

Football and Sustainability in the Desert, Qatar 2022 Green World Cup's Stadiums: Legal Perspective

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Abstract

As the year 2022 approaching, Qatar preparations for the FIFA World Cup is in progress. These preparations encompass very complicated processes in many and almost every aspect of life in the state of Qatar. Qatar promised the world with unprecedented, unforgettable, and magical tournament in the history. In this complicated process, environment is not irrelevant, rather, it is presented and taken into consideration, it is the promise of the State of Qatar to organize environment friendly World Cup.

Environmental and sustainability requirements are considered and monitored by Qatar's legal and administrative frameworks, these requirements are to be observed during preparation and implementation processes and finally in the realization and organization of the tournament. From a legal and environmental perspective, this paper will explore the presence of the environment and sustainability in the Qatar 2022 bid, preparations, management, and delivery of the Stadiums constructed for the FIFA World Cup Qatar 2022¹.

Keywords: Qatar 2022, Sustainability, World Cup Stadiums, Construction Contracts, Legal perspective, Environmental Law, QRNF, NPRP Project.

¹ This research is conducted as part of a National Priority Research Programme "NPRP" research project funded by the Qatar National Research Fund "QNRN". The project title is "The Legal framework for Construction Contracts: Challenges and Aspirations in light of the Qatar FIFA World Cup 2022". Project No: (NPRP 8-999-5-136). Thanks, and gratitude's are due to QNRN and Qatar University for the generous support.

1. Introduction

The State of Qatar will organize the FIFA World Cup in 2022. This universally mega sport event requires huge preparations. And as for Qatar, a huge and comprehensive process is underway to deliver a distinguish and unprecedented tournament. Multibillions infrastructure and transportation projects were launched, and at least 8 world cup stadiums are in different stages of construction, these projects are to be sustainable and environmental friendly facilities.

Qatar's bid to host the 2022 FIFA world cup was outstanding in its' sustainability approach, and it appears that Qatar is fully determined to accomplish the mission in the due time and with a high level of commitment to sustainability. Qatar is interested in achieving a positive and good international standing, which is an important feature of soft power². This research will shed the light on Qatar's world cup constructions from environmental angle, to provide decision makers with any required or desirable legislative amendments in this regard.

Qatar's commitments toward sustainability

The state of Qatar is the first Arab nation to win the right to host the FIFA world cup in 2022, this win was the result of a great deal of efforts conducted by Qatar to fulfill the FIFA requirements to be eligible to compete with other eligible nations on the right to organize such a universally important tournament. These efforts include many aspects, social, economic, environmental, infrastructures, and sport. The state of Qatar invests heavily in a huge process of transformation to set a comprehensive developmental model in the Middle East and North Africa region backed by five major elements

First. Political will and futurist vision

Second. Good governance and wise management of the country's natural resources

Third. Public awareness and institutional efficiency.

Fourth. Financial wealth

Fifth. Political stability

The organization of the FIFA world cup is a sophisticated process which certainly presents many challenges to any host nation³. It is not all about stadiums and infrastructures; rather, it consists of interrelated and multi-sectoral issues. The sustainability challenges need to be addressed by the hosting state in line with other aspects of preparations.

Qatar is a desert country with very hard climatic circumstances especially in the summer, high temperatures, humidity, and dust storms are common features of Qatar's summer weather and generally these climatic conditions prevail all the over the Arabian Peninsula⁴. However, the FIFA addressed this concern when it decided that the 2022 World Cup tournament will take place in winter (November and December)⁵. In spite of Qatar's commitment to deliver, within FIFA's technical requirements, sporting facilities and conditions that will satisfy both the player and user, by developing cooling technologies classified as environmental friendly, thus promoting sustainability⁶. Qatar

² Robert Wittkuhn and Danyel Reiche, "Sustainable Transportation and Mega Sporting Events in Arab Countries – the Case of Qatar", 2015, Issam Fares Institute for Public Policy and International Affairs- American University of Beirut

³ Polytimi Sofotasiou, Benjamin Richard Hughes, John Kaiser Calautit, Qatar 2022: Facing the FIFA World Cup climatic and legacy challenges, Sustainable Cities and Society, Volume 14, February 2015, Pages 16-30, ISSN 2210-6707, <http://dx.doi.org/10.1016/j.scs.2014.07.007>. <http://www.sciencedirect.com/science/article/pii/S2210670714000857>

⁴ Abdelnaser, Hayajneh, "Legal Protection for the Environment in Jordan and the United Arab Emirates: Comparative Outline", British Journal of Humanities and Social Sciences, November 2012, Vol. 7, issue 2, available online at: [http://www.ajournal.co.uk/HSpdfs/HSvolume7\(2\)/HSVol.7%20\(2\)%20Article%206.pdf](http://www.ajournal.co.uk/HSpdfs/HSvolume7(2)/HSVol.7%20(2)%20Article%206.pdf)

⁵ FIFA Executive Committee confirms November/December event period for Qatar 2022, available online at: <http://www.fifa.com/worldcup/news/y=2015/m=3/news=fifa-executive-committee-confirms-november-december-event-period-for-q-2567789.html>

⁶ Polytimi Sofotasiou, Benjamin Richard Hughes, John Kaiser Calautit, Qatar 2022: Facing the FIFA World Cup climatic and legacy challenges, Sustainable Cities and Society, Volume 14, February 2015, Pages 16-30, ISSN 2210-6707, <http://dx.doi.org/10.1016/j.scs.2014.07.007>. <http://www.sciencedirect.com/science/article/pii/S2210670714000857>

Supreme Committee for Delivery & Legacy welcomed this change in tournament dates and mentioned that: “Regardless of the change in dates, Qatar will continue to develop the cooling technology promised during the bid, ensuring our commitment to deliver a true legacy as a result of the first World Cup in the Middle East”⁷.

The advantages of this change in the tournament dates to Qatar are obvious since it will reduce the cost and time required in the construction of the world cup stadiums. However, Qatar may continue its’ plans to build stadiums with cooling systems as per its’ world cup bid.

State’s Duty to protect the environment within the Qatari legal framework

Article 33 of the Permanent Constitution of the State of Qatar “The State shall preserve the environment and its natural balance to achieve comprehensive and sustainable development for all generations”⁸.

