

**Committee:** Environmental Commission (EC)

**Issue:** Endorsing Zero Energy Building (ZEB) in the reconstruction of war-afflicted regions

**Student Officer:** Lydia Koropouli

**Position:** Deputy-President

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## PERSONAL INTRODUCTION

Dear delegates,

It is with my utmost honour and pleasure to welcome you to the Environmental Commission of the 7<sup>th</sup> ACG Model United Nations Conference! My name is Lydia Koropouli, I am a pre-IB student at the International School of Athens (ISA), and I am greatly looking forward to serving as one of your Deputy-Presidents this year. My MUN journey started around a year ago and since then my passion for discussing and evaluating global issues has grown immensely. This will be my first chairing experience and I'm substantially excited.

This year's agenda is centered around the theme of "Reaching Net-Zero" and our second topic discusses how we can endorse this goal in the reconstruction of war-afflicted areas and is therefore very relevant. By participating in this conference, you are showing interest in developing skills including public speaking, conducting research, and critical thinking, which are all vital practices in our societies. Should you face any issues or have any questions in light of the topic, I'll be glad to help you, so feel free to contact me at the following email address: [lkoropouli@students.isa.edu.gr](mailto:lkoropouli@students.isa.edu.gr)

Best regards,

Lydia Koropouli

## TOPIC INTRODUCTION

Over the past decade, the transition toward achieving zero emissions has impacted all sectors of our society being portrayed as limiting greenhouse gas emissions to nearly zero. Renewable energies are an industry that has enlarged vastly in light of the ongoing climate crisis and therefore can be implemented for the overall benefit of such social and environmental issues. Some regularly used 'green energy' sources include solar energy and wind power. Nearly 30% of the current world's

electricity is derived from renewable energy sources<sup>1</sup>, as it is easily accessible, and ecological.

Throughout history, warfare conflicts have been a common affair taking place around the world. Long-lasting wars may have ultimate consequences regarding the region's economy, culture, and society. One of the most severe effects is the mass destruction of land and its likewise impact on their populations. This leads to the need for the reconstruction of such communities. An innovative approach to collate both aforementioned matters is implementing renewable energy sources within the reconstruction of such war-afflicted areas.

This solution closely associates with the 11<sup>th</sup> United Nations Sustainable Development Goal (SDG), which aims to achieve sustainable cities and communities by 2030. Zero Energy Buildings (ZEBs), refer to the construction of high-energy performance buildings for which very low amounts of energy are required but are covered to a substantial extent by renewable energies. The reconstruction of war-afflicted regions would be very productive once ZEBs are put into practice. Enforcing ZEBs could result in the creation of jobs in the fields of both renewable energies and construction, as well as the gain of energy independence and security in these areas. An example of such a practice includes solar-powered reconstructions in Syria, which have been formerly proposed following the extensive conflicts in the region.

The building of low-energy consuming buildings with the use of renewable sources, in war-distressed land is a contemporary alternative that would drastically contribute in a positive way to the conservation of the environment, by reducing greenhouse gas emissions, while also promoting the necessary achievement of the 17 pre-determined SDGs, aiming at a more equitable and prosperous future for all.

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<sup>1</sup> *Fast Facts*, [https://www.un.org/sites/un2.un.org/files/fast\\_facts\\_-\\_renewable\\_energy\\_oct\\_2022.pdf](https://www.un.org/sites/un2.un.org/files/fast_facts_-_renewable_energy_oct_2022.pdf)

## DEFINITION OF KEY TERMS

### Zero Energy Building (ZEBs)

“A building that has a very high energy performance, while the nearly zero or very low amount of energy required should be covered to a very significant extent by energy derived from renewable sources, including renewable energy produced on-site or nearby.”<sup>2</sup>

### War-Afflicted Regions

Fragile post-conflict areas, as well as areas witnessing weak or non-existing governance and security.<sup>3</sup>

### Renewable Energy Sources

Renewable energy is naturally produced energy that is naturally replenished and inexhaustible, meaning that it does not run out. Such examples include energy generated by the wind or by solar panels, hydropower, geothermal energy, and biomass energy.<sup>4</sup>

### Resilient Infrastructure

Structures and facilities that are “planned, designed, built, and operated in a way that anticipates, prepares for, and adapts to changing climate conditions.”<sup>5</sup>

