Where Wi-Fi is provided indoors, a minimum of 2 general power outlets must be accessible from public seating every 250 sqm	22.2 As per the Green Star Communities v1.1. submission guidelines	22.2 As per the Green Star Communities v1.1. submission guidelines	22.2 As per the Green Star Communities v1.1. submission guidelines	22.2 As per the Green Star Communities v1.1. submission guidelines	1		22.2 As per the Green Star Communities v1.1. submission guidelines. No changes have been made, this credit has been accepted as is.	Project approach approved
		23A Reduced Peak Electricity Demand - Performance Pathway 2 points are available where it is demonstrated that the project's predicted peak electricity demand has been reduced by 20% when compared to that of a reference project.	23A As per the Green Star Communities v1.1. submission guidelines	23A As per the Green Star Communities v1.1. submission guidelines	23A As per the Communities v1.1 submission guidelines with the exception of the following recommended change: Additional references: - Law No 48-05 dated 24 May 2005, on the regulation of the electricity sector and the establishment of the ANRE the Moroccan Energy Authority (Autorité Nationale de Régulation de l'Énergie) - Law No 54-24 promulgated in August 2003, which allows national electricity self-producers to join the transmission network to carry energy from production sites to consumption sites. - Law No 57-09 promulgated in February 2010 created the Morocco Agency for Solar Energy, which is now known as the Morocco Agency for Sustainable Energy (MASEN).	23A As per the Communities v1.1 submission guidelines with the exception of the following recommended change:  Additional references: - Law No 48-05 dated 24 May 2005, on the regulation of the electricity sector and the establishment of the ANRE the Moroccan Energy Authority (Autorité Nationale de Régulation de l'Énergie) - Law No 54-24 promulgated in August 2003, which allows national electricity self-producers to join the transmission network to carry energy from production sites to consumption sites. - Law No 57-09 promulgated in February 2010 created the Morocco Agency for Solar Energy, which is now known as the Morocco Agency for Sustainable Energy (MASEN).	2		23A More relevant references for Morocco have been included.	Project approach approved	
CCM-23	Peak Electricity Demand Reduction	23B On-site Generation - Prescriptive Pathway 2 points are available where at least 30% of the annual electrical needs of the project are met through on-site power generation systems	23B As per the Green Star Communities v1.1. submission guidelines	23B As per the Green Star Communities v1.1. submission guidelines	23B On-Site Generation (23B), second bullet point: Solar hot water systems and solar air-conditioning and heat pumps  Additional references: - Law No 48-05 dated 24 May 2005, on the regulation of the electricity sector and the establishment of the ANRE the Moroccan Energy Authority (Autorité Nationale de Régulation de l'Énergie) - Law No 54-24 promulgated in August 2003, which allows national electricity self-producers to join the transmission network to carry energy from production sites to consumption sites. - Law No 57-09 promulgated in February 2010 created the Morocco Agency for Solar Energy, which is now known as the Morocco Agency for Sustainable Energy (MASEN).	23B As per the Communities v1.1 submission guidelines with the exception of the following recommended change:  Additional references: - Law No 48-05 dated 24 May 2005, on the regulation of the electricity sector and the establishment of the ANRE the Moroccan Energy Authority (Autorité Nationale de Régulation de l'Énergie) - Law No 54-24 promulgated in August 2003, which allows national electricity self-producers to join the transmission network to carry energy from production sites to consumption sites. - Law No 57-09 promulgated in February 2010 created the Morocco Agency for Solar Energy, which is now known as the Morocco Agency for Sustainable Energy (MASEN).			23B More relevant references for Morocco have been included.	Project approach approved	
		23C Energy Storage - Prescriptive Pathway 2 points are available where at least 25% of the peak electricity demand is shifted to non-peak times through the use of energy storage systems	23C As per the Green Star Communities v1.1. submission guidelines	23C As per the Green Star Communities v1.1. submission guidelines	23C As per the Communities v1.1 submission guidelines with the exception of the following recommended change:  Additional references: - Law No 48-05 dated 24 May 2005, on the regulation of the electricity sector and the establishment of the ANRE the Moroccan Energy Authority (Autorité Nationale de Régulation de l'Énergie) - Law No 54-24 promulgated in August 2003, which allows national electricity self-producers to join the transmission network to carry energy from production sites to consumption sites. - Law No 57-09 promulgated in February 2010 created the Morocco Agency for Solar Energy, which is now known as the Morocco Agency for Sustainable Energy (MASEN).	23C As per the Communities v1.1 submission guidelines  Additional documentation to be references in 'Standards and Guidelines' section on Page 246: City of Johannesburg-Gauteng-Guide 2016: Design guidelines for energy efficient buildings on urbanisation City of Johannesburg-Department of Environment & Infrastructure Services- (2014)-Energy Demand Side Management Policy Plan-2014 National Business Initiative- (2009)-Guide to Energy Efficiency Finance in South Africa National Business Initiative- (2014)-Recommendations on Energy Efficiency in Buildings City of Johannesburg- (2014)-Recommendations on Energy Efficiency in Buildings			23C More relevant references for Morocco have been included.	Project approach approved	

