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ANALYZING THE IMPACT OF SOLAR ENERGY Y1 INVESTMENT ON SUSTAINABLE ECONOMIC DEVELOPMENT IN IRAQ (2015–2025)

Hadeel Jasim Hajim
Oil and Gas Economics, College: Administrative and Financial Sciences
University: Ja'far al-Sadiq, peace be upon him, Iraq
hadeel_jasim@ijsu.edu.iq

Abstract
This research examines the impact of investment in solar energy on sustainable economic development in Iraq during the period (2015–2025), particularly in light of the challenges facing the Iraqi economy due to its heavy dependence on oil exports and the fluctuations in global oil prices. The importance of the study stems from Iraq's urgent need to diversify its energy sources and achieve sustainable development through clean and renewable alternatives—most notably solar energy, for which Iraq possesses abundant natural potential. The research problem lies in the insufficient actual utilization of solar energy in Iraq, despite the existence of scattered investment projects and a lack of adequate analytical studies to measure the impact of these investments on macroeconomic indicators such as economic growth, unemployment, and energy stability. The study aims to achieve a set of objectives, most notably: measuring the volume of solar investments, analyzing their relationship with economic growth, and assessing their contribution to job creation and energy stability. The research adopted both descriptive and quantitative analytical methodologies, using official and statistical data for the study period and analyzing it with econometric tools. The results indicated a positive relationship between solar energy investments and economic growth, as well as their contribution to reducing unemployment rates and improving the stability of the electricity grid in some provinces.The study concluded with several recommendations, most notably: strengthening the legislative framework for renewable energy investment, expanding technical training programs, and improving energy network infrastructure to ensure optimal benefit from this vital sector in supporting sustainable development in Iraq.

Keywords : Impact of investment, solar energy, sustainable development.

Introduction

In recent decades, the world has witnessed growing attention to renewable energy sources, particularly solar energy, as a strategic option for achieving sustainable development and reducing reliance on fossil fuels. This trend has emerged amidst escalating environmental and economic challenges—foremost among them climate change, depletion of natural resources, and rising unemployment rates, especially in developing countries. In Iraq, the growing demand for energy and the challenges associated with traditional infrastructure have made solar energy investment an urgent and viable option to support sustainable economic

growth. Analyzing the impact of these investments during the period 2015–2025 constitutes an essential step toward understanding their economic and social feasibility, and assessing their contribution to achieving sustainable development goals.

Importance of the Study

This study draws its significance from its intersection with several vital economic and developmental issues in Iraq, especially in light of the country's energy and development challenges. It sheds light on a critical sector that can contribute to diversifying national income sources and reducing dependence on oil. It also provides direction for policymakers toward sustainable investment policies that support the transition to a green economy. The importance of the research can be summarized as follows:

• Focus on analyzing the reality of solar energy investment—a field that has not received sufficient attention in Iraqi economic literature.

• Provide a clear vision of the extent to which these investments contribute to achieving sustainable economic development goals, such as job creation, supporting the local economy, and improving the environment.

• Assist policymakers and planners in designing effective policies to support and expand renewable energy projects.

• Enrich economic content with up-to-date data and analyses specific to the period 2015–2025, a pivotal stage in Iraq's economic evolution.

Research Problem

Despite Iraq's significant potential in solar energy, actual investments in this sector have remained limited, weakening its contribution to achieving sustainable economic development. Iraq still heavily relies on traditional energy sources, which are affected by global oil price fluctuations, rendering the country vulnerable to repeated economic shocks. Although there have been governmental and international initiatives supporting renewable energy, they have not translated into large-scale projects or structural changes in the economy. From this, the main research question emerges:

To what extent has investment in solar energy contributed to enhancing sustainable economic development in Iraq during the period (2015–2025)? This central question is divided into several sub-questions, including:

1. What is the volume of investments allocated to solar energy in Iraq during the study period?
2. What is the extent of the impact of these investments on economic growth indicators (such as GDP, employment, and economic diversification?(
3. • What are the challenges facing the expansion of solar energy projects in Iraq?

Research Objectives

This study aims to examine the reality and development of solar energy investment in Iraq and assess its impact on achieving sustainable economic development during the period 2015–2025. The key objectives include:

• Analyzing the effect of solar energy investment on sustainable economic development indicators in Iraq during 2015–2025.
• Tracking the evolution of investment volumes in solar energy projects during the specified period.
• Evaluating the impact of these investments on selected economic indicators such as GDP, employment, and economic diversification.
• Identifying the main obstacles and challenges facing the development of the solar energy sector in Iraq.
• Providing a set of proposals and recommendations that may contribute to encouraging investment in renewable energy and enhancing sustainable development.