The reference made by the constitution to sustainable development brought Qatar to the states which maintain green constitutions⁹. Further, the importance of providing the constitution for environmental protection is beyond doubt; since all laws and bylaws, policies and decisions made by the state’s competent authorities must comply with constitutional provisions, and more importantly, the environmental provision in the constitution may pave the road for individuals’ actionable right to a healthy environment¹⁰.

The concept of sustainable development first mentioned in the Brundtland Commission’s report which introduced the concept sustainable development in the report titled: “Our Common Future” in 1987, the report defined sustainable development as a “development that meets the needs of the present without compromising the ability of future generations to meet their own needs”¹¹. And since then, sustainable development become a corner stone in all international and domestic legal documents.

Article 29 of the Permanent Constitution of the State of Qatar provides that: “Natural wealth and its resources are the property of the State; and the State shall preserve and exploit the same in the best manner in accordance with the provisions of the law”¹².

Within the context of the constitution and in terms of sport, the constitution of Qatar made no direct and express reference for sport, and it is hoped that a constitutional provision will be added to endorse sport within the umbrella of human rights or any relevant part. This introduction of sport provision at the constitution level will reflect the mere facts on the ground which reveal Qatar’s heavy investment in sport and organizing mega sport events¹³.

⁷ FIFA Executive Committee confirms November/December event period for Qatar 2022, available online at: <http://www.fifa.com/worldcup/news/y=2015/m=3/news=fifa-executive-committee-confirms-november-december-event-period-for-q-2567789.html>

⁸ the Permanent Constitution of the State of Qatar, <http://www.almeezan.qa/LawPage.aspx?id=2284&language=en>

⁹ “As of 2012, 177 of the world’s 193 UN member nations recognize this right through their constitution, environmental legislation, court decisions, or ratification of an international agreement”, see David R. Boyd, “The Constitutional Right to a Healthy Environment”. Available online at: <http://www.environmentmagazine.org/Archives/Back%20Issues/2012/July-August%202012/constitutional-rights-full.html>

¹⁰ Abdelnaser Hayajneh, “Environmental Law: General theory with explanation of environmental legislation”, 2014, second edition, Jordan. Dar Al Thaqafa Publisher, Amman – Jordan. See also, Abdelnaser Hayajneh, “The Status of Environmental Rights in the Constitutions of the Gulf Corporation Council Countries”, 2014, Journal of Legal Studies, UAE, available online

at: https://www.researchgate.net/publication/308918324_waq_alhqwq_albyyyt_fy_dsatyr_dwl_mjls_altawn_ldwl_alkhlyj_alrb_yt

¹¹ The World Commission on Environment and Development, Brundtland Commission’s report “Our Common Future”, 1987, *Oxford: Oxford University Press, available online at:* http://home.agh.edu.pl/~awyrwa/Regulacje/UNFCCC/1987_brundtland.pdf

¹² the Permanent Constitution of the State of Qatar, <http://www.almeezan.qa/LawPage.aspx?id=2284&language=en>

¹³ Abdelnaser Hayajneh, “Constitutionalizing sport in the State of Qatar” *estadaldoha Newspaper*, 3/10/2017, Issue 1275 , <http://www.estadaldoha.com/>

Sustainable Development within Qatari Environmental Law

In 2002, Qatar promulgated its first special environmental law to join many world countries¹⁴, Qatari Environmental Law, provides for a comprehensive legal and administrative framework for the protection of the environment. The concept of sustainable development forms a cornerstone theme throughout the provisions of the law. It appears in the Qatari Environmental Law as an overwhelming principle that shapes Qatar's environmental public policy, Article 3 of this law obliges all administrative bodies in the state to take measures necessary for the protection of the environment, fighting pollution and preservation wealth and natural resources, to provide the development needs of the present and future generations.

Article 5 Environmental Protection Law States that: "All the administrative authorities, with respect to their competencies, shall work on guiding the usage of renewable and unrenovable natural resources, to keep what is renewable, to develop it and to lengthen the period of the unrenovable resources, for the benefit of the present and future generations"¹⁵.

The mechanisms adopted by the Law to achieve sustainable development varies to include comprehensive and oversight planning¹⁶, rational exploitation of natural resources, waste management, environmental education, and awareness¹⁷, and finally criminal offenses to punish violators and deter others¹⁸.

Sustainable Development in Qatar National Vision 2030

In July 2008 Qatar launched its future national vision 2030, the document received great deal of attention by governmental departments, decision makers and researchers; Qatar National vision 2030 is not meant to be a legal document, however, it has considerable importance since it provides for future action plan for Qatar.

The State of Qatar decided to adopt and achieve development that carefully balances the interests of the current generation with the interests of future generations¹⁹.

Qatar's vision affirms that accomplishing the vision is a national responsibility. All sections of Qatari society and all sectors have an important role to play. This mission will require significant institutional and organizational capacity building; efficient and transparent delivery of public services; fruitful public-private cooperation and partnerships; the creation of a vibrant climate for business; and a larger space for civil society.

As per sustainable development, it is the core of the vision, and it has been defined as a process that seeks to meet the needs of the present generation without compromising the ability of future generations to meet their needs.

¹⁴ Qatari Environmental Law no 30/2002, available online at:

<http://www.almeezan.qa/LocalPdfLaw.aspx?Target=4114&language=en>

¹⁵ Article 2 assigns sustainable development as one of the objectives of the Environmental Law by stating in paragraph 3: "To develop natural resources and to keep the essential diversity which shall be perfectly exploited for the benefit of present and future generations"

¹⁶ Article 4 of the Qatari Environmental Law states the following: "All the administrative bodies shall respect the environmental considerations and give advanced priorities. They shall also include these considerations in all the stages and levels of planning and make the environmental planning a part of the total plan for development in all the industrial, agricultural, constructional and other domains".

¹⁷ Article 7 of the Qatari Environmental Law reads as follows: "All the responsible authorities for education shall insert the environment educational subjects in the curriculum in all the teaching stages and shall make sure that the curriculum that include these subjects are deeply concerned in the environment education. They shall also work on establishing and developing the institutions that are specialized in ecology to graduate technical elites. In addition, all the responsible authorities for media shall work on consolidating the environment educational programs in the different audible, readable and visual mass media."