## Environment

ENV-24	Integrated Water Cycle
ENV-25	Greenhouse Gas Emissions
ENV-26	Materials
ENV-27	Sustainable Transport and Movement
ENV-28	Sustainable Sites
ENV-29	Ecological Value
ENV-30	Waste Management
ENV-31	Urban Heat Island
ENV-32	Light Pollution



				<p><b>25B.6 - Energy Metering and Monitoring - Public spaces and buildings</b></p> <p>1 point is available where the GHG strategy for the project site includes provision for metering for major energy consumption uses of the project and building, and there is a effective mechanism for monitoring and displaying the consumption data.</p>	<p><b>25B.6</b> An advanced monitoring system is regarded as an automated monitoring system that records both consumption and demand of energy via live, online meters. These systems are capable of processing the information to produce reports for definable periods (hourly, daily, monthly, etc.) for individual as well as groups of meters. Advanced monitoring systems meters are characterised as being capable of recording values and providing an output that can be transmitted to a central location (on-site or off-site) that can provide data retrieval and reporting mechanisms.</p> <p>The system must be capable of:</p> <ul style="list-style-type: none"> <li>Collecting data from all meters</li> <li>Alerting to missing data due to failure</li> <li>Processing data on energy use at user adjustable intervals</li> <li>Automatically notifying the Facilities Management when the energy use increases beyond certain parameters</li> <li>Providing a breakdown of the information to building system or to building</li> <li>Visual Display available to the public (e.g. website) providing current energy consumption and savings</li> </ul>	<p><b>25B.6</b> As per the Green Star Communities v1.1. submission guidelines</p>	<p><b>25B.6</b> Additional Information</p> <p><b>25B.6.1</b> <del>Additional Information</del> <b>25B.6.2</b> <del>Additional Information</del> <b>25B.6.3</b> <del>Additional Information</del> <b>25B.6.4</b> <del>Additional Information</del> <b>25B.6.5</b> <del>Additional Information</del> <b>25B.6.6</b> <del>Additional Information</del> <b>25B.6.7</b> <del>Additional Information</del> <b>25B.6.8</b> <del>Additional Information</del> <b>25B.6.9</b> <del>Additional Information</del> <b>25B.6.10</b> <del>Additional Information</del> <b>25B.6.11</b> <del>Additional Information</del> <b>25B.6.12</b> <del>Additional Information</del> <b>25B.6.13</b> <del>Additional Information</del> <b>25B.6.14</b> <del>Additional Information</del> <b>25B.6.15</b> <del>Additional Information</del> <b>25B.6.16</b> <del>Additional Information</del> <b>25B.6.17</b> <del>Additional Information</del> <b>25B.6.18</b> <del>Additional Information</del> <b>25B.6.19</b> <del>Additional Information</del> <b>25B.6.20</b> <del>Additional Information</del> <b>25B.6.21</b> <del>Additional Information</del> <b>25B.6.22</b> <del>Additional Information</del> <b>25B.6.23</b> <del>Additional Information</del> <b>25B.6.24</b> <del>Additional Information</del> <b>25B.6.25</b> <del>Additional Information</del> <b>25B.6.26</b> <del>Additional Information</del> <b>25B.6.27</b> <del>Additional Information</del> <b>25B.6.28</b> <del>Additional Information</del> <b>25B.6.29</b> <del>Additional Information</del> <b>25B.6.30</b> <del>Additional Information</del> <b>25B.6.31</b> <del>Additional Information</del> <b>25B.6.32</b> <del>Additional Information</del> <b>25B.6.33</b> <del>Additional Information</del> <b>25B.6.34</b> <del>Additional Information</del> <b>25B.6.35</b> <del>Additional Information</del> <b>25B.6.36</b> <del>Additional Information</del> <b>25B.6.37</b> <del>Additional Information</del> <b>25B.6.38</b> <del>Additional Information</del> <b>25B.6.39</b> <del>Additional Information</del> <b>25B.6.40</b> <del>Additional Information</del> <b>25B.6.41</b> <del>Additional Information</del> <b>25B.6.42</b> <del>Additional Information</del> <b>25B.6.43</b> <del>Additional Information</del> <b>25B.6.44</b> <del>Additional Information</del> <b>25B.6.45</b> <del>Additional Information</del> <b>25B.6.46</b> <del>Additional Information</del> <b>25B.6.47</b> <del>Additional Information</del> <b>25B.6.48</b> <del>Additional Information</del> <b>25B.6.49</b> <del>Additional Information</del> <b>25B.6.50</b> <del>Additional Information</del> <b>25B.6.51</b> <del>Additional Information</del> <b>25B.6.52</b> <del>Additional Information</del> <b>25B.6.53</b> <del>Additional Information</del> <b>25B.6.54</b> <del>Additional Information</del> <b>25B.6.55</b> <del>Additional Information</del> <b>25B.6.56</b> <del>Additional