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<sup>2</sup> *Nearly zero-energy buildings*. (n.d.). Energy. [https://energy.ec.europa.eu/topics/energy-efficiency/energy-efficient-buildings/nearly-zero-energy-buildings\\_en](https://energy.ec.europa.eu/topics/energy-efficiency/energy-efficient-buildings/nearly-zero-energy-buildings_en)

<sup>3</sup> “Conflict Affected and High-Risk Areas (Cahras).” *Responsible Minerals Initiative*, <https://www.responsiblemineralsinitiative.org/minerals-due-diligence/risk-management/conflict-affected-and-high-risk-areas/#:~:text=EU%20definition%20of%20conflict%20affected,law%2C%20including%20human%20rights%20abuses>.

<sup>4</sup> “Renewable Energy.” *Energy.Gov*, <https://www.energy.gov/eere/renewable-energy#:~:text=Renewable%20energy%20is%20energy%20produced,heating%20and%20cooling%2C%20and%20transportation>.

<sup>5</sup> *OECD.Org - OECD*, <https://www.oecd.org/environment/cc/policy-perspectives-climate-resilient-infrastructure.pdf>

## Sustainable Reconstruction

“Rebuilding and sustainable restoration of resilient critical infrastructure, services, housing, facilities, and livelihoods required for the full functioning of a community, or a society affected by a disaster”<sup>6</sup>

## Sustainable Development Goals (SDGs)

A framework established by the United Nation’s General Assembly in 2015, included in “The 2030 Agenda for Sustainable Development”, which involves 17 objectives that serve as a "shared blueprint for peace and prosperity for people and the planet, now and into the future.”<sup>7</sup>

### 11<sup>th</sup> Sustainable Development Goal (SDG11)

A goal stating that in response to the world’s growing population, “we need new and intelligent urban planning that creates safe, affordable, and resilient cities with green and culturally inspiring living conditions”, in order for all of us to survive and prosper.<sup>8</sup>

## Green Building Certification

“Certification which verifies that a building has met environmental, energy, human health, and other standards in its design, construction, and performance.”<sup>9</sup>

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<sup>6</sup> “Reconstruction.” *UNDRR*, 2 Feb. 2017, [www.undrr.org/terminology/reconstruction#:~:text=The%20medium%2D%20and%20long%2Dterm,%E2%80%9Cbuild%20back%20better%E2%80%9D%2C%20to](http://www.undrr.org/terminology/reconstruction#:~:text=The%20medium%2D%20and%20long%2Dterm,%E2%80%9Cbuild%20back%20better%E2%80%9D%2C%20to).

<sup>7</sup> “The 17 Goals | Sustainable Development.” *United Nations*, United Nations, <https://sdgs.un.org/goals>. Accessed 11 Jan. 2024.

<sup>8</sup> “Goal 11: Sustainable Cities and Communities.” *The Global Goals*, 18 Apr. 2023, <https://www.globalgoals.org/goals/11-sustainable-cities-and-communities/>

<sup>9</sup> “Yale Experts Explain Green Building Certifications.” *Yale Sustainability*, 19 Oct. 2020, <https://sustainability.yale.edu/explainers/yale-experts-explain-green-building-certifications#:~:text=%E2%80%9CA%20green%20building%20certification%20verifies,Centerbrook%20Architects%20in%20Centerbrook%2C%20Connecticut>.

## Green Bonds

“Green bonds are a type of debt issued by public or private institutions to finance themselves and, unlike other credit instruments, they commit the use of the funds obtained to an environmental project or one related to climate change.”<sup>10</sup>

## Mini-Grids

“A mini-grid is a set of small-scale electricity generators and possibly energy storage systems interconnected to a distribution network that supplies electricity to a small, localized group of customers and operates independently from the national transmission grid.”<sup>11</sup>

## BACKGROUND INFORMATION

### The Concept of Zero Energy Buildings (ZEBs)

#### The Features and Functions of Zero Energy Buildings (ZEBs)

Zero Energy Building (ZEB) is a concept that concerns the endorsement of environmentally conscious ideas into the construction of resilient infrastructure, specifically buildings and facilities. They aim to fulfill the global initiative of the 11<sup>th</sup> United Nations Sustainable Development Goal (SDG), entitled “Sustainable Cities and Communities,” which refers to the creation of safe, affordable, and resilient cities through intelligent, urban, and sustainable planning. The concept of Zero Energy Buildings (ZEBs) was first introduced in 2010, by the recast of the Energy Performance of Buildings Directive (EPBD) in the [2010/31/EU of the European Parliament and of the Council]<sup>12</sup> and has been consistently advancing since then.