¹⁸ Chapter 5 of the Qatari Environmental Law criminalizes many acts or omissions that threaten the environment, please Articles 66-75 of the Qatari Environmental Law,

¹⁹ The vision provides that: "economic development and protection of the environment are two demands neither of which should be sacrificed for the sake of the other".

Qatar has committed itself to achieving the United Nations' Sustainable Development Goals as part of its ongoing development within the framework of Qatar National Vision 2030. Accordingly, four crucial pillars were at the centre of the vision, human, social, economic, and environmental pillars. The environmental pillar will be increasingly important as Qatar is forced to deal with local environmental issues, such as the impact of diminishing water and hydrocarbon resources, and the effects of pollution and environmental degradation, as well as international environmental issues such as the potential impact of climate change on water levels in Qatar and thereby on coastal urban development.

The Vision provides certain method by which Qatar needs to address its' environmental challenges by stating that Qatar needs "effective and sophisticated environmental institutions that build and strengthen public awareness about environmental protection, and encourage the use of environmentally sound technologies. These institutions will also conduct awareness raising campaigns, employ environmental planning tools, and carry out environmental research"²⁰.

As per the vision, many institutions were established in Qatar to perform environmental roles and to help achieving sustainable development i.e. Qatar Green Building Council²¹. Qatar Green Building Council's (QGBC) various initiatives including professional talks, training and education programs, public events, and outreach campaigns, provide effective ways for members of the public to learn about sustainability, get involved in campaigns, have their voices heard, and make the necessary behavior changes for a sustainable future²².

Environmental protection considerations within contracts

According to 6 Article of Qatari Environmental Protection Law no 30 for the year 2002, "All the administrative and private authorities are committed to insert the condition of protecting the environment and fighting the pollution in all the local and foreign agreements and contracts which implementation can cause damaging effects toward the environment. These contracts shall also include penal conditions and commitments to pay the fees for removing the environmental damages and to compensate for them."

This article emphasizes the importance of environment within all kinds of contracts, the general terms used in the provision allows construction contracts to be included in the environmental protection requirements. unfortunately, the article does not provide for the legal consequences if such contractual term was not included²³. Moreover, the article does not provide the elements of contractual term relevant to the environment. However, one may predict that such contractual term will highlight the requirement of environmental protection, along with means to combat and minimize pollution, waste safe disposal, and the contractor's duties and liabilities including penal clause if applicable when there is a failure in the fulfilment of the environmental obligations.

It is to be mentioned in this context that even in the case where no environmental clause included in the construction contract, certain legal rules will still be applicable; i.e. the bylaws, and decision related to safe environmental management of the construction sites²⁴.

²⁰ Qatar National Vision 2030, Available online in English at: https://www.mdps.gov.qa/en/qnv/Documents/QNV2030_English_v2.pdf

²¹ Qatar Green Building Council in one of the most relevant institutions in the context of sustainability, <http://qatargbc.org/media-center/news>

²² Hamoda Yossef, "The Future of Sustainable Urban Development in Qatar" 2017, available online at: <http://qatargbc.org/education/articles/a0002>

²³ In Civil and commercial Law context, the nullification of the contract won't be decided unless an express provision provides for that.

²⁴ Guidelines on special requirements to minimize damages caused by construction labor sites, Ministry of Municipalities, Environment, and Urban Planning, 2015, available online at: http://www.baladiya.gov.qa/static/cat_doc/docs/Building_Permit_Guide.pdf

As for Feb 2017, and According to Qatari Financial Minister Mr. Ali Emadi “90% of the 2022 contracts have already been awarded²⁵. All these contracts are supposed to have environmental clauses, and or penal clauses thereof to conform with the environmental law requirements.

The Qatari Environmental Promise, Qatar 2022, A Green Tournament Ahead

Qatar formed a special supreme committee to be the national body responsible for the delivery of the 2022 world cup²⁶. The Emiri Resolution No. 27 of 2011 establishing the Qatar 2022 Supreme Committee for delivery and legacy determines the objective of the committee in Article 3 by stating: “The Committee shall aim at (a) achieving the best appropriate conditions for the organization and completion of World Cup 2022; (b) enhancing the State's overall development plans in all fields; and (c) creating a legacy for Qatar after completion of the tournament that extends to subsequent generations”.

The supreme Committee has empowered with wide competences to achieve its’ objectives, According to Article 4 of the Emiri decision, “The Committee, as the competent higher authority for all affairs relating to World Cup 2022, shall exercise all necessary powers to achieve its objectives, in particular the following:

1. To develop strategies and general policies of the State relating to World Cup 2022; prepare and follow up the implementation of development, economic and infrastructure plans of the state related to World Cup 2022; and adopt the plans and programs necessary to supervise and monitor such implementation, and link them to the Qatar National Vision 2030, taking into account the obligations imposed on the State by the International Federation of Football Association (“FIFA”).
2. To work on the creation of a favorable environment for the organization and completion of all legal, regulatory, architectural, social, and economic aspects relating to World Cup 2022.
3. To determine the frameworks for supporting and encouraging the various activities and events related to World Cup 2022.
4. To follow up, assess and guide the activities related to 2022 World Cup.
5. To adopt those special projects of World Cup 2022 directly implemented by the Committee and to determine, follow up and implement the projects undertaken by ministries and other governmental and non-governmental organizations.
6. To coordinate initiatives, activities and projects in all fields related to World Cup 2022 with ministries and other governmental and non-governmental bodies, committees, and local, regional, and international organizations in order to ensure the integration of strategies, plans, decisions, and activities of such bodies with the national vision for World Cup 2022.
7. **To propose draft legislative instruments related to World Cup 2022 and to express an opinion on any such instruments that will affect its organization and completion.**
8. To represent the State at the local, regional, and international level in all bodies, organizations, conferences, meetings, and seminars related to World Cup 2022.
9. To conduct any other activities assigned by the Emir”.

It is worth mentioning that, the Board of Directors shall have all powers and competencies necessary to achieve the objectives of the Committee, in particular the following:

1. To develop the Committee's strategies and policies and oversee their implementation.
2. To adopt the Committee's organizational structure and technical regulations.
3. To identify the fees for services relating to the activities of World Cup 2022.
4. **To approve the agreements, contracts, and memoranda of understanding, etc., to which the Committee is a party.**

²⁵The Guardian Newspaper, Feb 7th 2017, <https://www.theguardian.com/football/2017/feb/08/qatar-spending-500m-a-week-on-world-cup-projects-2022>

²⁶ The Emiri Resolution No. 27 of 2011 establishing the Qatar 2022 Supreme Committee for delivery and legacy, <http://www.legal.gov.qa/LawView.aspx?opt&LawID=2789&language=en>

5. To approve the establishment of companies, alone or in association with others, and to create or contribute to projects related to World Cup 2022²⁷.