Research Hypotheses

The study is based on a set of hypotheses to be verified through theoretical and quantitative analysis during the period 2015–2025. The main hypotheses are:
• There is a statistically significant positive impact between investment in solar energy and achieving sustainable economic development in Iraq during the period 2015–2025.
• Increasing investment in solar energy projects leads to a rise in Iraq's GDP.
• Investment in solar energy contributes to job creation and a reduction in unemployment rates.
• Reliance on solar energy helps diversify energy sources and reduce dependence on oil.
• There are financial and regulatory constraints among the key challenges facing solar energy investment in Iraq.

Research Methodology

To achieve the study's objectives and answer its questions, a descriptive-analytical approach has been adopted. This approach combines a review of theoretical frameworks and previous studies with the analysis of economic data related to solar energy investment and sustainable economic development indicators in Iraq during the period 2015–2025.

Theoretical Framework: Renewable Energy and Sustainable Economic Development

Firstly: Concept and Economic Importance of Renewable Energ

Renewable energy refers to sustainable and inexhaustible natural sources such as solar, wind, hydro, and biomass energy. These sources are environmentally friendly and reduce dependency on fossil fuels. Economically, renewable energy contributes to diversifying energy sources, generating employment, attracting investments, improving the balance of payments by reducing fuel imports, and enhancing national energy security.

Iraqi legislation defines renewable energy as "energy derived from natural resources that are renewable and inexhaustible, including energy from the sun, water, wind, waves, tides, and geothermal sources, differing from fossil energy in that its residues do not pollute the environment".[(i)] .

Renewable energy encompasses various sources including solar energy, geothermal energy, wind energy, biomass, hydropower, tidal and wave energy, ocean thermal energy, salt gradient energy, hydrogen, nuclear energy, and bioenergy [(ii)]" .

It can be defined as: "a set of natural, non-depletable sources continuously available in nature—whether limited or unlimited—that are renewed persistently, clean, and relatively non-polluting"[iii] .

Green renewable energy is also defined as: "energy derived from natural resources that do not run out, do not cause environmental damage such as CO_2 emissions, and are based on recurring natural energy flows that require the use of technology to make them usable".[iv]

Secondly: Characteristics of Renewable Energy

Renewable energy has several key features:

.1 Technological Diversity: It includes a heterogeneous group of technologies for generating electricity, thermal energy, mechanical power, and fuel, many of which require advanced scientific and technical expertise[v] .

.2 Permanence: Renewable energy sources are long-lasting and inexhaustible, making them ideal for sustainable investments.

.3 Irregular Availability: These sources are intermittent, varying with climate factors such as sunlight and wind, and cannot be controlled or stored in fixed quantities [vi] .

.4 Low Energy Density: Due to low intensity, large-scale infrastructure and high-cost equipment are often needed, limiting widespread adoption.

.5 Multiple Forms: Renewable energy comes in various forms—electromagnetic, thermal, wind—necessitating different technologies for each.

.6 Geographical Availability: Found across most countries, though unevenly distributed.

.7 Non-Transportable: Typically local sources best suited for rural and remote areas.

.8 Environmental Safety: Clean and pollution-free, posing no risks to public health, unlike fossil fuels.

9. Economic Support: Enhances national economies through investment returns and job creation . [vii]

Third: Solar Energy

Solar energy is the most abundant form of renewable energy globally. Iraq is among the countries with the highest solar radiation levels, making it well-suited for solar energy expansion. All energy sources on Earth ultimately stem from the sun, which offers a decentralized, non-political source of power, unaffected by global markets or conflicts. .[viii]

Economic advantages of solar energy include:

- Low operational and maintenance costs after installation.
- Feasibility in remote areas not connected to national power grids.
- Support for small and medium enterprises, particularly in agriculture and industry.
- Reduction in fuel import bills and increased reliance on domestic resources.

Fourth: The Concept and Dimensions of Sustainable Economic Development

The concept of sustainable development is widely used and has multiple meanings, which has led to a variety of overlapping and diverse definitions. According to the definition adopted at the United Nations Conference on Environment and Development held in Rio de Janeiro, Brazil, in 1992, sustainable development is [ix] :

"The need to realize the right to development in a manner that equally meets the developmental and environmental needs of present and future generations" [x] .

