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Innovative green business practices adopted by Indian oil

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ABSTRACT

To find out how Indian oil company contributes towards sustainable environment. To know what innovative steps are followed by the company. In our research paper both primary and secondary information will be used. In primary method a survey will be conducted through Google forms. The time limit to complete the paper will be 15-20 days. We have referred 2 research papers. Our research paper is based on dependent variables. As data used will be from the website of Indian oil. Findings are, we got to know that how Indian oil company takes utmost care to protect the environment and what steps does the company follows to go green. Our basis purpose to conduct research on a petroleum-based company was, as in today's world petroleum is the most used substance. As we know how these products harm the nature. We wanted find out how these big, petroleum-based company takes precaution to save as well as keep our environment clean.

Keywords: sustainable environment, go green, protect, precaution, clean

INTRODUCTION

“SUSTAINABILITY IS NO LONGER ABOUT DOING LESS HARM, IT IS ABOUT DOING MORE GOOD”

- JOCHEN ZEITZ

1.1 What is a 'GREEN BUSINESS'?

'Green businesses also called as 'SUSTAINABLE BUSINESS'. It means the companies are socially and naturally capable within the way they source and fabricate items and run their operations and facilities. Takes care of their workers. Protects their clients and clients with secure, reasonable exchange products. Reduce their carbon impression with vitality productivity and clean energy. It doesn't contaminate the water, soil with their commerce practices. It also includes actively decrease, reuse, and squander they produce. To add wellbeing of the community by supporting causes that increment supportability and resiliency. A sustainable

business is a business that takes environmental concerns into account when making business decisions, and they usually have progressive environmental and human rights policies. The four criteria for being a sustainable business are that the business incorporates sustainability principles into each of its decisions. They provide environmentally friendly products or services that replace demand for non-green products and services, that they are greener than traditional competition. They have made an enduring commitment to environmental principles in their business operations.

This research paper looks on how Indian Oil Corporation Ltd manages to maintain the biodiversity.

CHAPTER 2: REVIEW OF LITERATURE

- ✓ John R. Rathgeber (2007) has said that in his research that many business leaders are embracing corporate Sustainability and Green Business practices as a way to improve their operations and enhance their competitiveness.
- ✓ According to Justin Victor (2008) in his research one half of HR professionals indicated that their organisations have a formal or informal environmental responsibility policy. Top three green business practices reported by HR professionals were encouraging employees to work more environment friendly, offering recycling programs and donating/ discounting used furniture supplies.

CHAPTER 3: RESEARCH METHODOLOGY

3.3.1 OBJECTIVES

Now-a-days oil and gas companies are strengthening their sustainability commitments. These industries are looking for clean tech innovations to find the best ways to successfully pivot toward this future energy vision. The world is setting targets for lower carbon emissions and a greater presence of renewable in their national energy mixes. Like other oil industries Indian Oil Corporation Ltd is also experimenting and succeeding with a growing number of technologies and solutions that are assisting them in becoming more sustainable, reducing the costs.

The following are some of the objectives:

- ✓ To reduce its operational emissions, conserve water, manage waste, offer green fuels.
- ✓ To protect the environment.
- ✓ To build low carbon future.
- ✓ To demonstrate environmental stewardship.
- ✓ To manage waste water in refineries.
- ✓ To look after waste management techniques.
- ✓ To find technical measures of control and monitor emission in the air.
- ✓ To find ways for biodiversity protection.

3.3.2 HYPOTHESIS

It is an exploratory frame of investigation. The examination is free and adaptable with theory. In our research both primary as well secondary method is used. A survey was conducted under primary method, while information from various sites was considered. 2-3 other research paper was also considered.

H₁ – Indian Oil Co. does not practice green business.

H₀ – Indian Oil Co. does practice green business.

In our research, we have observed that 66.70% of respondents believe that Indian Oil Corporation well advanced in protecting the environment. While 33.30% has to say that the company being a petroleum-based company so it might be not look into the factor of protect the nature.

3.3.3 SCOPE OF STUDY

1. Only 33 respondents are used in the study, which has primary and secondary data.
2. The respondents are from various age groups, occupations etc.
3. The data was gathered by the way of survey.