The State of Qatar has made a promise to organize environmentally friendly tournament, plans are made to build zero-waste stadiums, with less or even zero carbon emissions. According to HE Mr. *Hassan Al Thawadi*, Supreme Committee for Delivery & Legacy (SC) Secretary General²⁸: Qatar is preparing distinguished world-cup stadiums that will use environmentally harmless equipment's, recyclable materials, and will also apply ecologically sustainable solutions besides renewable energy generating systems on the stadiums site²⁹. He also emphasis that Qatar is working in full cooperation and coordination with the Gulf Organization for Research and Development "GORD"³⁰, to comply with and obtain Global Sustainability Assessment System "GSAS" for all its' world cup stadiums³¹.

The trend adopted by the FIFA provides that the World Cup Tournament is to be environmentally friendly event, Russia, the hosting nation of the world cup 2018 introduced new standards for sustainability in world cup stadiums³². In practice, Qatar, the hosting nation of the 2022 world cup tournament, provides high consideration to sustainability issue in the world cup stadiums. Therefore, introducing and implementing sustainability standards and specifications at this stage of preparation may be desirable. These standards may be added to the Qatari National Construction Code at will be suggested later at the end of this paper.

During an interview conducted by the research team³³ with FIFA Sustainability Head Federico Addiechi express FIFA satisfaction as per Qatar's preparations with special highlights for the sustainability designs of the tournament's stadiums. Mr. Addiechi also, highlights FIFA periodic visits to Qatar to be fully aware of the progress made and to offer any advice to Qatari's authorities over FIFA requirements in the World Cup facilities³⁴.

In terms of FIFA environmental and sustainable frameworks, FIFA has launched many environmental initiatives, notably "Football for the Planet Initiatives", which is FIFA's official environmental programme aims to minimize the negative impact of FIFA's activities and tournaments

²⁷ The Emiri Resolution No. 27 of 2011 establishing the Qatar 2022 Supreme Committee for delivery and legacy, <http://www.legal.gov.qa/LawView.aspx?opt&LawID=2789&language=en>

²⁸ Qatar's Supreme Committee for Delivery & Legacy (SC), Official website, <http://www.sc.qa/en>

²⁹ "Qatar Showcase is the world's most sustainable stadium, a radical piece of environmental architecture that was a major driver in Qatar's sustainability plan and World Cup bid. The carbon zero, 500-seater "model stadium" is a football stadium like no other. Commissioned in order to demonstrate to FIFA and the world-wide audience that the harsh climate over the summer months is no longer a barrier to hosting global events; the stadium was designed in six weeks and built during a period of four-and-a-half months. Paramount to the Showcase is the promotion of sustainability, environmentally friendly technologies and first-of-its-kind innovation. The cutting-edge cooling system uses a photovoltaic installation, solar collectors that track the sun, absorption chillers and eutectic storage tanks. Specially designed perforated seats and allow the cooled air to flow from the plenum behind the seats and flow down to the pitch to creating comfortable conditions for spectators and players. During the FIFA visit, with an outside temperature having reached 44 degrees only two hours earlier, the temperature on the pitch was recorded as 23-degree C. The canopy roof rotates to provide cooling shade within the building and insulation against the hot sun in summer.", Qatar 2022 FIFA Showcase Environmental Strategy, <http://www.arupassociates.com/en/exploration/qatar-2022/>

³⁰ The Gulf Organization for Research & Development is a 100% government Qatari organization leading the fight to transform the way buildings are designed, built, and operated by promoting healthy, energy- and resource-efficient building practices., <http://www.gord.qa/>

³¹ Global Sustainability Assessment System (GSAS) is the first performance-based system in the MENA region, developed for rating the green buildings and infrastructures. The primary objective of GSAS is to create a sustainable built environment, considering the specific needs and context of the region. <http://www.gord.qa/gsas-trust>

³² "New Russian construction standard created for FIFA World Cup stadiums", June 2016, <http://www.fifa.com/worldcup/news/y=2016/m=6/news=new-russian-construction-standard-created-for-fifa-world-cup-stadiums-2802275.html>

³³ The research team consists of four faculty members in the College of Law at Qatar University, Professor Hassan Elbarrawy, Professor Abdelnaser Hayajneh, Dr. Yassin Elshazly, Dr. Tarek Rashid. And the Research Assistant Shorook Abdo.

³⁴ Qatar building green stadiums, press release Nov 2016, available online at: <http://www.fifa.com/worldcup/news/y=2016/m=11/news=qatar-building-green-stadiums-2848542.html>

on the environment and to use FIFA competitions to raise awareness of environmental issues. It builds on the environmental programs that have been implemented for FIFA competitions since the FIFA World Cup 2006™ in Germany³⁵. The focus areas of the programme are waste, water, energy, transportation, procurement, and climate change³⁶.

Green or sustainable building is the practice of creating healthier and more resource-efficient models of construction, renovation, operation, maintenance, and demolition. Green building has numerous benefits, the following are the main environmental advantages;

- Reducing waste streams
- Improving air and water quality
- Enhancing and protecting biodiversity and ecosystems
- Conserving and restoring natural resources

Green building has also economic advantages which may be summarized by reducing operating costs, improving occupant productivity, enhancing asset value and profits, and optimizing life-cycle economic performance, moreover, there are some social benefits for adopting green building norms; these benefits are Enhancing occupant health and comfort, improving indoor air quality, minimize strain on local utility infrastructure, and improving overall quality of life³⁷.

Examples of Qatar 2022 World Cup Green Stadiums³⁸.

Qatar intends to build and or renovate seven Stadiums, these Stadiums are:

1. Al Bayt Stadium – Al Khor City
2. Al Rayyan Stadium
3. Thumama Stadium
4. Al Wakrah Stadium
5. Khalifa International Stadium
6. Lusail Stadium
7. Qatar Foundation Stadium
8. Ras Abu About Stadium

Seven of these Stadiums are to be built before 2022, and only Khalifa International Stadium is the renovated one, and has been reopened few months ago³⁹. The remaining Stadiums are now in different stages of construction⁴⁰. According to the Qatari Supreme Committee, the stadiums will all be built with three leading-edge priorities in mind: Access and comfort, Sustainability, and Post-tournament legacy.