Information</del> <b>25B.6.57</b> <del>Additional Information</del> <b>25B.6.58</b> <del>Additional Information</del> <b>25B.6.59</b> <del>Additional Information</del> <b>25B.6.60</b> <del>Additional Information</del> <b>25B.6.61</b> <del>Additional Information</del> <b>25B.6.62</b> <del>Additional Information</del> <b>25B.6.63</b> <del>Additional Information</del> <b>25B.6.64</b> <del>Additional Information</del> <b>25B.6.65</b> <del>Additional Information</del> <b>25B.6.66</b> <del>Additional Information</del> <b>25B.6.67</b> <del>Additional Information</del> <b>25B.6.68</b> <del>Additional Information</del> <b>25B.6.69</b> <del>Additional Information</del> <b>25B.6.70</b> <del>Additional Information</del> <b>25B.6.71</b> <del>Additional Information</del> <b>25B.6.72</b> <del>Additional Information</del> <b>25B.6.73</b> <del>Additional Information</del> <b>25B.6.74</b> <del>Additional Information</del> <b>25B.6.75</b> <del>Additional Information</del> <b>25B.6.76</b> <del>Additional Information</del> <b>25B.6.77</b> <del>Additional Information</del> <b>25B.6.78</b> <del>Additional Information</del> <b>25B.6.79</b> <del>Additional Information</del> <b>25B.6.80</b> <del>Additional Information</del> <b>25B.6.81</b> <del>Additional Information</del> <b>25B.6.82</b> <del>Additional Information</del> <b>25B.6.83</b> <del>Additional Information</del> <b>25B.6.84</b> <del>Additional Information</del> <b>25B.6.85</b> <del>Additional Information</del> <b>25B.6.86</b> <del>Additional Information</del> <b>25B.6.87</b> <del>Additional Information</del> <b>25B.6.88</b> <del>Additional Information</del> <b>25B.6.89</b> <del>Additional Information</del> <b>25B.6.90</b> <del>Additional Information</del> <b>25B.6.91</b> <del>Additional Information</del> <b>25B.6.92</b> <del>Additional Information</del> <b>25B.6.93</b> <del>Additional Information</del> <b>25B.6.94</b> <del>Additional Information</del> <b>25B.6.95</b> <del>Additional Information</del> <b>25B.6.96</b> <del>Additional Information</del> <b>25B.6.97</b> <del>Additional Information</del> <b>25B.6.98</b> <del>Additional Information</del> <b>25B.6.99</b> <del>Additional Information</del> <b>25B.6.100</b> <del>Additional Information</del></p>	<p><b>25B.6</b></p>	1			<p><b>25B.6</b> No changes have been made, this credit has been accepted as is.</p>	Project approach approved			
				<p><b>INNOVATION CHALLENGE:</b></p> <p>Project teams are invited to sign up for an innovation challenge to develop an approach to carbon accounting. The approach should have regard to the National Carbon Accounting System (NCAS) which monitors and predicts Greenhouse Gas (GHG) emissions and uptake from land-based activities covering all of Australia.</p>	As per the Green Star Communities v1.1. submission guidelines	As per the Green Star Communities v1.1. submission guidelines	As per the Green Star Communities v1.1. submission guidelines	As per the Green Star Communities v1.1. submission guidelines				<p>No changes have been made, this credit has been accepted as is.</p>	Project approach approved			
25C.25	Materials	To reward the reduction of the environmental impacts of construction materials for the site wide works over their life cycle	<p><b>25C.25 B.5.0 - BOTH PATHWAYS - Minimum Requirement</b></p> <p><b>25C.25 B.5.0.1 - Responsible Sourcing</b></p> <p>Up to 1 point is awarded where:</p> <ul style="list-style-type: none"> <li>At least 80% (by mass) of all reinforcing steel, asphalt, and concrete used in site-wide works must be sourced from facilities that have ISO 14001 accreditation and the company manufacturing the reinforcing steel must be a member of, and comply with the requirements of, the World Steel Association's Climate Action Programme; and</li> <li>At least 95% (by cost) of all timber used in the construction works must be certified by a forest certification scheme that meets the 'GBCA's 'Essential' criteria for forest certification; or be from a recycled source.</li> </ul>	<p><b>25C.25 B.5.0.2</b> The minimum requirement is now changed to One (1) point to allow projects to be rewarded for their efforts. Project must still achieve this credit before they can target points under 25A.1 or 25B.1.</p> <p>All other Compliance Requirements as per the Green Star Communities v1.1. submission guidelines</p>	<p><b>25C.25 B.5.0</b> As per the Green Star Communities v1.1. submission guidelines</p>	<p><b>25C.25 B.5.0</b> As per the Green Star Communities v1.1. submission guidelines</p>	<p><b>25C.25 B.5.0</b> As per the Green Star Communities v1.1. submission guidelines</p>	<p><b>25C.25 B.5.0</b> As per the Green Star Communities v1.1. submission guidelines</p>	1			<p><b>25C.25 B.5.0</b> The same methodology that was used in 24C.25 will be used for 25C.25.