Sustainable development is also defined as:

"Redirecting economic activity and selecting economic, social, and developmental patterns that are consistent with appropriate environmental considerations, while preventing environmental damage and ensuring equality and social justice".

This concept has expanded to encompass several key dimensions:

• Economic: Aims to employ available resources to raise the living standards of communities.

• Social: Seeks to enhance the quality of educational, health, and other social services.

Sustainable economic development is a development model that promotes economic growth while preserving the environment and ensuring social justice across generations. It is built upon three main dimensions [xi] :

1 :Economic Dimension

Increasing GDP, diversifying the economy, and reducing unemployment.

Economic sustainability enables a system to continue producing goods and services in a way that maintains economic balance, prevents disruptions, achieves steady growth, and ensures fair distribution of the benefits of development among its target populations.

2: Environmental Dimension

Protecting natural resources, reducing emissions, and adopting clean energy.

This dimension emphasizes equitable distribution of resources and access to essential services such as health and education. It also supports active community participation and optimal use of human resources, all based on the fundamental right of individuals and societies to live in a clean environment. It seeks to ensure human well-being by improving essential health and education services and meeting basic human security standards.

3:Social Dimension

Improving living standards, income distribution, and access to essential services.

This dimension focuses on preserving the foundational assets of natural and biological resources. It seeks to avoid excessive depletion of renewable and non-renewable resources and to support key activities necessary for sustainable development. In other words, it aims to maintain the resource base essential for long-term prosperity.

Fifth :Goals of Sustainable Development

Sustainable development aims to achieve a range of objectives. The most important of these goals can be summarized as follows [xii] :

.1 Improve the quality of life for the population by emphasizing the relationship between human activities and the environment, and treating the ecosystem as essential to human life through measures that preserve environmental quality.

.2 Respect the environment and nature, focusing fundamentally on human interactions with the natural world.

.3 Enhance public awareness of existing environmental problems and foster a sense of responsibility toward them, encouraging active participation in identifying suitable solutions. This includes involvement in the planning, implementation, monitoring, and evaluation of sustainable development programs and projects that directly target communities.

.4 Ensure rational use of resources, recognizing that natural resources are limited. Sustainable development works to prevent their depletion or destruction and promotes their efficient and responsible utilization.

.5 Integrate modern technology with societal goals, by raising awareness of the importance of various advanced technologies in development. It seeks to teach communities how to use both available and emerging technologies to improve quality of life and achieve development objectives, without causing environmental harm. Where risks do exist, sustainable development promotes manageable and appropriate solutions.

6. Bring about appropriate changes in societal priorities and needs, aligning them with the capabilities and potential of the community. This balance enables the activation of economic development and facilitates addressing broader economic challenges.

Sixth: The Relationship Between Renewable Energy and Sustainable Economic Development[(xiii)]:

Renewable energy, especially solar energy, is a cornerstone of sustainable economic development for both developed and developing countries. This relationship manifests in the following ways:

- Providing clean and safe alternatives reduces reliance on fossil fuels.
- Lowering environmental and health-related costs, thereby improving quality of life.
- Supporting green economic growth and job creation in renewable sectors.
- Enhancing economic stability by diversifying income sources.
- Encouraging local innovation, technological advancement, and entrepreneurship.
- Aligning with key Sustainable Development Goals (SDGs), especially those related to clean energy, economic growth, decent work, and infrastructure.

In Iraq, solar energy represents a strategic option to address oil price volatility, rising electricity demand, and environmental degradation. With adequate government support and public-private partnerships, solar investments could enhance Iraq's economic resilience and long-term sustainability.

Global studies have confirmed that renewable energy investment promotes sustainable development through:

- Promoting green growth.
- Creating new jobs in the energy and environmental sectors.
- Supporting economic stability through diversified revenues.
- Stimulating local technology and innovation.

Countries like Germany, China, and Morocco serve as successful models where solar energy plays a central role in national development strategies.

Seventh: International Experiences in Solar Energy Investment

Many countries have significantly expanded their solar energy investments in the past two decades. These experiences serve as valuable references for developing nations like Iraq:

.1 Germany

Germany pioneered solar energy under its Energiewende (Energy Transition) strategy. It adopted incentive-based policies such as Feed-in Tariffs, encouraging citizens and businesses to install solar panels. This made Germany a global leader in solar electricity generation, creating thousands of green jobs and cutting carbon emissions significantly [(xiv)] .