In terms of sustainability, Qatari Authorities are working towards Global Sustainability Assessment System (GSAS) certification for all stadiums. To gain GSAS accreditation, only the most environmentally friendly practices and materials are being used. Renewable and low energy solutions are being incorporated wherever possible, helping stadiums to become energy self-sufficient and even to power other facilities in some cases.

³⁵ FIFA Football for the Planet Initiative , a book let available online at: http://resources.fifa.com/mm/document/fifaworldcup/generic/02/11/19/92/footballfortheplaneten_neutral.pdf

³⁶ Polytimi Sofotasiou, Benjamin Richard Hughes, John Kaiser Calautit, Qatar 2022: Facing the FIFA World Cup climatic and legacy challenges, Sustainable Cities and Society, Volume 14, February 2015, Pages 16-30, ISSN 2210-6707, <http://dx.doi.org/10.1016/j.scs.2014.07.007>.

³⁷ Moza Ali Al Marri, “Sustainable Building: *Regulations in Qatar & Comparison with Dubai*”, Unpublished presentation conducted for the requirements of a Master course titled “Regulations, Environment and Qatar Public Policy”, Spring 2017.

³⁸ Note: the information and data, designs and pictures presented in this section are based on the official website of the Qatar’s Supreme Committee for Delivery & Legacy (SC), Official website, <http://www.sc.qa/en/stadiums/>

³⁹ Inside Qatar’s first completed 2022 World Cup venue - the air-conditioned Khalifa International Stadium in Doha, May 18, 2017, <http://www.mirror.co.uk/sport/football/news/inside-qatars-first-completed-2022-10447540>

⁴⁰ Construction progressing on Qatar 2022 stadiums, press release by FIFA, June 19, 2017, available online at: <http://www.fifa.com/worldcup/news/y=2017/m=6/news=construction-progressing-on-qatar-2022-stadiums-2896516.html>

It is worth mentioning that Qatar prepared to extend the legacy of the 2022 world cup stadiums to the wide public in Qatar and abroad, by applying the reuse of certain parts of the stadium after the tournament in building new sporting facilities in Qatar and some developing states. This approach was adopted to spread the legacy of the world cup, and to avoid the phenomenon of white elephant after the world cup⁴¹.

In the other hand, transportation systems taking fans to stadiums will also assist in the journey towards sustainability. Qatar Rail is currently building metro, rail and light rail systems that will take cars off the road, further reducing the environmental impact of the 2022 FIFA World Cup stadiums, and helping Qatar to build a greener future.

1. Al-bayt-Stadium

The 60000 seats stadium will be completed in 2018, Rapid progress is being made on Al Bayt Stadium – Al Khor City. almost half of the stadium’s seats will be removed and donated to other sporting projects after 2022, also, the upper concourse of the stadium will be converted into a hotel. A shopping centre will also be incorporated into the structure. A branch of Aspetar, the leading sports medicine facility, will also find a home there. the design of Al Bayt Stadium “Arabic Tent “will minimize the amount of energy required to keep football fans and players cool. The tent structure’s lightweight canopies will stretch out towards the pitch from every side, providing plenty of shade to supplement the air cooling technologies at work⁴².



2. Al Rayyan Stadium

Al Rayyan Stadium project has had sustainability at its core. Located on the edge of the desert the stadium will present a zero-waste sporting facility. One of the new additions to the site will be a renewable energy generation facility, which will help to power nearby amenities, and serve as a valuable example to stadium developers worldwide. Energy and water efficiency measures will be put into place, and further reductions in the stadium’s carbon footprint will come as the metro connection being delivered by Qatar Rail is completed.

⁴¹ White Elephant: a possession that is useless or troublesome, especially one that is expensive to maintain or difficult to dispose of. Russia the 2018 World cup host for its part vows 'no white elephants' after World Cup. Please see <http://www.nation.co.ke/sports/football/Russia-vows-no-white-elephants-after-World-Cup/1102-4209310-tyxy7w/index.html>

⁴²Qatar Supreme Committee for Delivery and Legacy, <https://www.sc.qa/en/stadiums/al-bayt-stadium/sustainability>



The stadium will have a capacity of 40,000 spectators to be able to host group stage, round-of-16 and quarter-final matches. After the tournament the stadium's capacity will be reduced to 21,000 in legacy mode with the upper tier of seats being removed and sent to developing nations in need of sports infrastructure.

Fans in the stands will sit in a comfortable 24-28 degrees Celsius, while paths and walkways leading to the stadium will also be cooled. Since the Stadium will be using a unique environmentally friendly cooling technology⁴³.