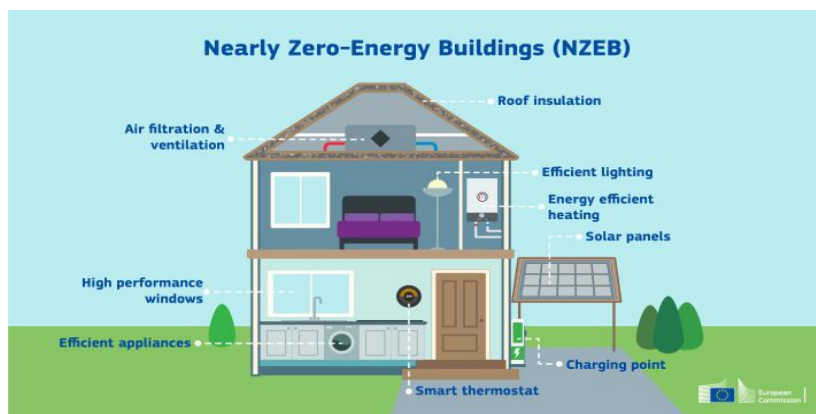
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<sup>10</sup> Corporativa, Iberdrola. “What Are Green Bonds and What Are They For?” *Iberdrola*, <https://www.iberdrola.com/sustainability/investments-green-bonds#:~:text=Green%20bonds%20are%20a%20type,one%20related%20to%20climate%20change>.

<sup>11</sup> *Introduction to Mini-Grids | Green Mini Grids - Energy for Impact*, <https://greenminigrd.afdb.org/how-it-works/help-desk-developers-and-operators/introduction-mini-grids#:~:text=A%20mini%20grid%20is%20a,from%20the%20national%20transmission%20grid>. Accessed 22 Nov. 2023.

<sup>12</sup> *Directive 2010/31/EU of the European Parliament and of the ... - Eur-Lex*, <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:153:0013:0035:en:PDF> Accessed 19 Nov. 2023.

The basic design of Zero Energy Buildings includes a main renewable power source, which will produce as much energy as needed, without surplus. Every ZEB must prioritize the use of energy-efficient appliances and smart systems, in order to stay true to its initial goal. The construction of ZEBs involves the addition of many initiatives that will aid in powering the buildings. First and foremost, solar energy panels will be used as a basic renewable source when powering such buildings, in order to stay true to the initial notion of the ZEBs. Necessary appliances and commodities within the building of housing, in particular, can be applied in an energy-efficient manner, including efficient appliances, lighting, and heating. Other necessary additions would include roof insulation by renewable energy techniques, and air filtration through a mechanical ventilation system with heat recovery (MVHR)<sup>13</sup>. Additionally, in accordance with the initial modernizing initiative, smart thermostats, high-performance windows, and charging points could be in place within the newly constructed ZEBs.



**Figure 1:** Diagram depicting an outline of the features of ZEBs<sup>14</sup>

### Socio-Economic Benefits of Zero Energy Buildings (ZEBs)

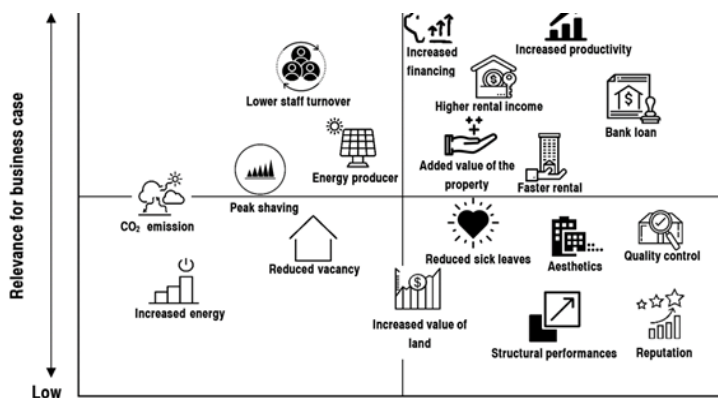
The construction of ZEBs offers multiple benefits on a socio-economic level. They create job opportunities, maintain, and promote holistic sustainability and encourage efficiency. The main goal of the ZEBs is to enforce energy sufficiency while preventing the use of fossil fuels to produce electricity.