.2 China

China is the world's largest producer and installer of solar energy systems. It has invested billions in mega solar farms (e.g., the Tangshan plant in the Gobi Desert) and built a complete domestic supply chain, significantly lowering global prices. These efforts have enhanced energy efficiency, reduced coal dependence, and supported rural development [(xv)] .

.3 Morocco

Morocco launched the "Noor" solar project, one of the largest globally, in the Ouarzazate region. The project aims to meet over 40% of Morocco's renewable energy needs by 2030. It has enabled technology transfer, local job creation, and reduced the trade deficit related to energy imports .[(xvi)]

.4 United Arab Emirates

The UAE has adopted a clear clean energy strategy, with projects such as the Mohammed bin Rashid Al Maktoum Solar Park in Dubai—one of the largest in the world. These investments have diversified income sources, reduced energy costs, and advanced the country's green economy agenda . [(xvii)]

Chapter Two: The Reality of Solar Energy in Iraq (2015–2025(

Firstly: The Current Status of Renewable Energy in Iraq

Iraq is one of the countries most exposed to solar radiation throughout the year, with sunshine hours ranging from 2,800 to 3,300 hours annually in most regions, especially in the central and southern areas. It also has vast areas of unused land suitable for solar power plants. These natural resources present strong incentives for investment, especially amid the global decline in renewable technology costs and increased economic feasibility.

Despite its potential, Iraq continues to rely heavily on depletable energy sources—primarily oil and natural gas. Moreover, mismanagement and inefficient utilization have led to substantial waste, including high levels of gas flaring. Iraq ranked among the top gas-flaring countries globally, with burned volumes rising from approximately 7.1 billion cubic meters in 2005 to 10.3 billion cubic meters in 2012[(xviii)] .

According to Iraq's Ministry of Electricity (2016 report), hydroelectric power contributed only about 10,502 megawatts of electricity in 2016, representing a mere 3.66% of total electricity generation—an indication of the underutilization of both renewable and non-renewable energy sources. Iraq also holds the fourth-largest natural gas reserves in the Arab

world and ranks thirteenth globally, with reserves estimated at 3,819.9 billion cubic meters in 2016.

Although Iraq relies on hydropower due to its abundance of dams, rivers, and waterfalls, it still fails to meet local demand. Therefore, to align with global energy trends and provide safe, sustainable energy, Iraq must invest in renewable sources. Economic growth and a favorable climate for renewables are crucial for Iraq's energy future [(xix)].

secondly : Solar Energy in Iraq

Iraq possesses favorable conditions for transitioning to renewable energy—especially solar energy—due to unprecedented temperature increases and high levels of solar radiation, particularly in the central and southern provinces. Geographically, Iraq lies between 29.5°–37.22° N latitude and 39°–48° E longitude, offering a warm, Mediterranean-like climate in most parts and significant solar potential [(xx)] .

The western and southern deserts cover nearly 64,900 square miles (about two-fifths of Iraq's land area). The annual average solar radiation ranges from 1,988 to 2,100 kilowatt-hours per square meter—comparable to South Africa's solar resources (2,218 kWh/m²) [(xxi)] .

In 2016, the Al-Zawraa Company, affiliated with the Ministry of Industry and Minerals, announced the production of an electric system powered by solar energy—marking a first-time collaboration with the Ministry of Electricity. The system, with a capacity of approximately 15 kilowatts, was installed in government facilities and connected to the national grid.

In 2019, the Ministry of Electricity invited independent power producers to develop seven photovoltaic solar sites with a total capacity of 755 megawatts, ranging between 30 and 300 megawatts. This was seen as a significant step toward diversifying Iraq's energy mix.

International organizations such as the World Bank, RCREEE, IRENA, IEA, and UNDP offer technical and commercial support to Iraq's solar initiatives, both for large-scale facilities and rooftop systems [(xxii)] .