3.3.4 LIMITATIONS TO STUDY

- ✓ The sample size was less because of which an effective decision could not take place.
- ✓ The survey questions were shared through a link but many did not participate.
- ✓ We had less time to work on it.
- ✓ The study is limited to Mumbai residents only.

3.3.5 DATA TABULATION

It was done with the help of Google forms. This site helped us in creating the questions in a systematic way. The link was passed on to the general public. Their responses can be easily represented with the help of pie charts through this site.

DATA ANALYSIS

1.1 PURSUING NET ZERO

The Company has set up a well-crafted blueprint in place. Indian Oil has adopted a multi-pronged approach to reach its net zero target by 2046. The Company is pursuing a robust green agenda for some time now to steer the country's energy transition, working on solutions like green hydrogen, bio fuels, renewables, nature-based solution, clean fuels and Carbon Capture Utilisation and Storage (CCUS), among others.

4.1.1 THE COMPANY 2021-2022 REPORT FOCUS ON:

- ✓ Carbon Inventory
- ✓ Climate Goals
- ✓ Renewable Energy
- ✓ Green product mix
- ✓ Low carbon tech
- ✓ Value chain emissions
- ✓ Transformative leadership

The goal of the company is to pursue NET ZERO OPERATIONAL EMISSIONS by 2046. The report says that the company is taking efforts to reduce the impact of the emissions majorly done by the refineries and petrochemical. Indian Oil has various plans to transit a net zero future with their modernising their technologies and learning from their ongoing mitigation efforts. The emissions of the company are at 24 MMTCO₂e and it is expected to reach 40 MMTCO₂e. So, to mitigate these emissions plans like ENERGY EFFICIENCY, FUEL REPLACEMENTS, RENEWABLE ENERGY, SHIFTING TO GRID ELECTRICITY are undertaken.

4.1.2 Sourcing renewable power

- ✓ To increase grid import- the company is expanding the grid power to overcome the problem of electricity for refineries and petrochemical plants. They are also shifting from engine driven pumps to electric motor pumps in pipeline locations.
- ✓ To incorporate green hydrogen- the refineries consume major hydrogen in the process which increases carbon emissions. So, the company is gearing up for 5KTA & 2KTA GREEN HYDROGEN PLANTS at Panipat and Mathura refineries
- ✓ Carbon capture- Indian Oil co. Is setting up carbon capture plants for oil recovery which will lead to permanent sequestration of CO₂.

4.1.3 GREENER FUELS IN PRODUCT MIX

Over 3cr customers fuel their vehicles from Indian Oil retail outlets. The emissions of energy consumption contribute 75% of global emissions. 258 MMTCO₂e (EMISSIONS FROM USE OF SOLD PRODUCTS) So as an integrated energy solution company they have found ways such as

CLEANER FUELS → improving automotive fuels, greener lubricants, LPG.

RENEWABLE ENERGY → compressed biogas, bio fuels & methanol blended fuels, solar and wind power. (10% ACHIVED)

ELECTRIFICATION OF ENERGY → green hydrogen, electric vehicles charging.

NATURAL GAS → PNG, CNG, LNG (5.68 MMT- SALES)

To develop low carbon energy solutions the company invests in technologies and finding partnerships. They are into process of finding alternate energy to decreases the carbon emissions. Services like electric vehicle charging are set up in many areas. They support start-ups and hydrogen economy. Rest 577 Cr is R&D expenditure.

4.2 WATER MANAGEMENT

Indian Oil Co. Needs water for production purposes. The 70% of water requirement is sourced from surface water, ground water, or municipal water. In which 90% is used by refining and petrochemical plants and 80% is taken from rivers, canals etc. Efforts are taken towards minimising the usage of fresh water:

- ✓ Water use efficiency
- ✓ Water conservation
- ✓ Discharge water quality
- ✓ Monitoring the health of source water
- ✓ Maximise the use of treated waste water
- ✓ Rainwater harvesting

4.2.1 WATER RECYCLING → 90% of the treated water is used in refineries. Further the processed water is used as a feed for demineralisation plants or as a makeup for cooling towers. 32% of Indian Oil total water requirement is currently met through waste water recycling. The 21-22 reports say that 51.35 billion litres of WASTE WATER were generated as compared to 20-21 which was 43.22 billion litres. And WASTE WATER RECYCLED was 46.61 billion litres in the year 21-22 as compared to 20-21 which was 37.95 billion litres.