<sup>13</sup> "Energy+Building: Zeb Engineering." *Zero-energy building*, <https://www.zero-energybuilding.gr/energy-building>. Accessed 19 Nov. 2023.

<sup>14</sup> *Nearly zero-energy buildings*, Energy. [https://energy.ec.europa.eu/topics/energy-efficiency/energy-efficient-buildings/nearly-zero-energy-buildings\\_en](https://energy.ec.europa.eu/topics/energy-efficiency/energy-efficient-buildings/nearly-zero-energy-buildings_en).

The ZEBs accumulate a net-zero conceptuality and therefore ensure that the minimal, high-performance energy required to power these buildings is precisely how much energy is required, with no excessive, wasteful energy being produced, in accordance with green building certification. The construction of ZEBs may aid growing economies by offering multiple career opportunities, as a growing industry. Job opportunities exceed nearly three times as many as those offered in the fossil fuel industry which has additional, detrimental effects on the environment. Some career opportunities may include sustainability engineers and consultants, energy, electrical, and mechanical engineers, lawyers, and many more. It is an industry that is built up of several different specialties.

The ZEB industry has many additional, so-called “co-benefits” which can be achieved beyond energy savings and climate protection. Such include health benefits, a better way of life, increased productivity, increased energy security, carbon dioxide (CO<sub>2</sub>) emission savings, and lower staff turnover.



**Figure 2:** Co-benefits of ZEBs structured in terms of relevance for the business case and difficulty of quantification<sup>15</sup>

### Potential Hazards in the Zero Energy Buildings (ZEBs)

Although ZEBs offer many benefits and are deemed a very viable solution for reaching positive environmental impact, they also have certain

<sup>15</sup> “NZEB Related Co-Benefits - Cravezero - Cost Reduction and Market Acceleration for Viable Nearly Zero-Energy Buildings.” *CRAVEzero*, 5 Aug. 2020, <https://cravezero.eu/2020/02/28/nzeb-related-co-benefits/>.

technicalities, which may render them difficult to implement in war-afflicted regions.

First and foremost, the construction of ZEBs is a big investment of time and money, whilst the use of high technology and renewable energies makes ZEBs around 10% more expensive than standard building constructions<sup>16</sup>. However, it is important to recall that it is cost-efficient when taking into consideration that they are high-performance buildings which will run long term. In addition, rigorous attention is required in the construction, operation, and design of the ZEBs. If there is a design flaw, this could undermine the building's potential energy waste reduction. Additionally, in case of a design flaw, the construction of ZEBs could act as a danger hazard to the workers working on construction sites.

Moreover, the different climates of different areas and the change in seasons could impact the effectuality of the ZEBs. When dealing with climate change, it is important to highlight the importance of insulation for the winter, which will be ineffective without an additional heating system, bearing in mind that contrarily, natural ventilation won't be functional in humid environments. Consequently, such issues increase the amounts of energy needed to be consumed in response to unexpected climate changes.

Furthermore, it is very difficult to implement low-energy demand construction, as different buildings have different energy structures and requirements without implementing passive house design strategies. Studies indicate that Zero-Energy Building is extremely difficult to implement in buildings over 4-stories<sup>17</sup>. Therefore, ZEBs are seen as an unfeasible alternative in certain cases holistically, although can be implemented partially.

## The Reconstruction of War-Afflicted Areas

### The Four Pillars of Post-Conflict Reconstruction

The reconstruction of war-afflicted regions requires certain regulations and guidelines in order to occur in an effective manner. Therefore, the Center for Strategic and International Studies and the Association of the United States

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<sup>16</sup> "What Are the Challenges in Creating Net Zero Buildings?" *Choose Your Country*, [www.kingspan.com/ie/en/knowledge-articles/what-are-the-challenges-in-creating-net-zero-buildings/](http://www.kingspan.com/ie/en/knowledge-articles/what-are-the-challenges-in-creating-net-zero-buildings/). Accessed 20 Nov. 2023.