The table below illustrates monthly and annual average solar radiation levels (W/m²) for southern climate stations:

Table (1): Monthly and Annual Averages of Solar Radiation Intensity in Southern Stations (W/m²)

January	February	March	April	Mays	June	July	Septem ber	October	November	January	Annual average	The most famous station
36.6	44.8	56.6	67.9	76.6	80.6	78.2	59.7	48.6	38.6	33.6	57.8	**The neighborhood**
37	45.2	57	68.4	77.1	80.9	78.8	60.7	49.2	39.1	34.2	58.3	**Diwaniyah**
37.6	45.2	56.2	68.3	77.1	81	78.7	60.6	49.1	38.8	35	58.3	**architeture**
37.8	45.6	56.4	68.4	77.6	81.3	79.5	62.5	50.1	39.1	34.1	53.8	**Samawah**
37.3	45	56.3	68.1	76.7	80.8	78.2	60.4	49.4	38.4	33.3	57.9	**Nasiriyah**
38.3	46.4	58.2	70.1	78.4	82.8	80.6	62.2	50.1	40.2	36.2	59.7	**Basra**

Table prepared by the researcher based on data from the Republic of Iraq, Ministry of Science and Technology, Iraqi Meteorological Organization and Seismology, Baghdad, unpublished data, 2017.

From this data, it is evident that the highest solar radiation levels occur during May, June, July, and August, ranging from 70.9 to 82.8 W/m². Despite monthly fluctuations, the annual averages across southern stations are very close, ranging from 53.8 to 59.8 W/m²—indicating suitable conditions for electricity generation via solar power.

Third :Obstacles to Renewable Energy Production in Iraq

Iraq remains a rentier state heavily reliant on oil and gas for energy production and public financing. Despite international and domestic interest in renewables, investment has been limited due to several challenges:

A. Technological Barriers:

Although Iraq has abundant renewable resources, the lack of advanced technologies and skilled labor hinders development. Renewable energy projects require modern equipment and specialized technical expertise, which Iraq currently lacks [(xxiii)] .

B. Financial Constraints:

Over 93% of Iraq's revenues come from oil, making the economy vulnerable to price shocks—as seen when oil dropped below $40 per barrel in 2014. Non-oil revenues (e.g., taxes, fees) contribute only 7–8%, further restricting public investment. Budget allocations are mostly consumed by electricity imports, leaving little for renewable energy projects.

C. Awareness and Social Acceptance:

Low public awareness and misconceptions about renewable technologies remain significant barriers. Skepticism toward solar systems, concerns about reliability, and limited exposure to successful applications undermine public and institutional trust, weakening demand and slowing adoption [(xxiv)] .

Fourth: Barriers to Renewable Energy Investment

Despite its advantages, renewable energy investment in Iraq faces several challenges:

.1Legal Challenges:

Iraq's investment environment is governed by a complex web of overlapping laws (investment, agriculture, tourism, oil, health, etc.). Despite the 2006 Investment Law (amended), which offers guarantees and incentives, legal fragmentation impedes consistent policy enforcement and investor confidence [(xxv)] .

.2Financial Challenges:

Renewable energy projects are capital-intensive, requiring significant initial investment for technology, infrastructure, and maintenance. Iraq suffers from insufficient financial capacity and access to affordable project financing, increasing investor risk and stalling implementation.

.3Planning Deficiencies:
Lack of comprehensive, long-term energy planning weakens investment prospects. The absence of a unified national strategy prevents rational resource allocation and prioritization of renewable energy projects.

.4Administrative Inefficiencies:
Weak institutional capacity, poor contract management, bureaucratic delays, and corruption hinder project execution. Most government departments lack specialized staff to manage renewable energy initiatives effectively.

.5Oversight Overload:
Iraq has numerous oversight bodies (e.g., Financial Audit Bureau, Integrity Commission, Inspectors General), which often issue conflicting rulings and prolong legal procedures. This climate of uncertainty discourages public officials and private investors alike [(xxvi)] .

.6Lack of Awareness:
Public and institutional awareness of renewable energy benefits remains low. The Iraqi legislator has emphasized the need to promote environmental education and involve civil society in energy transformation.

.7Small Production Scale:
Renewable systems are sensitive to climatic changes, making it difficult to achieve consistent high-volume output. This necessitates either reducing energy consumption or building more facilities to meet demand [(xxvii)] .

.8Climate Dependence:
Renewables are weather-dependent. Hydropower, for instance, relies on rainfall and reservoir levels, while solar and wind outputs fluctuate with atmospheric conditions—limiting predictability and consistency.

.9Land and Storage Limitations:
Solar farms require large land areas, which may not always be available. In addition, energy storage technologies are still limited and expensive, posing challenges for nighttime and seasonal energy use [(xxviii)] .