</p> <p>Due to the lack of information and documented literature, the agreed approach is that this credit will use international best practice standards as outlined in the Communities v1.1 Submission Guidelines as well as the Sustainable Precincts tool. Project teams who choose to target this credit can submit CRs (Credit Interpretation Request) on a case by case basis where the project team chooses to follow an alternative methodology.</p> <p>Project teams will make use of the MAT - 6 Steel credit requirements as outlined in the Green Star SA Technical Manual Mat 06 Credit Guidelines. Therefore this credit will remain as is and Australian PVC Best Practice Guidelines will be referenced as these are international best practice. It is noted that when Morocco PVC guidelines become available these will be referenced and will replace the international guidelines.</p> <p>Reference to Life Cycle and Carbon print analysis of construction materials Technical Guide, namely Guide technique : analyse de cycle de vie et empreinte carbone des matériaux de construction, published by the Moroccan Energy Charter (MEC), to assist in rendering the credit more applicable to the Moroccan Market.</p>	Project approach approved			
			<p><b>26A.1 - Performance Pathway - Life Cycle Assessment (LCA)</b></p> <p><b>26A.1.1 Performance Pathway - Life Cycle Assessment (LCA)</b></p> <p>Up to 1 point is awarded where the requirements of 26A.1 are met and a whole of site, whole of life (cradle-to-grave) life cycle assessment (LCA) is conducted, in accordance with the following:</p> <ul style="list-style-type: none"> <li>a. Up to 1 point is available, based on the extent of environmental impact reduction achieved, assessed against six environmental impact categories, when the project site is compared to a reference project; and</li> <li>b. An additional 1 point is available where the LCA includes reporting on five additional environmental impact categories for the project.</li> </ul> <p>Points are awarded based on the extent of environmental impact reduction achieved against seven environmental impacts categories, when compared to a reference project site.</p>	<p><b>26A.1.1 LCA</b> Points are awarded based on a comparative percentage impact reduction calculation. This is defined as the sum of all impact category changes between the proposed project and the reference project. One point may be claimed for the first 35% cumulative reduction and an additional point for every additional 20% cumulative reduction to a maximum of 1 point (a total of 2 points available).</p> <p>All other Compliance Requirements as per the Green Star Communities v1.1. submission guidelines</p>	<p><b>26A.1</b> As per the Green Star Communities v1.1. submission guidelines</p>	<p><b>26A.1</b> As per the Green Star Communities v1.1. submission guidelines</p>	<p><b>26A.1</b> As per the Green Star Communities v1.1. submission guidelines</p>	4			<p><b>26A.1</b> No changes will be made to the credit.</p>	Project approach approved				
			<p><b>26B.1 - Prescriptive Pathway - Life Cycle Impacts</b></p> <p><b>26B.1.1 Prescriptive Pathway - Sustainable Primary Construction Materials</b></p> <p>Up to 1 point is awarded where the requirements of 26B.1 are met and the project addresses the sustainability of the following primary construction materials:</p> <ul style="list-style-type: none"> <li>Concrete</li> <li>Asphalt</li> <li>Steel</li> <li>Asphalt, and</li> <li>PVC</li> </ul> <p>Points are awarded on a sliding scale based on the percentage (by cost) of primary construction materials that are used in the project which meet the Compliance Requirements.</p>	<p><b>26B.1.1 Compliance Requirements</b></p> <p><b>TABLE 26B.1.1 Primary Construction Material - Compliance Requirement</b></p> <p><b>Concrete</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>Steel</b> - 60% of all structural steel, by mass, in the project either has a post-consumer recycled content greater than 40%, or is recycled AND/OR 60% of all reinforcing/structural steel, by mass, in the project either has a post-consumer recycled content greater than 50%, or is recycled.</p> <p><b>Asphalt</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>PVC</b> - or alternative - meet PVC best practice guidelines (GBCA's Best Practice Guidelines are referenced as a minimum standard for PVC products)</p> <p><b>Asphalt, and</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2 Concrete</b></p> <p>Note: reference mixes are given in the Submission Guidelines in Table 26B.1.2</p> <p>All other Compliance Requirements as per the Green Star Communities v1.1. submission guidelines.