



**Department of Mechanical Engineering,  
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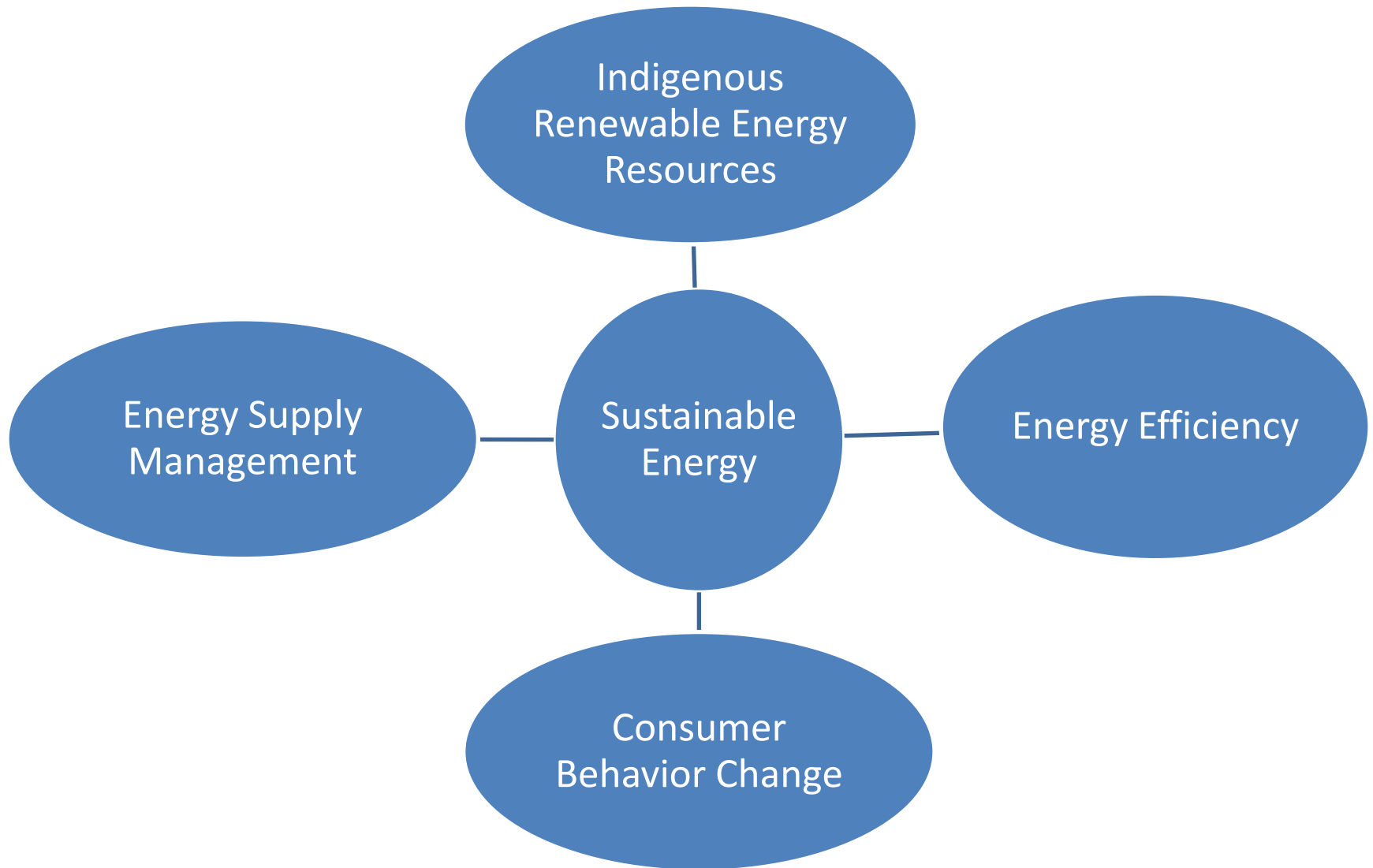
**Sustainable Energy Technologies  
(Session 3)  
Sustainable Energy**