<sup>17</sup> Malin, Nadav. "The Problem with Net-Zero Buildings (and the Case for Net-Zero Neighborhoods)." *BuildingGreen*, BuildingGreen, 19 Aug. 2023, [www.buildinggreen.com/feature/problem-net-zero-buildings-and-case-net-zero-neighborhoods](http://www.buildinggreen.com/feature/problem-net-zero-buildings-and-case-net-zero-neighborhoods).



Army created the Post-Conflict Reconstruction Task Framework<sup>18</sup>, in which they evaluated the so-called “Four Pillars of Post-Conflict Reconstruction” in 2002. The Pillars are Security, Justice, and Reconciliation, Social and Economic Well-Being, and Governance and Participation. It was created in order to promote the conceptualization and prioritization of policy responses in the normalization process as an effect of a violent conflict. The framework can be described briefly in three conceptual phrases, being, initial response, transformation, and fostering sustainability.

Security covers aspects of public safety, fostering a safe and secure environment, and the development of legitimate, stable security institutions. It ensures the provision of both collective and individual security, and should security prove effective, it is the precondition for the other pillars of reconstruction to be achieved successfully. This ensures security for the people whose lives were compensated due to the large-scale violence of the conflict and restoring territorial integrity. Justice and Reconciliation concerns the enforcement of protection laws for the people affected by the conflict, which is crucial for restoring a sense of order within affected communities.

The Social and Economic Well-Being of the people addresses the fundamental needs of the impacted populations. The restoration of essential services, laying the foundation for a viable economy, and the initiation and promotion of a sustainable development program are the most important socio-economic advancements needed in afflicted regions in order to recompose the damaged societies and populations. The situation may stabilize, and a long-lasting shift will occur from the urgent need for humanitarian aid to long-term social and economic development. Finally, Governance and Participation address the need for the government to act as a voice for the local population in addressing their needs by encouraging advocacy groups, civic associations, and the media.

### **ZEB Infrastructure in War-Afflicted Areas**

As a result of massive conflicts, many infrastructure have been greatly damaged and even entirely destroyed. This calls upon the creation of a new crisis, the immediate reconstruction of such regions. The aftermath of ongoing conflicts in the communities of a region includes the necessary relocation of the population, and in order for the reconstruction of cities, especially in such

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<sup>18</sup> *Post Conflict Reconstruction - Inclusive Security*, <https://www.inclusivesecurity.org/wp-content/uploads/2017/05/Post-Conflict-Reconstruction.pdf> . Accessed 20 Nov. 2023.

a modernized way involves further funding, through initiatives like green funding.

The implementation of ZEB philosophy in the reconstruction of war-afflicted regions also influences the social well-being of such regions. The construction of Zero Energy Buildings (ZEBs) creates openings and career opportunities for the misfortunate people living in war-afflicted regions. Therefore, they could benefit on both a social and economic scale by the implementation of ZEBs in their societies. From engineers, business consultants, construction workers, environmental lawyers, and even policymakers, the construction of ZEBs offers a very diverse spectrum of opportunities for the population of the afflicted region. It is a business that requires a lot of different specialists, and most people in those regions are seeking job opportunities, in order to restore the social balance of the area.

## MAJOR COUNTRIES AND ORGANIZATIONS INVOLVED

### Syrian Arab Republic

The Syrian Arab Republic's infrastructure was devastated by the 11-year war which unraveled following an uprising going against President Bashar al-Assad in 2011.<sup>19</sup> Following this conflict, Syria is facing a deep energy crisis, which is why many Syrians have turned to the use of solar power. Solar energy has been mostly used in healthcare facilities, to ensure stable and secure energy in order to be able to function even if there is a power shortage.

