



# **SOCIAL CHANGE STRATEGIES IN IRAQ: ADVANCING ENERGY-EFFICIENT TECHNOLOGIES IN THE OIL SECTOR ECONOMY.**

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A photograph of an industrial facility, possibly a refinery or chemical plant, with various pipes, towers, and structures. The scene is set against a sunset sky with warm orange and yellow tones. The word "Summary" is overlaid in large white text on the left side of the image.

# Summary

In this study, a link is made between the most important fields of energy, pollution, and the economy in Iraq, which affects several aspects, including human health increases and becomes according to the safety and cleanliness of the environment in which he lives Therefore, the more pollution there is in the environment in which a person lives, the more vulnerable he becomes to danger. Hence, environmental pollution, which has unfortunately become accelerating in our environment today, for several reasons There are many issues, most notably technological acceleration and excessive use of natural resources The terrible emissions of gases and fumes from factory towers have caused major pollution in the environment. This has ruined the quality of life and has become the greatest danger facing the world, whether industrial or non-industrial because pollution passes through all countries. There are no Limits to preventing it, and hence it is necessary to confront this great danger coming to our world naturally, in parallel with the progress in technology and the revolution in production, to survive Humans live in a safe environment. Therefore, the green economy cares at its core by reducing and preventing pollution, if possible

## **The Importance of Research**

Supporting the basic aspects of the green economy to achieve sustainable development by trying to determine the real values of the benefits provided by the environment to society and the costs associated with environmental degradation, in addition to that it includes developing market mechanisms, combating pollution, issuing licenses that can be traded and providing a measurement pattern that includes green national accounts through preparing the gross domestic product and changes in the ecological stock within the gross domestic product.





# Objective of the Research

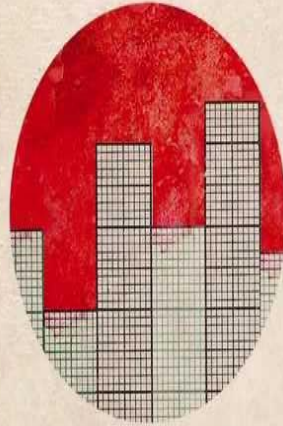
The research aims to see the role of the green economy in achieving sustainable development in light of the goals set for it by the United Nations for the environment, increasing economic growth and depleting natural resources and the ecosystem. Green Economy Strategy In conclusion, we present the proposed conclusions and recommendations.



## Research Hypothesis

The research states the hypothesis that the green economy has an important and vital role in enabling indicators of sustainable development and the extent of the impact of carbon emissions on the gross domestic product.

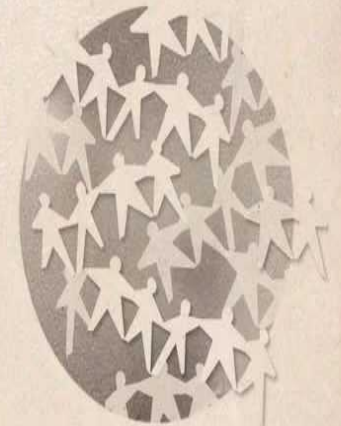
# GREEN ECONOMY=



**LOW CARBON  
GROWTH**



**RESOURCE  
EFFICIENCY**



**SOCIAL  
INCLUSIVITY**

# =SUSTAINABLE DEVELOPMENT?

In this research, we will discuss in the first section the concept of environmental pollution and its definition, the degrees of pollution that exist, the dangerous forms of pollution to which the environment and humans are exposed, and the relationship between environmental pollution, social changes, and the green economy. As for the second topic, we will discuss the impact of environmental pollution on the Iraqi economy through a reality study of environmentally friendly economic sectors and sectors characterized by a high degree of contribution to environmental pollution and which sectors the economy supports



As much as we are researching environmental pollution and its impact on nature, life and everything else

In its various forms, environmental pollution occurs when the environment is unable to treat or neutralize the products

Harmful accidents resulting from human activities (radiation, toxic gases, waste...

Etc.) at the right time and without any harm to the ecosystem, and the right time means that it may

In some cases, contamination lasts for several days, months or years and may extend to...