**Dr. Shree Raj Shakya  
2016**

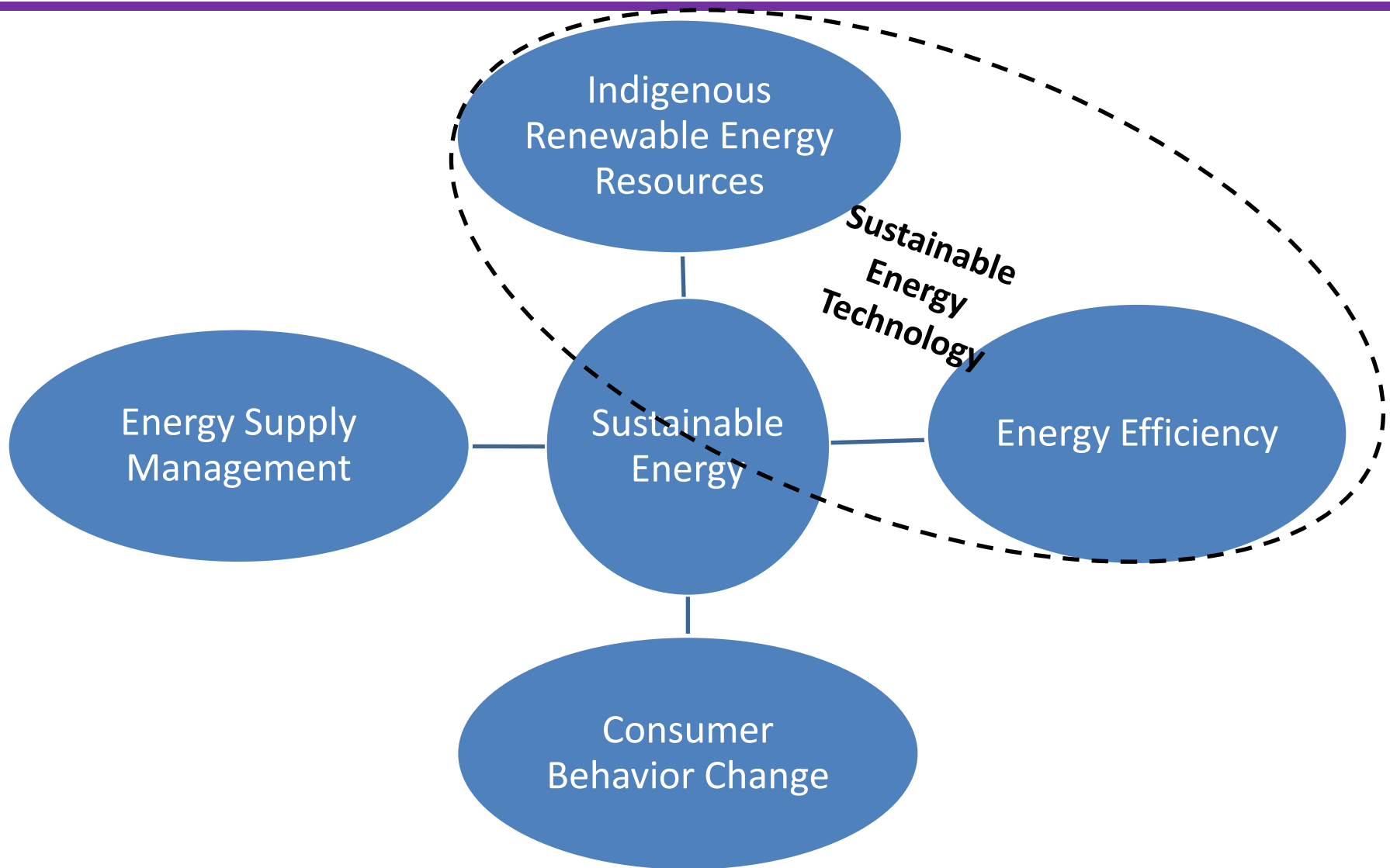
# Sustainable Energy

- **Sustainable energy** is energy obtained from non-exhaustible resources. By definition, sustainable energy serves the needs of the present without compromising the ability of future generations to meet their needs
- Technologies that promote sustainable energy include **renewable energy sources**, such as hydroelectricity, solar energy, wind energy, wave power, geothermal energy, bioenergy, tidal power and also technologies designed to improve **energy efficiency**.
- Costs have fallen dramatically in recent years, and continue to fall. Most of these technologies are either economically competitive or close to being so.
- Increasingly, effective government policies support investor confidence and these markets are expanding. Considerable progress is being made in the energy transition from fossil fuels to ecologically sustainable systems, to the point where many studies support 100% renewable energy
- **Sustainable Energy Development can be achieved by adopting sustainable energy technologies in the generation side and also promoting smart management of the sustainable energy available.**

