SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

COIMBATORE-35

Accredited by NBA-AICTE and Accredited by NAAC – UGC with A+ Grade

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

COURSE NAME: 19EEO305 /Renewable Energy Generation Technology

III YEAR / VI SEMESTER

UNIT 1- SCENARIO OF RENEWABLE ENERGY

Topic 5 – Sustainable design and development

SUCCESSFUL STUDENT

Positive Attitude

Professionally Groomed

Socially Interactive

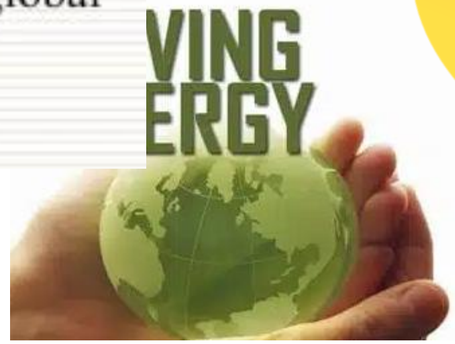
Technically Skillful

Introduction

- The energy systems can be an important reason of environmental impact for both developing and developed countries.
- Thus, a sustainable global energy system should provide to optimize efficiency and limit emissions.
- The technology and the global economy must also develop in harmony with a sustainable and steady development.

Contd..

- As the consumption of energy, especially from fossil fuels, increases, the global environmental problems are inevitable.
- Both developed and developing countries plan to enable the most appropriate energy systems and improve human, economic, social and environmental conditions for sustainable development.
- At present, there can be several challenges such as demographic, social, economic and technological trends for the long-term sustainability of the global energy systems.



Contd..

- As concluded in to obtain sustainable energy systems, vigorous action should be mostly taken in the areas of energy diversity and efficiency, supply reliability, public trust, market-sensitive interventions, market-based climate change responses, cost reflective prices, technological innovation and development and regional integration of energy systems.
- Government policies should be carefully planned for the production, replacement, transportation, distribution and usage of energy.
- Due to the energy-related environmental problems and challenges, countries should aim to protect the climate system, improve their policies and implement related preventions.

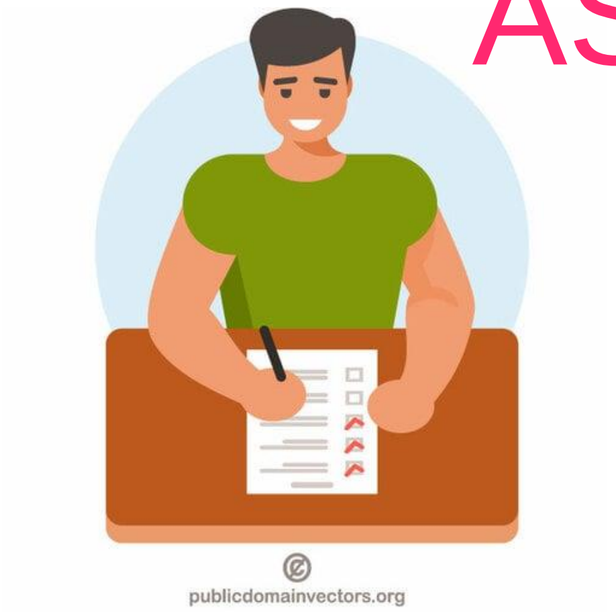
Contd..

- Dependence on conventional fossil resources, which is mostly produced in politically unstable countries, the current energy supply and use are highly unsustainable.
- To meet the present and future demands for improving conditions such as human, economic, social and environmental fundamental changes in technologies will be required everywhere. Some topics such as innovation, investment, work, organization and leadership should be taken into consideration.
- There are three groups of critical factors shaping the energy future which are the global politics and economic situation, technology and energy policy and market development.

Contd..

- To ensure the energy need of a country, the environment, cultural heritage and rich natural sources should be applied.
- On the other hand, energy generation, transmission, distribution and trade should be also supported by using standardized equipment and materials.
- Although the use of coal creates risks in local environmental pollution and greenhouse gas emissions, it somehow increases energy security.
- Carbon dioxide emissions per unit power at the point of use are high for coal. However, resources, such as coal and gas, will remain important.
- Diversification and utilization of the country's resources are always the key components that ensure sustainability and low-cost energy supply.

ASSESSMENT



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2. G.N. Tiwari, ‘Solar Energy – Fundamentals Design, Modelling and applications’, Narosa Publishing House, New Delhi, 2002. (UNIT II)

3. S.M. Muyeen,” Wind Energy Conversion Systems: Technology and Trends”, Springer 2012. [UNIT III]

Text Book:

1. G.D. Rai, ‘Non Conventional Energy Sources’, Khanna Publishers, New Delhi, 2006. (UNIT I - V)

2. D.P.Kothari, K.C.Singal and Rakesh Ranjan,”Renewable energy sources and Emerging Technologies”, PHI Pvt. Ltd., 2009. (UNIT I-V)

THANK YOU!!