</p>	<p><b>26B.1</b> All definitions as per the Green Star Communities v1.1. submission guidelines</p>	<p><b>26B.1.1 Point Calculation Example (Table 26B.1.1)</b></p> <p>Points are awarded by calculating the cost of a compliant primary construction materials and comparing this to the total cost of all primary construction materials used in the project.</p> <p>A maximum of 1 point is awarded when the cost of compliant material is 50% of the total cost of primary construction materials. Points are awarded on a sliding scale, as for this example 50% of all primary construction materials (by cost) comply, therefore 50% of the 1 point is awarded (0.5 points available).</p> <p>Guidance on how to include steel into the Point Calculation Example Table (Table 26B.1.1)</p> <p>1) List all the compliant steel items (Structural steel, reinforcing/breasting steel and steel products)</p> <p>2) List if the steel is structural steel or reinforcing steel</p> <p>3) Confirm sufficient recycled content or reuse as per Mat 06 Credit Criteria (GBCA Office v1.1)</p> <p>4) Use the cost related to the item.</p> <p><b>Provision for demonstrating compliance (Table 26B.1.2)</b></p> <p>The test can be ignored. Please refer to the Green Star SA Technical Manual Mat 06 Credit Guidelines.</p>	<p><b>26B.1.2 Concrete</b></p> <p>Documentation Requirements as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.1 Steel</b></p> <p><b>Steel</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.2 Asphalt</b></p> <p><b>Asphalt</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.3 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.4 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.5 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.6 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.7 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.8 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.9 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.10 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.11 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.12 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.13 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.14 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.15 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.16 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.17 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.18 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.19 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.20 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.21 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.22 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.23 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.24 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.25 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.26 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.27 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.28 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.29 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.30 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.31 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.32 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.33 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.34 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.35 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.36 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.37 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.38 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.39 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.40 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.41 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.42 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.43 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.44 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.45 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.46 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.47 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.48 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.49 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.50 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.51 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.52 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.53 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.54 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.55 