Fifth: The Impact of Renewable Energy Investment on Sustainable Development
Iraq's energy system relies heavily on fossil fuels, due to the country's abundance of oil and gas. However, investment in renewable energy is key to achieving sustainable development. Economic and legislative policies play a vital role in supporting the renewable energy sector through appropriate planning, incentives, and regulatory frameworks. The key effects of such investment on sustainable development include:

.1Promoting Sustainable Development

Investing in renewable energy contributes to environmental protection and long-term sustainability by reducing greenhouse gas emissions and aligning with the principle of shared global responsibility. Iraqi legislation supports this by calling for the use of renewable energy technologies to reduce pollution. Moreover, the seventh UN Sustainable Development Goal emphasizes "access to affordable, reliable, sustainable, and modern energy for all" [xxix] .

.2Improving Human Quality of Life

Renewable energy investment helps implement development policies that improve living standards and promote economic well-being. It strengthens the link between human activity and the environment, ensuring that nature is treated as a vital system essential to human life.

.3Connecting Modern Technology with Society

Such investments encourage the use of modern technologies to serve societal development goals. Raising awareness about these technologies helps communities adopt and integrate clean energy solutions that improve service delivery without harming the environment [xxx] .

.4Combating Desertification and Supporting Population Distribution

By investing in arid and desert areas, renewable energy helps rehabilitate degraded lands, conserve water resources, and expand green zones. It also promotes balanced population distribution by reducing urban migration and encouraging rural development, particularly in agriculture and infrastructure. Iraqi legislation also mandates the protection of old-growth trees and public green spaces, contributing to environmental sustainability.

.5Solving Economic Problems

Sustainable development investment addresses economic challenges by ensuring secure energy access, stabilizing energy supplies, and reducing exposure to climate change risks. Renewable energy supports diversification and resilience in national economies [xxxi] .

.6**Protecting the Environment**

Renewables contribute to environmental conservation by balancing natural resource use with economic activity. They help reduce pollution from gases, smoke, noise, and other harmful emissions. Furthermore, this energy transition fosters public awareness and strengthens community engagement in environmental protection. Iraqi law requires polluting industries to adopt clean technologies, monitor emissions, and maintain databases to safeguard environmental health and sustainability [xxxii] .

Conclusions and Recommendations

First: Conclusions

1. Despite Iraq's high solar potential and favorable natural conditions in most of its regions, these capabilities remain underutilized for solar energy generation.

2. Investment in solar energy is still limited and relies primarily on individual initiatives or small-scale international partnerships, in the absence of a comprehensive national strategy.

3. The projects implemented so far have partially alleviated the pressure on the electricity grid and provided a portion of the energy needs; however, their economic impact remains limited due to their small scale and lack of sufficient expansion.
4. Solar energy holds genuine potential to support sustainable development by creating job opportunities, reducing emissions, and diversifying income sources.
5. The absence of both legislative and financial frameworks is among the key obstacles hindering the expansion of solar energy investments in Iraq.
6. There has been growing political interest in renewable energy in recent years; however, it still requires concrete implementation on the ground.

Second: Recommendations

1. Develop a comprehensive national strategy for renewable energy that includes specific quantitative targets, clear implementation timelines, and adequate funding sources to ensure its successful execution.
2. Enact clear laws and regulations to govern the renewable energy sector, ensuring the protection of investors' rights and enhancing transparency in both investment and administrative processes.
3. Provide financial and tax incentives to encourage the private sector to invest in solar energy projects, particularly in industrial and agricultural areas.
4. Establish a national fund to finance renewable energy projects in partnership with international financial institutions.
5. Integrate solar energy into local development plans and link it to key development projects such as housing, agriculture, and the industrial sector.
6. Implement training and capacity-building programs for Iraqi personnel in the fields of design, installation, and maintenance of solar energy systems.
7. Strengthen regional and international cooperation to facilitate technology transfer and share expertise in the renewable energy sector.

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[xxxi] عرف المشرع العراقي البيئة على أنها " المحيط بجميع عناصره الذي تعش فيه الكائنات الحية والتأثيرات الناجمة عن نشاطات الأنسان الاقتصادية والاجتماعية والثقافية". انظر نص المادة (١) من قانون وزارة البيئة العراقي رقم (٢٧) لسنة ٢٠٠٨.

[xxxii] المادة (٩/أولاً ثانياً -ثالثاً) من قانون حماية وتحسين البيئة العراقي رقم ٢٧ لسنة ٢٠٠٩.