In 2012, Syria faced the first major consequences of the conflict, as major sections of the civilian electrical grid went out of service. Most power stations were either destroyed or dismantled, which created a crisis, and a reliability on diesel generators. In June 2015, diesel supply routes were disrupted, and for 25 days, there was a lack of electrical input in the country. Farmers couldn't water their crops, jeopardizing the country's food security, and hospitals were forced out of service. This led to the creation of an organization called "Syria Solar," which found comfort in the reliance on solar power to generate, renewable energy, to power hospitals, which also

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<sup>19</sup> UN Human Rights Office Estimates More than 306,000 Civilians Were ..., [www.ohchr.org/en/press-releases/2022/06/un-human-rights-office-estimates-more-306000-civilians-were-killed-over-10](https://www.ohchr.org/en/press-releases/2022/06/un-human-rights-office-estimates-more-306000-civilians-were-killed-over-10). Accessed 20 Nov. 2023.

disrupted diesel-funded violence, since geographically, the Syrian Arab Republic has a great location for harnessing solar power.

## Afghanistan

Afghanistan has had an ongoing conflict on and off for around 20 years. Due to the long-lasting conflicts in Afghanistan, its infrastructure has consequently remained largely undeveloped. Afghanistan, with the aid of the United States Agency for International Development (USAID), managed to implement mini-grid systems powered by hydro and solar projects. Afghanistan also supports and follows the World Bank's Third National Solidarity Program (NSP III)<sup>20</sup>, which is deemed the most successful development program in Afghanistan. In 2019, the World Bank approved a \$40 billion grant to Afghanistan's Government for this program to be in place. Today, around 17 million people from all 34 of Afghanistan's provinces, consisting of the rural population have benefited from this program and the improved infrastructure it provides, such as access to water.

## United Nations Development Program (UNDP)

The United Nations Development Program's (UNDP) main goal is to achieve the UN Sustainable Development Goals (SDGs), according to its initial plan. To achieve this, the UNDP has created and follows a certain Strategic Plan, which lies with the objectives of the 2030 Agenda, by implementing six cross-cutting approaches, called the Signature Solutions, in order to accomplish the SDGs.

The UNDP works with partners to "provide reliable, affordable energy to communities affected by conflict and crises to help them meet basic needs in the short-term and build back better in the long-term<sup>21</sup>." In 2022, the United Nations Development Program (UNDP) created a policy brief entitled "Sustainable Energy Access for Crisis Recovery: Renewable Energy Solutions for Crisis-Affected Communities in the Arab Region<sup>22</sup>," suggesting the integration of renewable energies

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<sup>20</sup> "Development Projects : National Solidarity Program III - P117103." *World Bank*, <https://projects.worldbank.org/en/projects-operations/project-detail/P117103>. Accessed 22 Nov. 2023.

<sup>21</sup> "Energy Resilience." *UNDP*, [www.undp.org/energy/our-work-areas/energy-resilience](http://www.undp.org/energy/our-work-areas/energy-resilience). Accessed 22 Nov. 2023.

<sup>22</sup> "Sustainable Energy Access for Crisis Recovery: Renewable Energy Solutions for Crisis-Affected Communities in the Arab Region." *UNDP*, [www.undp.org/publications/dfs-sustainable-energy-access-crisis-recovery-renewable-energy-solutions-crisis-affected-communities-arab-region](http://www.undp.org/publications/dfs-sustainable-energy-access-crisis-recovery-renewable-energy-solutions-crisis-affected-communities-arab-region). Accessed 20 Dec. 2023.

in the reconstruction and rehabilitation of crisis-affected communities. Accessible energy is a crucial component of both the social and economic development of countries, especially of those affected by conflict.

### **European Union’s Energy Performance of Buildings Directive (EPBD)**

The European Union’s Energy Performance of Building Directive (EPBD) has aided the EU in boosting the energy performance of buildings, through the Energy Performance of Building [Directive 2010/31/EU of the European Parliament and of the Council] introducing the concept of Nearly Zero Energy Buildings (NZEBs) and the [Directive 2012/27/EU of the European Parliament and of the Council] on energy efficiency. These Directives aim to achieve a highly energy-efficient and decarbonized building stock by 2050 and enforce a stable environment for investments.

### **United Nations Environment Program (UNEP)**

The United Nations Environment Program (UNEP) is a global environmental authority whose mission is to inform, stimulate, and enable the populations of UN member states’ quality of life to improve without compromising that of future generations. Part of UNEP’s work to achieve its holistic mission includes transitioning towards low-carbon and resource efficiency while strengthening environmental governance, safeguarding ecosystems, and informing policy decisions. UNEP provided technical assistance when contributing to the workshop entitled Low Greenhouse Gas Emissions: Promoting Energy Efficiency & Renewable Energy in Buildings in Jamaica Project of the ISD, whose purpose was drafting a national policy and plan for Zero Energy Building (ZEB) in Jamaica.