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.56 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.57 PVC</b></p> <p><b>PVC</b> - as per the Green Star Communities v1.1. submission guidelines</p> <p><b>26B.1.2.58 PVC</b></p> <p><b>PVC</b> - 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26C.26	Sustainable Transport and Movement	To encourage and recognise integrated responses to transport and movement that encourage a people focused hierarchy	<p><b>27A - People Focused Sustainable Transport and Movement</b></p> <p>27A.1 - People Focused Assessment</p> <p>27A.2 - Strategic Discussions</p> <p>27A.3 - Qualified Professional</p> <p>27A.4 - List of Recommendations</p> <p>27A.5 - Evidence of positive outcomes</p> <p>27A.6 - Travel Plan</p>	<p><b>27A</b> As per the Green Star Communities v1.1. submission guidelines</p>	<p><b>27A</b> As per the Green Star Communities v1.1. submission guidelines</p>	<p><b>27A</b> As per the Green Star Communities v1.1. submission guidelines</p>	<p><b>27A</b> As per the Green Star Communities v1.1. submission guidelines</p>	<p><b>27A</b> As per the Green Star Communities v1.1. submission guidelines</p>	3			<p><b>27A</b> No changes have been made, this credit has been accepted as is.</p>	Project approach approved			
			<p><b>27B - Prescriptive Pathway - Sustainable Transport and Movement</b></p> <p>One (1) point is awarded where a shared, parked or common use parking regime is implemented for a minimum of 25% of the total on-site parking supply (including detached housing), demonstrated in accordance with 27B.1.</p>	<p><b>27B.1 Shared, Parked, or Common Use Parking</b></p> <p>One (1) point is awarded where a shared, parked or common use parking regime is implemented for a minimum of 25% of the total on-site parking supply (including detached housing), demonstrated in accordance with 27B.1.</p>	<p><b>27B.1</b> As per the Green Star Communities v1.1. submission guidelines</p>	<p><b>27B.1</b> As per the Green Star Communities v1.1. submission guidelines</p>	<p><b>27B.1</b> As per the Green Star Communities v1.1. submission guidelines</p>	<p><b>27B.1</b> As per the Green Star Communities v1.1. submission guidelines</p>	1			<p><b>27B.1</b> No changes have been made, this credit has been accepted as is.</p>	Project approach approved			
			<p><b>27C.2 Public Transport Access - Availability &amp; Frequency of Public Transport</b></p> <p>Up to 1 point is awarded based on the frequency and accessibility of existing or planned public transport, in relation to the proportion of habitable buildings within the calculated catchment of an eligible public transport stop, demonstrated in accordance with 27C.2</p>	<p><b>27C.2</b> As per the Green Star Communities v1.1. submission guidelines</p>	<p><b>27C.2</b> As per the Green Star Communities v1.1. submission guidelines</p>	<p><b>27C.2</b> As per the Green Star Communities v1.1. submission guidelines</p>	<p><b>27C.2</b> As per the Green Star Communities v1.1. submission guidelines</p>	<p><b>27C.2</b> As per the Green Star Communities v1.1. submission guidelines</p>	1			<p><b>27C.2</b> No changes have been made, this credit has been accepted as is.</p>	Project approach approved			
28C.28	Sustainable Sites	To encourage projects that avoid or minimise impacts on environmentally sensitive sites, while recognising projects that reuse previously developed land and reclaim contaminated land using best practice remediation.	<p><b>INNOVATION CHALLENGE:</b></p> <p><b>Future Thinking Technology:</b> The GBCA would welcome proposals from project teams that integrate future thinking technologies into their planning solutions, such as self-driving vehicles and associated infrastructure. This approach would require consideration of site specific conditions and the solution would have to be aimed at improving the availability and choice of all transport modes and how they interconnect within the various land uses in the development.</p> <p><b>28C.28 Conditional Requirement</b></p> <p>It is a Conditional Requirement for obtaining a Green Star - Communities certification rating that a project, that needs approval from the GBCA, must obtain an environmental acceptability decision (decision acceptability environmental) prior to the project commencing. This is a Conditional Requirement for obtaining a Green Star - Communities certification rating that a project, that needs approval from the GBCA, must obtain an environmental acceptability decision (decision acceptability environmental) prior to the project commencing. 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## APPENDIX A: ENV-25 Greenhouse Gas Emissions