1 thousands of years





# The most important effects of pollution



**human health**



**Food sector**



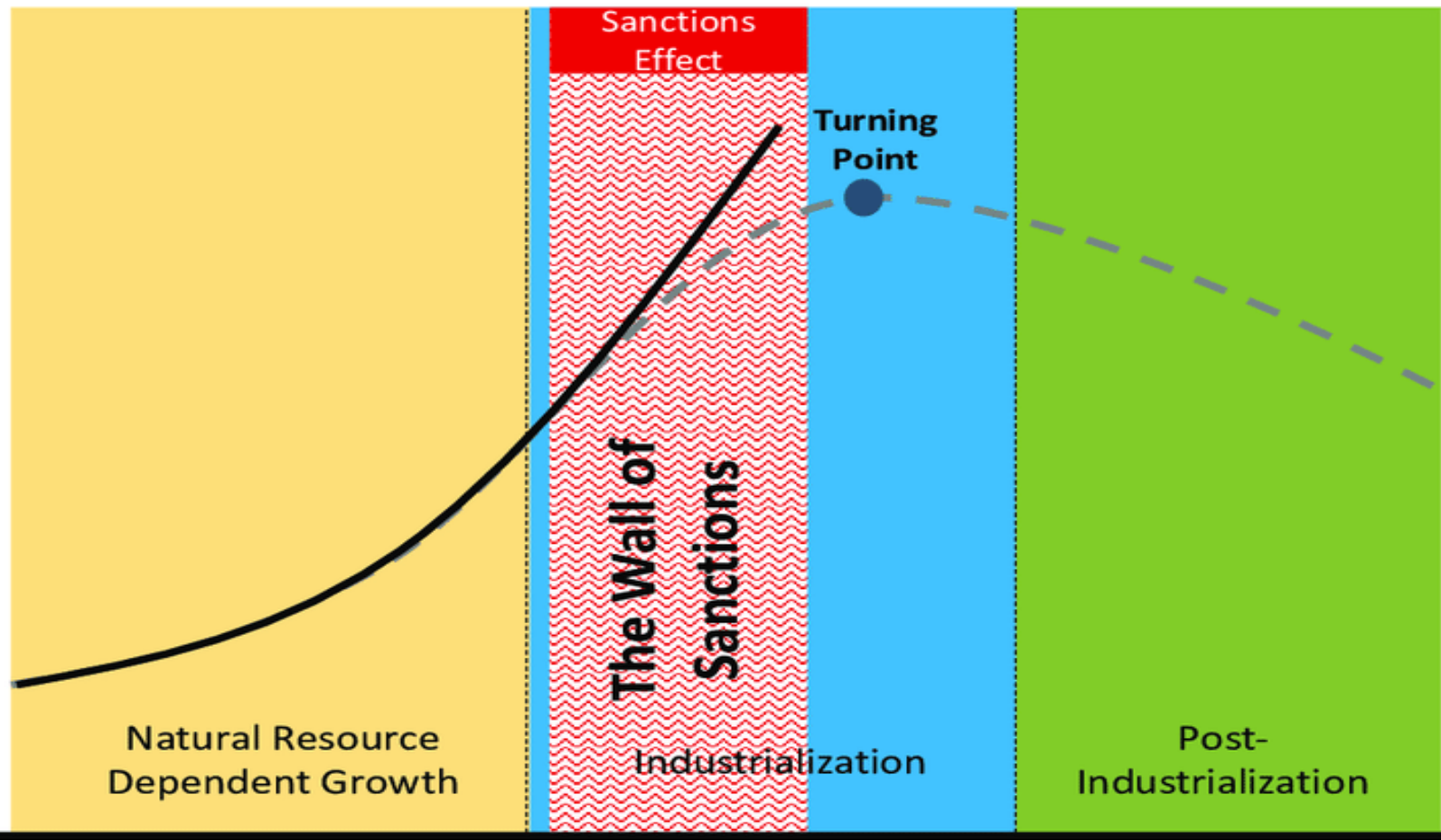
**Global Warming**



**Economic**



Environmental Degradation



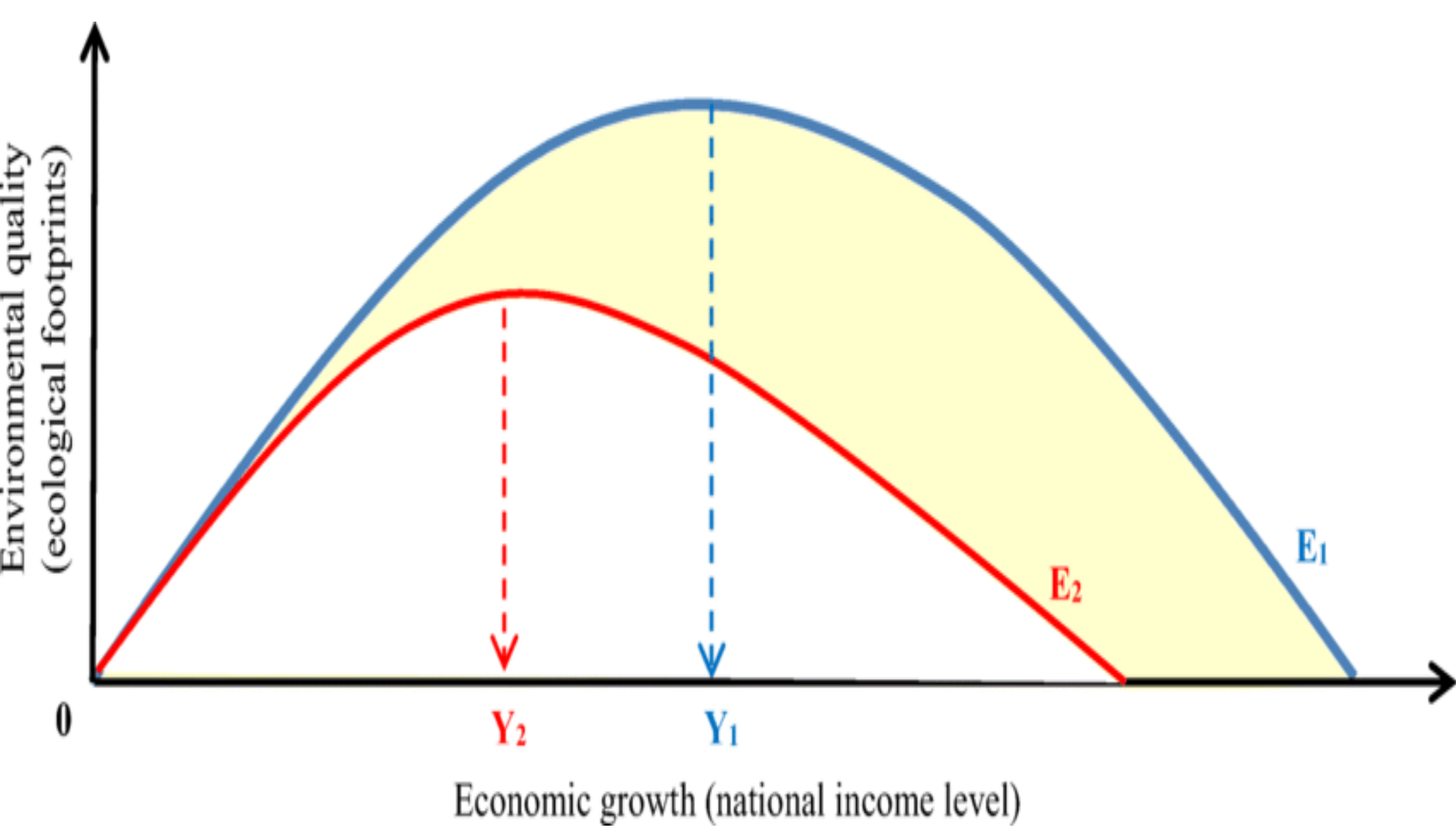
Economic Growth

Energy sector (oil, gas, electricity, transportation):

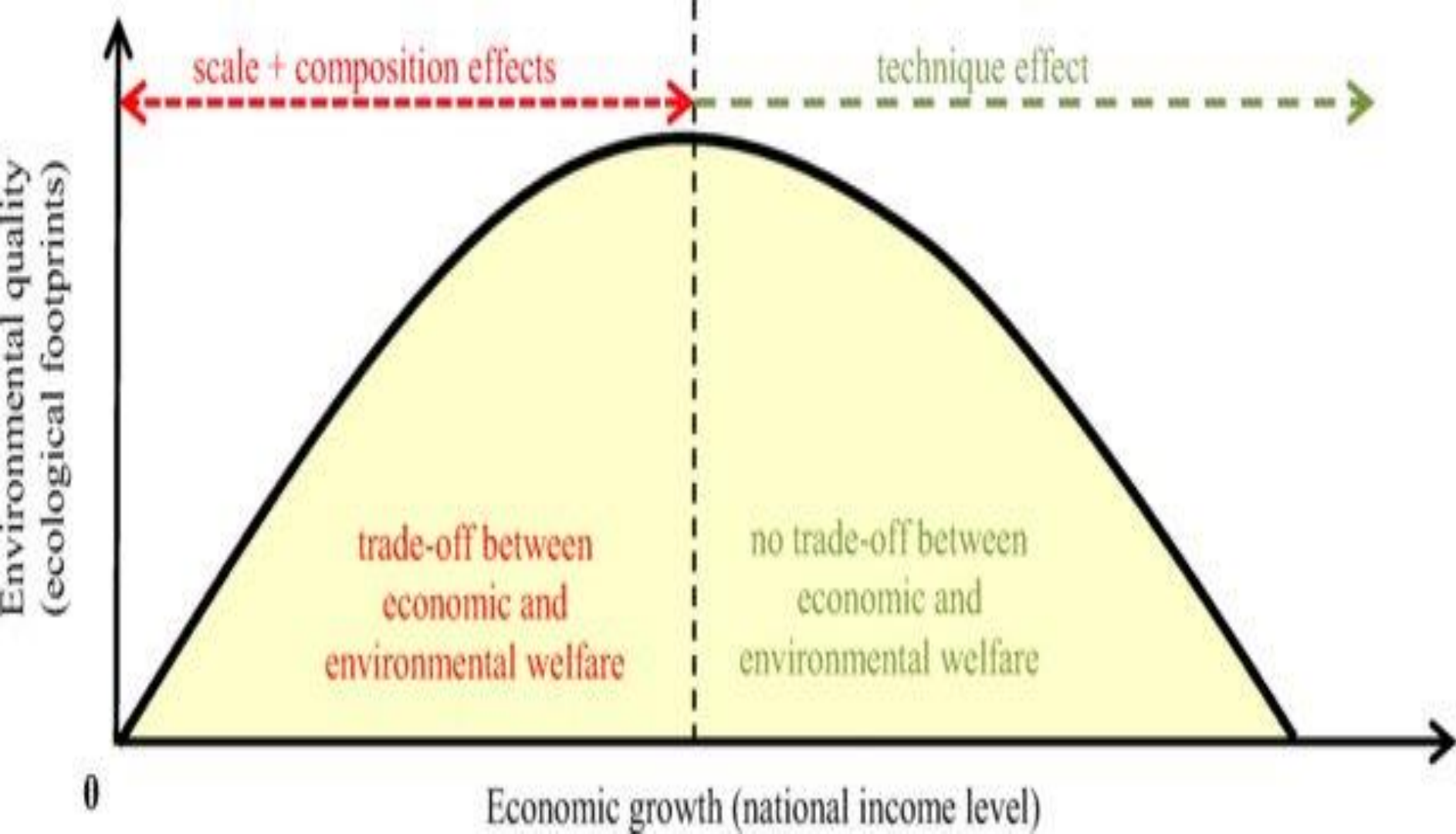
Through this vital sector, Iraq seeks to voluntarily reduce its emissions, as the highest rate of greenhouse gas emissions results from this sector, according to what was stated in the first national communication document. It contributes 75% of Iraq's total emissions, so the following measures to reduce the emissions of this sector will be: Feasible from a development standpoint:

- Reducing the levels of associated gas burning and investing it in oil and natural gas extraction operations.
- Investing in and developing the petroleum industries to reduce resource depletion and reduce emissions at the same time, especially improving and monitoring associated gas combustion technology to reduce methane emissions and avoid gas “venting” through good design, including through gas recovery and recycling.
- Conducting programs to periodically detect methane leaks in oil and gas facilities for the purpose of repair (LDAR) in cooperation with international partners (Global Methane Alliance (GMA)) and oil and gas companies operating in Iraq.
- Using combined cycles to increase electrical energy production
- Changing the type of liquid fuel to gaseous fuel in electric (gas) power production stations and improving the quality of the fuel used in a way that contributes to reducing carbon emissions.

- Reducing emissions by adopting mechanisms to improve energy efficiency and rationalize consumption.
- Converting heavy fuel power stations to using liquefied petroleum gas (LPG) and dry gas, which can be saved by capturing associated gas and reducing methane emissions.
- Using hydroelectric energy, which is considered a clean source of energy.
- Using carbon capture and storage techniques (CCS) or carbon capture, storage and use (CCUS) to reduce carbon emissions and benefit from it in industrial processes.
- Localizing renewable energy technology, especially with regard to solar energy, due to Iraq's strategic location, which is considered a promising area for localizing this type of technology.
- Using advanced and sustainable public transportation and environmentally friendly technologies, such as the establishment of the sky train project, and the gradual shift towards sustainable transportation.
- Gradual shift towards hybrid and environmentally friendly vehicles.
- Using aircraft with more fuel-efficient engines and a more effective operating system.
- Reviewing and updating current laws and identifying the need for new laws regarding trade, industrial investment, and customs tariff laws.
- Producing electrical energy from wind in promising areas, especially in the Kurdistan region.
- Supporting the private sector's participation in developing the public transportation system according to participatory mechanisms with the public sector.







## **Conclusions and future perspective**

- 1-Work to invest in natural gas associated with crude oil production to avoid or reduce its burning by partnering with global companies to produce dry gas liquid gas, natural gasolin and sulfur, work is being done to complete the rehabilitation of dry gas transportation networks and increased capacity to meet the growing need for plants invading electric power.
- 2-Develop the refining industry and increase liquidation capacities to meet the need for domestic consumption from oil derivatives and improving their quality to global specifications, strive to develop existing refining centers to increase their efficiency and establish oil refining centers large cards within the latest technology for domestic consumption and export.
- 3-Increase environmental awareness and build an information base on pollutant impacts and reduction during the application of laws and legislation in force and the enshrinement of the concept of environmental conservation as well as reviewing oil sector development projects to verify their completion for local and international environmental requirements
- 4-Reducing energy waste by increasing energy efficiency and rationalizing consumption
- 5-Keeping abreast of global developments in the areas of new and renewable energy

# Thanks For Listening