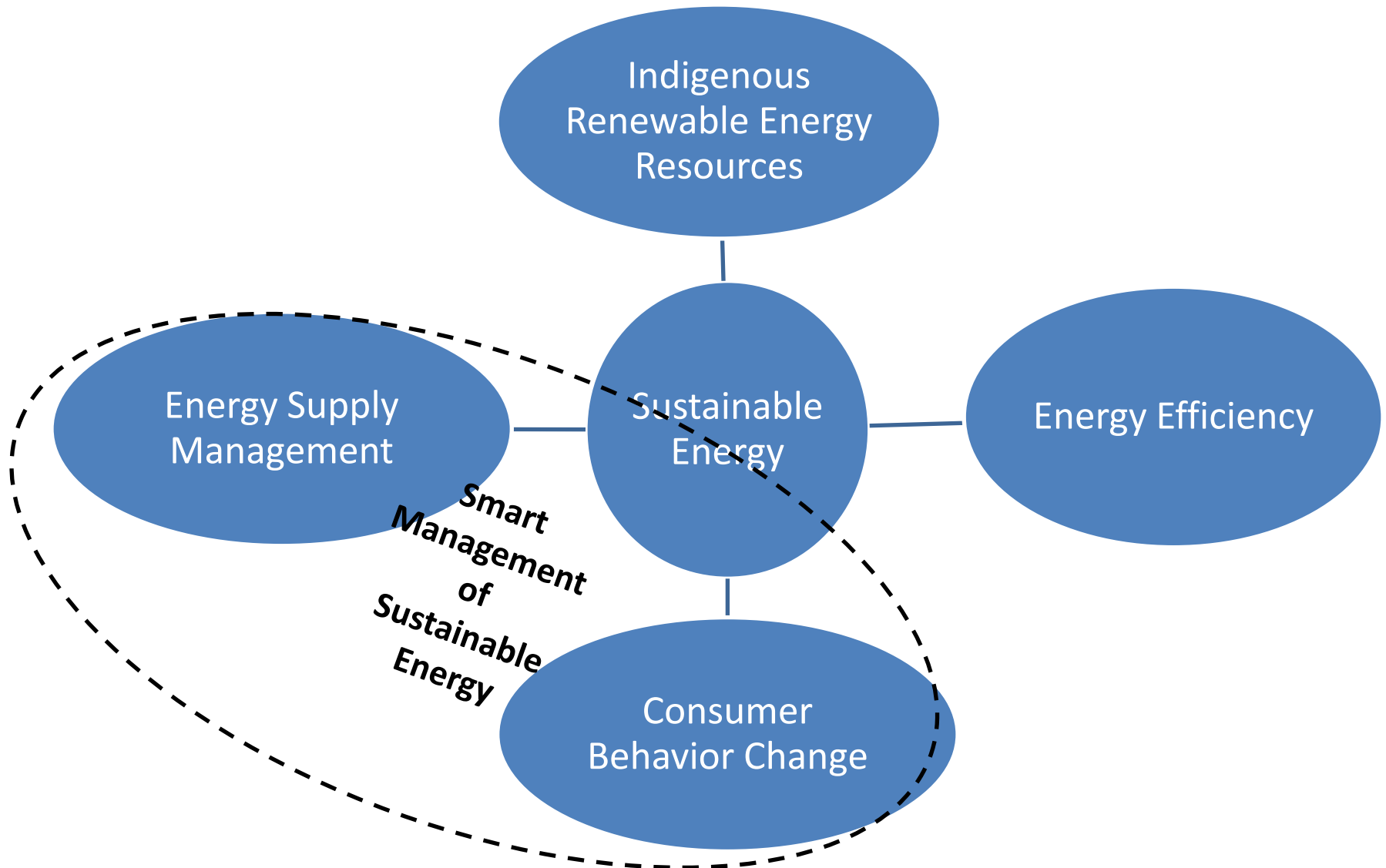
# Options for Sustainable Energy Development



# Options for Sustainable Energy Development



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# See these references

## ROLE OF RENEWABLE ENERGY TECHNOLOGY IN CLIMATE CHANGE ADAPTION AND MITIGATION IN NEPAL

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### ABSTRACT

Despite having only 0.025% of total GHG emissions in the world from the context of climate change temperature increase of 0.06°C. It has been found economic and environmental benefits to people the climate change based on the local context. They can vulnerability of people, improving adaptive capacity without challenges either. Financial, technical, and promote RETs. This studies shows that theoretically can be mitigated per year if all the remaining technologies, improved water mill, stand-alone micro-hy systems, mud-ICS and metal-ICS were installed after RETs, altogether 30.71 million tons of CO<sub>2</sub>e can be additional installation equal to average installation investment required for implementing above mentioned CO<sub>2</sub>e mitigation. This indicates that though moderate the GHG mitigation potential seems to be quite good case for a triple win strategy to address a compatible development in Nepal.

*Key words:* adaptation to climate change, mitigation vulnerability, climate risk, technology investment cost

### 1 INTRODUCTION

Despite having only 0.4 percent of the total global total GHG emissions in the world, Nepal is one of climate change. Nepal has experienced an average identified that climate change has impacts on different areas, vulnerabilities to energy resources can also be resources (due to degradation in land use patterns, and that climate change has implications to the current a well.

On the other hand, the reinforcement of adaptation shift toward a low-carbon energy pathway – but production and consumption patterns – that would lessening the level of its GHG emission increases. It country to support adaptation and enhance development with emphasis on the introduction and use of environmental sustainability and improved social contribute to both climate mitigation and adaptation

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### Energy Efficiency Improvement Potential of Nepal

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**Thank you !**