## **TIMELINE OF EVENTS**

<b>Date</b>	<b>Description of event</b>
1 May 2002	The Post-Conflict Reconstruction Task Framework was created by the Center for Strategic and International Studies (CSIS) and the Association of the United States Army
19 May 2010	The recast of the Energy Performance of Buildings Directive (EPBD) first introduced the concept of Zero Energy Buildings (ZEBs) in the [Directive 2010/31/EU of the European Parliament and of the Council]

25 October 2012	The recast of the Energy Performance of Buildings Directive (EPBD) introduced the [Directive 2012/27/EU of the European Parliament and of the Council] On energy efficiency.
25 September 2015	The 17 Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development became adopted by world leaders
12 December 2015	The Paris Agreement was adopted by 196 Parties at the UN Climate Change Conference (COP21) in Paris, France

### RELEVANT UN RESOLUTIONS, TREATIES AND EVENTS

- United Nations Framework Convention on Climate Change (UNFCCC) and its Conferences of the Parties (COP) – Paris Agreement (CO21)<sup>23</sup>
- Sustainable Development Goal 11 (SDG11) – “Sustainable Cities and Communities”<sup>24</sup>
- Sustainable Development Goal 7 (SDG7) – “Affordable and Clean Energy”<sup>25</sup>
- Promotion of new and renewable sources of energy: resolution / adopted by the General Assembly, 11 March 2010, (A/RES/64/206)<sup>26</sup>
- The right to development: resolution / adopted by the Human Rights Council on 28 September 2017, (A/HRC/RES/36/9)<sup>27</sup>

<sup>23</sup> *The Paris Agreement - UNFCCC*, [https://unfccc.int/sites/default/files/resource/parisagreement\\_publication.pdf](https://unfccc.int/sites/default/files/resource/parisagreement_publication.pdf). Accessed 11 Jan. 2024.

<sup>24</sup> “Goal 11: Sustainable Cities and Communities.” *The Global Goals*, 18 Apr. 2023, <https://www.globalgoals.org/goals/11-sustainable-cities-and-communities/>

<sup>25</sup> “Goal 7 | Department of Economic and Social Affairs.” *United Nations*, United Nations, <https://sdgs.un.org/goals/goal7>. Accessed 12 Jan. 2024.

<sup>26</sup> *General Assembly - United Nations Economic and Social Commission For ...*, [https://archive.unescwa.org/sites/www.unescwa.org/files/un\\_resolutions/64-206.pdf](https://archive.unescwa.org/sites/www.unescwa.org/files/un_resolutions/64-206.pdf). Accessed 12 Jan. 2024.

<sup>27</sup> “The Right to Development :” *United Nations*, United Nations, [https://digitallibrary.un.org/record/1310419/files/A\\_HRC\\_RES\\_36\\_9-EN.pdf?ln=fr](https://digitallibrary.un.org/record/1310419/files/A_HRC_RES_36_9-EN.pdf?ln=fr). Accessed 12 Jan. 2024.

## PREVIOUS ATTEMPTS TO SOLVE THIS ISSUE

### Directive 2010/31/EU of the European Parliament and of the Council

A directive proposed by the recast of the European Union's Energy Performance of Building Directive (EPBD), which introduces and proposes the concept of Zero Energy Buildings (ZEBs), stating what they are, how they function, and how they can be beneficial long term. The main objectives of this directive concern promoting energy efficiency, energy performance certificates, renovation strategies, and more. This Directive was adopted on May 19<sup>th</sup>, 2010, in Brussels, Belgium, as part of the European Union's legislative process. According to the EPBD, the construction of all newly built buildings in the EU should be nearly zero-energy by the end of 2020<sup>28</sup>. This initiative suggests that conflict-afflicted regions within the EU would accumulate energy sufficiency in their reconstruction. This is also aimed to be in order on a global scale, by 2030 considering the UN SDGs.

