INTRODUCTION
Day by day environmentally clean and less harmful sources of diesel fuel for conventional engines are becoming more and more popular because of global warming problems, high level of pollution of the atmosphere created by devices and increased expansion of human diseases. There are various sources of such non-harmful diesel fuels, like ethanol and biodiesel which can be obtained from diverse vegetable oils and animal fats. The cost effective production of biodiesel provides an alternative fuel to customers, the study focuses on determining the cost of production of biodiesel and there by identifying the areas for reducing the cost. In addition to this the study also aims at financial analysis of bio diesel plant. The project’s validity and profitability will be analyzed based on the Investment Appraisal.

KEYWORD
Biofuel, biodiesel, biodiesel plant, financial analysis, capital on investment, operating cost, interest on capital, cash flow, funds flow.

RESEARCH QUESTIONS
- RQ1: What is the status of the bio-fuel production in Bangalore?
- RQ2: How much cost is incurred for setting up a biodiesel plant?
- RQ3: Does government provide subsidy for equipment's?
- RQ4: How much waste oil is produced every day in Bangalore?
- RQ5: How economical could bio fuel be for commercialization?

OBJECTIVES
- To analyze the capital investment required for setting up a biodiesel plant.
- To perform financial analysis for determining profitability and its sustainability of the biodiesel plant.
- Cost incurred at each stages of the biodiesel production.
- Identifying the areas for reducing the cost.
- Evaluate the cost effectiveness of biodiesel production.

**METHODOLOGY**

This project includes two methods they are as follows:

1. Primary method
2. Secondary method

**Primary method:**

This method includes collecting the data through survey by questionnaire method.

- During the in plant study of various biodiesel plants located across Bangalore city, the information was collected through various sources like professionals and employees of the biodiesel plants.
- In addition to this, information was collected from Government agencies and authority associated with biodiesel ministry.

**Secondary method:**

- The data was collected from the biodiesel development board.
- The profitability analysis is done using techniques like comparative analysis and BEP
- The investment appraisal will be done using capital budgeting techniques such as NPV, IRR and so on.
- Cost analysis was performed using process costing method.

**LIMITATIONS OF THE STUDY**

- Time was the big constraint in carrying out of this research since the funding agency has set the time bound.
- Lack of information about the availability of waste cooking oil.
- Study was limited to biodiesel plants located in Bangalore city only.
- Many of the industrialists are not co-operating and not willing to share the information.

**RESULTS AND CONCLUSION**

**Results**

- From the study we have analyzed the capital investment required for setting up the biodiesel plant.
- We have made comparative analysis of both seed and waste cooking oil in biodiesel production and as per the results we understand that biodiesel from waste cooking oil is more economical and can be commercialized
- We have calculated the cost incurred at each stage of the biodiesel production
- In production using seeds consist of more stages when compared to production using waste cooking oil. It consist seed crushing process because of which the total cost of producing biodiesel from seeds increases
- Where as in producing biodiesel from waste cooking oil directly goes into transesterification unit. Hence there is reduction in the total cost of biodiesel
- We have studied about the areas of cost reduction they are:
  - Feedstock can be replaced by waste cooking oil.
Getting subsidy for the equipment’s used in production process.
PROCurement of waste cooking oil directly from hotels
- Using capital budgeting techniques such as NPV and also breakeven point analysis, we have found the cost effectiveness of biodiesel production

Conclusion

The results of the cost–benefit analysis are first presented separately. The cost–benefit stream for the vegetable oil. The base case provides a 13.61% economic internal rate of return (EIRR), which is higher than the Indian government’s cutoff rate of 12%. At a 12% social discount rate, vegetable oil provides a positive net present value (NPV).

This project discusses the financial and economic aspects of biodiesel production in Bangalore. The project may clearly demonstrate that biodiesel is economically viable, and can generate sizable employment opportunities despite its financial non-viability under the present administered pricing scheme. If production is limited to wasteland, the food sector will not be adversely affected. However, the biodiesel sector will not take off, even with all these advantages, unless the government intervenes to correct market and nonmarket failures that prevent the biodiesel markets from developing. Government interventions may include research on the agronomy of oilseed plants, the allocation of wasteland, the establishment of a dedicated agency for biodiesel, and the provision of an incentive package for private investors and small-scale producers.

FUTURE SCOPE OF THE STUDY

Study is confined to biodiesel plants located in Bangalore city. This project can be implemented in the biodiesel plants and it can be extended to other cities also. Current energy systems need a vast transformation to meet the key demands of the 21st century: reduced environmental impact, economic viability and efficiency. An essential part of this energy revolution is bioenergy. Biofuels provides a forum for all stakeholders in the bioenergy sector, featuring review articles, original research, commentaries, news, research and development spotlights, interviews with key opinion leaders and much more, with a view to establishing an international community of bioenergy communication. As biofuel research continues at an unprecedented rate, the development of new feedstocks and improvements in bioenergy production processes provide the key to the transformation of biomass into a global energy resource. With the twin threats of climate change and depleted fossil fuel reserves looming, it is vitally important that research communities are mobilized to fully realize the potential of bioenergy.

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