### Greenhouse Gas Emissions Factor

The International Energy Agency's website was used to source inputs for the calculation of the Fuel CO<sub>2</sub> factor for mains electricity in Morocco (source: <https://www.iea.org/countries/morocco>). Calculations were done using data from 2017, the latest data available on the site.

**TABLE 1 - Greenhouse Gas Emissions Factors for ENV-25 Emissions Calculations**

<b>FUEL CO<sub>2</sub> FACTORS kgCO<sub>2</sub>/kWh</b>	
biogas	0.025
coal	0.354
diesel	0.267
LPG	0.227
<b>mains electricity</b>	<b>1.758</b>
natural gas	0.202
oil	0.264
town gas (from coal)	0.16

*(continues next page)*

**Table 2 – Adjusted inputs, Green Star South Africa Energy Modelling Protocol Office v1.1**

Building Aspect	Reference Building	Actual Building	Comments
6.1 Building Fabric - Opaque Elements	In compliance with 'Thermal Construction Regulations Morocco', 'Approach Prescriptive', Table 4 for Residential Buildings, Table 6 for Tertiary Buildings.	As per design	The Moroccan standard is deemed to be both stricter, and more applicable to local conditions, than SANS 10400 XA, which it replaces.
Exception to above - Orientation	Reference building to be modelled in 4 orientations, as per the Energy Modelling Protocol.	As per design	Allows projects to benefit from appropriate building orientation.
6.2 Building Fabric - Glazing	In compliance with 'Thermal Construction Regulations Morocco', 'Approach Prescriptive', Table 4 for Residential Buildings, Table 6 for Tertiary Buildings. No skylight glazing is to be included for the Reference Building.	As per design	The Moroccan standard is deemed to be both stricter, and more applicable to local conditions, than SANS 10400 XA, which it replaces.
6.3 Internal Loads			
Summer design temperature	26°C, 60% relative humidity (As per 'Thermal Construction Regulations Morocco', Table 12, page 39)	As per design	The wider comfort range defined in the Moroccan standard is more energy efficient than the comfort range defined in the Energy Modelling Protocol, and deemed to be more representative of local conditions.
Winter design temperature	20°C, 55% relative humidity (As per 'Thermal Construction Regulations Morocco', Table 12, page 39)	As per design	
Occupancy	As per design	As per design	-
Internal Lighting	As per Appendix A in Local Context Report. Where a value is not specified, Table 4 in the Energy Modelling Protocol can be used.	As per design	The values in Appendix A is based largely on ASHRAE standards, and more strict than those in the Energy Modelling Protocol, which are based largely on SANS.
Tenant Equipment	As per design	As per design	-
Fresh air rates	As per minimum local code requirement for space type.	As per design	No information could be found on local codes for fresh air supply. If they can be sourced, they should be used.
6.4 Actual Building HVAC Systems			
All modelling parameters as per Energy Modelling Protocol	N/A	As per design	-
6.5 Reference Building HVAC System 1			
All modelling parameters, <b>except</b>	As per Energy Modelling Protocol	N/A	The HVAC system is already best on best practice guidelines, which exceed requirements by SANS 10400 XA.
Heating	COP 3 (as per the lowest performing unit in 'Thermal Construction Regulations Morocco', Table 11, page 38)	N/A	As per local Moroccan standards, which is more strict than current requirements in Energy Modelling Protocol.
6.6 Reference Building HVAC System 2			
All modelling parameters, <b>except</b>	As per Energy Modelling Protocol		The HVAC system is already best on best practice guidelines, which exceed requirements by SANS 10400 XA.
Unitary Heatpump	Cooling EER of 2.6, Heating COP of 3 (as per the lowest performing unit in 'Thermal Construction Regulations Morocco', Table 11, page 38)	N/A	As per local Moroccan standards, which is more strict than current requirements in Energy Modelling Protocol.
6.9 Domestic Hot Water			
Hot water energy	Heating supplied by LPG gas, entered in the appropriate space in the Energy Calculator	As per design	The Ministry of Energy, Morocco, indicated that most dwellings use LPG gas for cooking and domestic hot water generation.