### Directive 2012/27/EU of the European Parliament and of the Council

A directive aimed to improve energy efficiency by 20% by 2020 compared to 1990 levels and included a requirement for all EU countries to set national energy efficiency targets to achieve this. Its provisions and regulations should be implemented within each EU Member State's legislation according to the directive. Some key provisions of the directive include energy efficiency obligation schemes, energy audits in the case of large enterprises, the leadership of the public sector in regards with reaching energy efficiency, and more. It was adopted on October 25<sup>th</sup>, 2012, as part of the European Union's legislative process.

### United Nations Development Program's (UNDP) Signature Solutions

The Signature Solutions are an SDG-involved aspect of The United Nations Development Program's (UNDP) Strategic Plan (2018-2021). The UNDP's six Signature Solutions are on poverty and inequality, governance, resilience, environment, energy, and gender equality<sup>29</sup>. The Signature Solutions are an initiative that will be found in both the initial and the updated version of the Plan for (2022-2025). Therefore, it is a

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<sup>28</sup> *Nearly zero-energy buildings*, Energy. [https://energy.ec.europa.eu/topics/energy-efficiency/energy-efficient-buildings/nearly-zero-energy-buildings\\_en](https://energy.ec.europa.eu/topics/energy-efficiency/energy-efficient-buildings/nearly-zero-energy-buildings_en).

<sup>29</sup> "UNDP Strategic Plan 2022-2025." UNDP, <https://www.undp.org/turkiye/publications/undp-strategic-plan-2022-2025>. Accessed 12 Jan. 2024.

successful initiative which focuses on the UNDP's strongest roles and capabilities within the UN system.

### **United Nations Development Program's (UNDP) "Sustainable Energy Access for Crisis Recovery: Renewable Energy Solutions for Crisis-Affected Communities in the Arab Region"**

This policy brief recognizes and highlights the impact that lack of energy access in distressed zones has on an area's mass population. It seeks to outline the challenges and opportunities in accelerating the 7<sup>th</sup> SDG as well as the 16<sup>th</sup> SDG, focused on countries in crisis and those impacted by crisis in the Arab region.<sup>30</sup> As the affected inhabitants in an ongoing crisis, would require energy to rehabilitate and lead towards resilient, and long-term development. The policy brief also urges the acknowledgment of the fact that the lack of sustainable energies, withholds affected communities from recovering from crisis and increasing development and productivity.

## **POSSIBLE SOLUTIONS**

### **Risk Assessment Framework**

Creating and implementing a framework to ensure the safety of workers who construct Zero Energy Building (ZEB) projects considering the harsh environmental, social, and security situations of war-afflicted regions. The creation of such a framework should involve collaboration with Non-Governmental Organizations (NGOs), local communities and other international agencies, to be able to understand the potential hazards of the workers to a significant extent, regarding the specific necessities required when concerning war-afflicted areas.

### **Green Funding and Technical Assistance for ZEB Construction**

As the creation of Zero Energy Buildings (ZEBs) can be difficult to adjust in an economically and socially destroyed area, as their construction requires a lot of money and time, ZEB construction should be aided and supported through financial and technical assistance by international entities such as the United Nations, the European Union or the World Bank through the establishment of initiatives which support the

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<sup>30</sup> "Sustainable Energy Access for Crisis Recovery: Renewable Energy Solutions for Crisis-Affected Communities in the Arab Region." *UNDP*, [www.undp.org/publications/dfs-sustainable-energy-access-crisis-recovery-renewable-energy-solutions-crisis-affected-communities-arab-region](http://www.undp.org/publications/dfs-sustainable-energy-access-crisis-recovery-renewable-energy-solutions-crisis-affected-communities-arab-region). Accessed 20 Dec. 2023.

funding of green building and infrastructure projects including green bonds, which are a type of debt used to fund an environmental project, and the accessibility of low-interest loans, meaning charging a relatively small percentage of the amount borrowed.

### Long-Term Monitoring

To ensure that the positive impact of ZEBs remains within the buildings it is important to recognize the importance of long-term monitoring systems to help maintain this. The implementation of systems that can ensure that the early ZEBs achieve energy efficiency accordingly over long time periods in order to assess the overall impact on the environment and the community. This is a vital practice that would especially aid war-afflicted zones, and re-establish their economic, social, and cultural state, while preferring resilient and sustainable approaches.

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