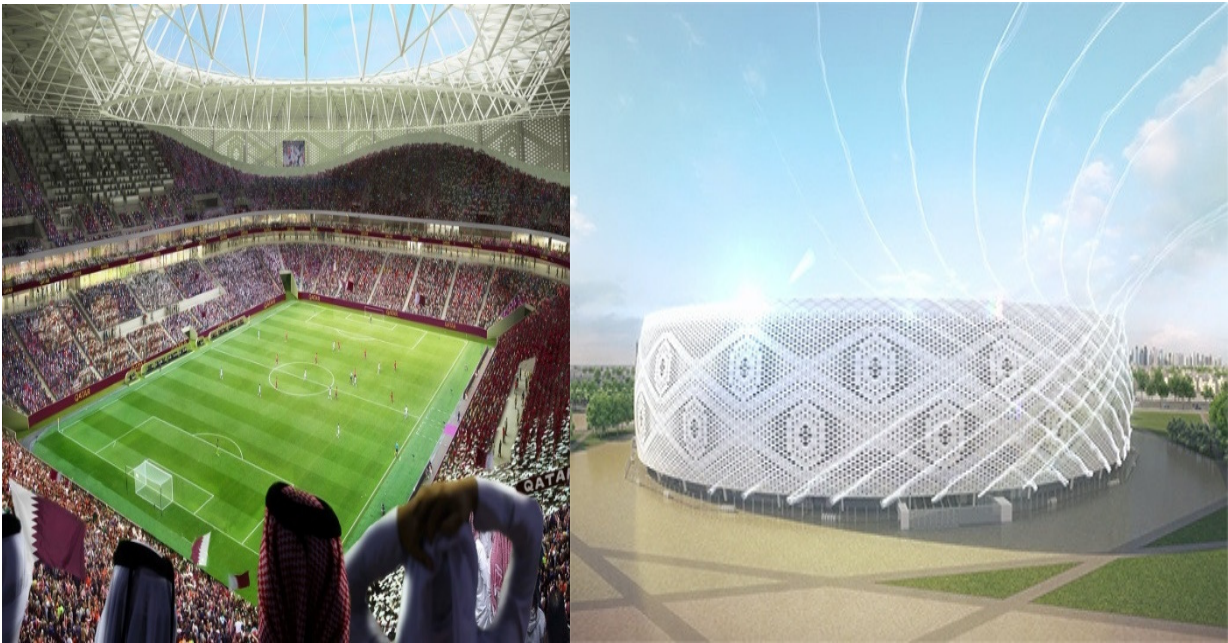
3. Al Thumama Stadium

Located six kilometers south of Doha's glittering skyline and seafront promenade, Al Thumama Stadium's design represents the "*gahfiya*"⁴⁴ – a traditional woven cap worn by males across the Arab world and beyond. The 40,000-seat stadium will host 2022 FIFA World Cup Qatar™ matches through to the quarter-finals. The stadium's capacity will be reduced – after the tournament to meet local needs and provide quality sporting infrastructure to developing nations. The remaining 20,000-seat arena will be used for football and other sporting events. In terms of sustainability, Al Thumama Stadium has incorporated best environmental practice from the start, a particular focus on water and energy efficiency embracing the most state-of-the-art practices to ensure it will be arena of the future, in every way⁴⁵.

⁴³ Mohamed Alaaeldin Mohamed, "Regulated District Cooling Sector for Greener Qatar", 2017, available online at: <http://qatargbc.org/education/articles/a0001>

⁴⁴ The *gahfiya* forms a fundamental layer of the traditional clothing of the region. In supporting the *ghutra* (flowing cotton cloth placed on top of the *gahfiya*) and *agal* (decorative black rope), it is the foundation that holds everything together. It is also a symbol of dignity and independence – a perfect analogy for Qatar and the surrounding region. In terms of heritage, Al Thumama Stadium represent arena that symbolizes Qatar's youth, the country's emergence as a major player on the global sporting scene and the shared Arab heritage that inspired its creation.

⁴⁵ Mohamed Alaaeldin Mohamed, "Reclamation and reuse of Infrastructure", 2017, available online at: <http://qatargbc.org/education/articles/a0003>



4. Al Wakrah Stadium

Al Wakrah Stadium is a 40,000-seat stadium in Al Wakrah City, the Stadium will host matches up to the quarter-final stage of the 2022 FIFA World Cup Qatar. After tournament, it will become the Al Wakrah club's home, with a reduced capacity of 20,000 guaranteeing an electric atmosphere for their Qatar Stars League matches. The other 20,000 seats will be donated to football development projects overseas.

According to the Qatar Supreme Committee, Sustainability runs all through this arena and the surrounding complex, often married with eye-catching design. The beautiful hull-like frame that holds the roof up, for instance, will be made from sustainably sourced timber. And the whole shape of the stadium hides a remarkably green temperature control method, making its clever aerodynamic design do much of the work. The roof will provide significant shade, taking the weight off the advanced cooling systems in place. as the country continues to make great strides towards achieving the environmental goals set out in Qatar National Vision 2030. Al Wakrah Stadium has already received a provisional letter of conformance from the Global Sustainability Assessment System Trust as it moves closer to full certification.





This achievement comes because Al Wakrah Stadium will use environmentally friendly building materials and practices, and introduces a facility that generates clean energy to the stadium. In terms of Carbon emissions, Roads are being upgraded to reduce journey times and emissions, capacity for buses is being increased and it is hoped that a new Doha Metro station - just a short distance from the stadium - will tempt many fans off the roads altogether.

5. Khalifa International Stadium

Khalifa International Stadium has received a major sustainability certificate in 29/11/2017 just few months after its official reopening by the Emir of State of Qatar Sheikh Tamim bin Hamad Al Thani in April 2017. According to press release made by Qatar and international media and FIFA official website, the 40,000-capacity stadium has become the first in the world to be awarded a four-star rating from the Global Sustainability Assessment System (GSAS), which is administered by Qatar-based Gulf Organization for Research & Development (GORD)⁴⁶.



⁴⁶ Khalifa International Stadium receives four-star GSAS Sustainability rating, Press Release , available online at FIFA official website: <http://www.fifa.com/worldcup/news/y=2016/m=6/news=khalifa-international-stadium-receives-four-star-gsas-sustainability-r-2803433.html>

In terms of sustainability and legacy, and to avoid white elephant stadiums after the world cup, Khalifa International Stadium will be one of the main venues for the IAAF World Championships in Athletics in 2019. Qatar also is considering a bid to host to the Summer Olympics in the near future⁴⁷.

6. Lusail City and Stadium

Lusail Stadium is the largest Qatar world cup stadium with 80000 seats, and is scheduled to host the opening and closing ceremonies, games throughout the tournament and the main event itself – the 2022 FIFA World Cup final. The final design of the Lusail Stadium is still taking shape and not confirmed yet. It is worth mentioning that the whole city of Lusail is currently under construction around 15km north of Qatar's capital, Doha, Lusail City is a 21st century city and will eventually become the home of 200,000 people who will enjoy its parks, marinas, businesses, theme park and the largest 2022 FIFA World Cup Qatar stadiums.

Lusail City is a sustainable and comprehensively planned city signifying Qatar's progress on a grand scale. Lusail City is the largest single sustainable developmental project to be undertaken in the State of Qatar. It embodies Qatar's National Vision 2030 in the field of environmental and real estate development.

The city of the future provides a light rail network, a water taxi transportation system, cycle and pedestrian network, park, and ride system. Construction works is underway with almost 65% of the infrastructure completed.

From an environmental perspective, Lusail City is committed to attaining GSAS (Gulf Sustainability Assessment System) certification, measures taken to reduce environmental impact include a long list of measures; i.e.