**Table 3 – Artificial Lighting**

The effective installed lighting power density for at least 95% of the tenancy area is less than the value prescribed in the table below.

Occupancy	Minimum Lighting Power Density (W/m <sup>2</sup> )
Entertainment and Public Assembly	7
Theatrical and indoor sport	7
Places of instruction	7
Worship	7
High risk commercial service	16.8
Moderate risk commercial service	14
Low risk commercial service	10.5
Exhibition hall	10.5
Museum	3.5
High risk industrial	14
Moderate risk industrial	14
Low risk industrial	14
Plant room	3.5
Hospital	7
Other institutional (Residential)	7
Health care	7
Large shop	10.5
Small shop	10.5
Wholesalers' store	10.5
Offices	7.7
Hotel	7
Dormitory	3.5
Domestic residence	3.5
Dwelling house	3.5
Hospitality	7
Parking Areas	2
Toilets and Ablutions	6



**Table 4 – Heating, Ventilation and Air-conditioning performance requirements**

(as per 'Thermal Construction Regulations Morocco' provides minimum heating and cooling performance (Table 11, page 38, shown below).

The table below shows a minimum efficiency for HVAC equipment, as per Moroccan regulations.

Table 11. Minimum energy performance			
Category	How it works	Split and multi-split air conditioners	Single-block air conditioners
Air conditioners condensation by air	Cooling	EER 2.8	EER - 2.6
	Heating	COP 3.2	COP 3.0
Air conditioners condensation by water	Cooling	EER - 3.1	EER - 3.8
	Heating	COP 3.2	COP 3.0

\* COP includes indoor fan unit.

\*\* COP is for outdoor unit/chiller only.

**25B.2: Energy Efficiency – Existing Buildings**

The reference to the Australian building code can be replaced by the following requirements:

Artificial Lighting: *Existing Building Upgrades*: 20% improvement over the minimum Lighting Power Density listed in Table 3 Appendix A of this document.

HVAC: *Existing Building Upgrades*: 20% improvement over Table 4 Appendix A of this document.

Hot Water: *Existing Building Upgrades*: 100% of domestic hot water heating is provided by non-electric resistance means.

**25B.5 Energy Efficiency – New Buildings**

One point available where the GHG strategy for the project site incorporates minimum energy requirements

for new buildings to best practice requirements. (Compliance requirements are drawn up in line with the

following requirements for Lighting, Ventilation and AC, and Domestic Hot Water).

Artificial Lighting: *New Buildings*: 40% improvement over the minimum Lighting Power Density listed in the

above table

HVAC: *New Buildings*: 30% improvement over SANS204:2011

Hot Water: *New Buildings*: 100% of domestic hot water heating is provided by non-electric resistance means.

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