Reducing the loadings on the urban environment by:

- Minimizing the load on the traffic and transportation infrastructure.
- Developing efficient grounds roads and walkways.
- Encouraging the use of public transportation
- Preventing any risks or pollution to water sources.

Mitigating environmental impacts due to land use by:

- Maintaining and enhancing the ecological value and biodiversity through remediation, conservation, or restoration
- implementing a landscaping plan.

Reducing the energy demand on buildings by:

- Designing the building to lower its energy demand.
- Lowering the demand on non-renewable sources of energy.

Lowering demand on water by:

- Minimizing water consumption.
- Applying Rainwater harvesting projects, and re-using grey water flushing systems in the irrigation of the city landscaping.

Reducing environments impact by:

- Recycling and reusing materials, on and off site.
- Using local materials as much as possible to reduce transportation needs.
- Designing for use of disassembly and reuse/recycling.

Improving environmental quality by:

- Monitoring air temperature and quality to ensure the minimum level of pollutants.
- Ensuring a sufficient level of illumination while using an optimal combination of natural and artificial lighting.

⁴⁷“Avoid 'white elephant' World Cup stadiums, FIFA warns”, a press release published in May 2016, <http://www.arabianbusiness.com/avoid-white-elephant-world-cup-stadiums-fifa-warns-632057.html>

- Controlling the amount of noise.

Strengthening the cultural identity and traditions of Qatar by:

- Encouraging designs to align with cultural identity and traditions.
- Designing for a seamless integration into the existing cultural fabric⁴⁸.

In terms of the Qatar world, Lusail City will be one of the most important and significant cities hosting the main stadium, teams, fans and audiences during the 2022 World Cup. With 22 hotels built, all complying with the highest international standards, and five training fields designed to stringent FIFA specifications, Lusail is fully equipped and ready to host the teams, spectators, and visitors to what is destined to be a most spectacular championship. In general, Lusail City is the first and largest sustainable city in Qatar with ambitious and ground-breaking concepts that reinforce every facet of Qatar's National Vision. Lusail goes beyond the usual concept of a modern city by encompassing innovative ideas that take the sustainability principles into the core of the city masterplan. Therefore, and by analogy to the Qatar world cup stadiums it is expected that Lusail Stadium will represent the hub of Qatar's world cup preparations, it is hoped that Lusail Stadium will be an internationally-recognizable landmark.

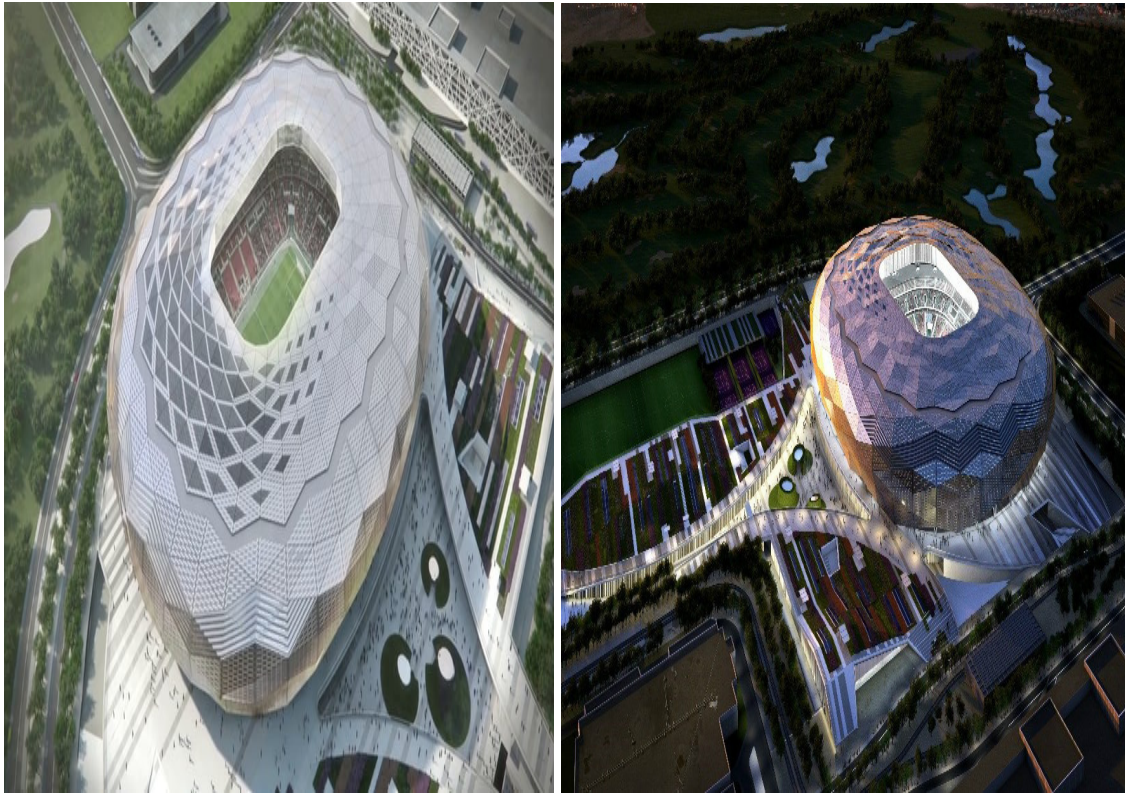


7. Qatar Foundation Stadium

Qatar Foundation Stadium will be an example of sustainability to stadium developers worldwide. It will guide the way for others by embedding innovative photovoltaic and reflective technologies into its roof, using the power of the sun to produce renewable energy. This will be converted into electricity and hot water, powering not only the arena, but also the nearby aquatics and indoor sports centers.

The stadium has been designed using globally recognized best practice, which will result in water and energy efficiency, and at least 20% of the materials used for the stadium project will come from sustainable sources. Furthermore, 50% of all wood-based materials will be procured from sources with sustainable forest management practices, and 20% of all materials will be sourced regionally, minimizing the carbon footprint of the stadium. Along with diverse transportation systems towards the Stadium, Qatar Foundation Stadium will certainly achieve its goal of Global Sustainability Assessment System (GSAS) certifications. and will set a pioneer example in sustainable football stadium design.

⁴⁸ All the information about Lusail City is taken from the City official website, <http://www.lusail.com/>



8. Ras Abu Aboud Stadium⁴⁹.

Ras Abu Aboud Stadium has many fascinating features in the environmental and sustainability context.

- It is Constructed using shipping containers, removable seats and other modular ‘building blocks’.
- It designed to host 40,000- fans, with it 40000 seats with a remarkable design
- Ras Abu Aboud Stadium will be entirely dismantled and repurposed after the Qatar 2022 FIFA World Cup.

This demountable Stadium is unprecedented in the history of the world cup, the Stadiums’ parts will be used in other sporting or non-sporting projects within the State of Qatar and abroad, setting a new standard in sustainability, and introducing bold new and innovative ideas in tournament legacy planning and stadiums’ designs.

According to senior Qatari official, this design of the stadium and its’ materials will accelerate the stadium construction, and more importantly will minimize the cost of it building and will reduce water consumption and Carbon emissions thereof. The official further emphasizes that Ras Abu Aboud stadium will receive a four-star international sustainability certificate.

From sustainability and legacy perspectives, Ras Abu Aboud meets the requirement made by FIFA that “White elephants should be limited to the minimum”⁵⁰, plans are set up to dismantle the whole stadium after the tournament, and reconstruct new facilities in Qatar and other developing countries. Some of the Qatar world cup stadiums will be put in use for the benefit of local sporting clubs, and the public, having in mind that the State of Qatar plans to host continental and/ or international mega sport events, i.e. Olympic Games, international championships.

⁴⁹ In November 26th, Qatar Supreme Committee for delivery and legacy unveils spectacular design plans for Ras Abu Aboud Stadium. And the above pictures were first published at the SC official website, <https://www.sc.qa/en/news/sc-unveils-design-plans-for-ras-abu-aboud-stadium>

⁵⁰“FIFA 2022 stadium numbers to be decided next year” a report published in Nov 2016, <http://www.constructionweekonline.com/article-41721-fifa-2022-stadium-numbers-to-be-decided-next-year/>



Conclusion and Recommendations

Qatar is proceeding well in its' preparations to host the first ever world cup in the Middle East and North Africa, almost 65% of these preparations are completed, and the remaining 35% are underway. And within the next few years Qatar 2022 world cup facilities will be a reality on the ground.

In terms of sustainability Qatar is firmly committed to construct a sustainable and environmental friendly world cup facilities. Many signs are clear that can be cited to endorse this commitment.

One aspect that supports Qatar sustainability approach, is the legacy that the State of Qatar is planning to leave after the tournament for its own population and other communities in the many developing countries.

the Qatari legal frameworks concerning the environment and sustainability seems reasonable given the fact the Qatar start updating its' legislative instruments and introducing new laws over the last two decades. Some amendments are needed to fully guarantee that environmental issues are effectively addressed. the legal tools related to contraction needs more attention from the Qatari legislative authority to provide the followings:

- 1- introducing certain additions to the Qatari Construction National Code in terms of sustainability. These additions must address the whole construction process as follows
 - a- stage one "tendering and contracting"
 - during this stage Qatar may consider these suggested points
 - list of eligible companies and contractors prepared according to certain criteria that focus on the environmental record and sustainable performance of the eligible party.
 - Clarification of the environmental clause required by the Qatari Environmental Law to clarify the content of this clause, it's aspects, and the consequences entails in the event of the clause absence or violation.
 - Insertion of penal clauses in construction contracts.
 - Requiring the existence of environmental expert or consultant in the contractor's cadre.
 - Determining the competent authority to supervise the implementation of the construction.

b- Stage two “sites’ preparation”

During this stage some points needs attention as follows

- Conducting detailed environmental impact assessment for the potential sites.
- Using environmental friendly equipments and processes in the preparation.
- Reducing all kinds of pollution in the construction sites.
- Applying energy efficiency solutions.
- Maintaining vegetation within the construction sites
- Using sustainable designs
- Waste management.

c- Stage three “implementation of the constructions”

- Using recyclable and/ or demountable materials.
- Utilization of renewable energy.
- Applying waste management plan.

d- Stage four “running the stadiums”

- Energy efficiency and renewable energy resources.
- Recycling all kind of recyclable wastes and the safe disposal of the unrecyclable wastes.
- Raising environmental awareness of the public.

Looking Forward

Qatar is proceeding well with its preparations to host the first ever world cup tournament in the Middle East and North Africa, and with less than five years remain, the Qatari promise to deliver a sustainable world cup is approaching. A comprehensive construction processes are underway transforming Qatar into a huge workshop. Qatari Legal framework related to construction contracts seems reasonable, and more detailed and innovative sustainability standards are desirable in this stage to help making the dream feasible and guaranteed. These standards may take the form of an executive bylaw, ministerial decision, or even a directive applicable to all construction contracts including world cup constructions. The issuance of these standards will foster the Qatari performance in this important stage of preparation for the upcoming world cup.

Acknowledgment

This research is conducted as part of a National Priority Research Programme “NPRP” research project funded by the Qatar National Research Fund “QNRF”. The project title is “The Legal framework for Construction Contracts: Challenges and Aspirations in light of the Qatar FIFA World Cup 2022”. Project No: (NPRP 8-999-5-136). Thanks, and gratitude’s are due to QNRF and Qatar University for the generous support.



Qatar National Research Fund (QNRF)

Qatar Foundation (QF) established Qatar National Research Fund (QNRF) in 2006 as part of its ongoing commitment to establish Qatar as a knowledge-based economy. QF views research as essential to national and regional growth, as the means to diversify the nation’s economy, enhance educational offerings and develop areas that affect the community, such as health and environment. For

further information on research fund outlets and opportunities please visit the QNRF official website at: <https://www.qnrf.org/en-us/>

Qatar University



Founded in 1973, Qatar University comprises nine colleges: Arts and Sciences; Business and Economics; Education; Engineering; Health Sciences; Law; Medicine; Pharmacy; and Sharia and Islamic Studies. Over the years, the University has continually expanded its wide range of new programs - the largest selection in the country- while fastidiously seeking the highest international accreditations, and ensuring they are aligned with the growing needs of the labor market and the aspirations of the society it serves. It currently boasts a population of over 20000 students, and an alumni body of over 40,000. For further information, please visit the QU official website at: <http://www.qu.edu.qa/>

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