4.2.2 RAINWATER HARVESTING → Indian Oil has installed many watershed projects in their locations which helps them to many minimum use of fresh water. This project helps them to increases the ground water level. The report says that 7.46 billion litres of rainwater was collected in the year 21-22. They have planted this projects in area more than 2800 Ha which is about 8% of the company's present fresh water.

4.3. BIO-DIVERSITY AND ECOSYSTEM CONSERVATION

4.3.1 Indian Oil Co. Not only works for profit motive but also seamlessly works to protect the environment. Efforts made by in these field are:

- ✓ Afforestation
- ✓ Protecting coastlines
- ✓ Wildlife conservation
- ✓ Valuing marine ecosystem
- ✓ Terrestrial biodiversity

4.3.2 In BIODIVERSITY CONSERVATION the co. Has truly worked on

- ✓ Rhino adoption
- ✓ Cheetah restoration
- ✓ Olive ridley turtles
- ✓ Saving elephants

4.3.3 In ECOSYSTEM RESTORATION they have found ways like:

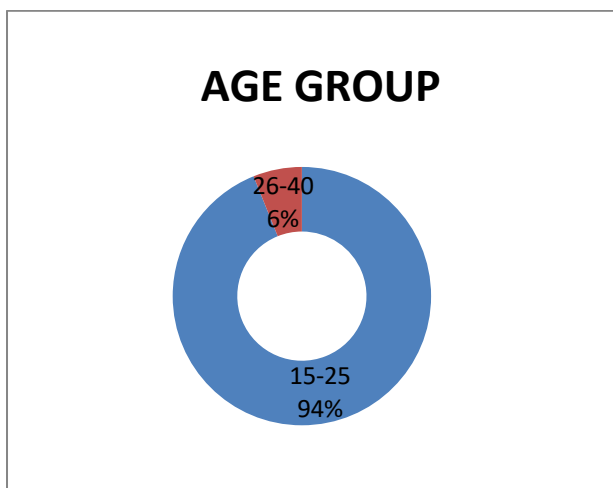
- ✓ Thriving green belts
- ✓ Flourishing birds
- ✓ Translocating corals
- ✓ Coastal protection

4.4 REDUCE, REUSE, RECYCLE

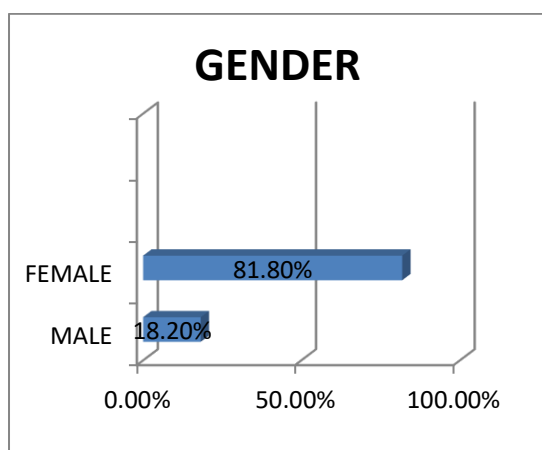
90% of the waste is diverted from the landfills. Indian Oil has been adopting various methods to reuse the waste generated by them. They separate the hazardous & non-hazardous waste and divert the organic & plastic garbage for recycling and reuse. The report says that in the year 21-22 over 5,51,526 Mt waste was **generated**, where in 507465 Mt was **recycled** and 14792 Mt of waste was **disposed**. Indian Oil divides waste as HAZARDOUS & NON-HAZARDOUS.

<u>HAZARDOUS WASTE</u>	<u>NON- HAZARDOUS WASTE</u>
a) Oily sludge & slop oil	1) organic waste
b) Spent catalyst	2) waste paper
c) Bio medical waste	3) plastic waste
d) E- waste	4) ferrous scrap & other recyclables

4.5 The survey we did regarding our topic has the following analysis:



The figure says that, 94 % respondents are from the age group of 15-25 and 6% are from 26-40. The more responses are from the young age group.

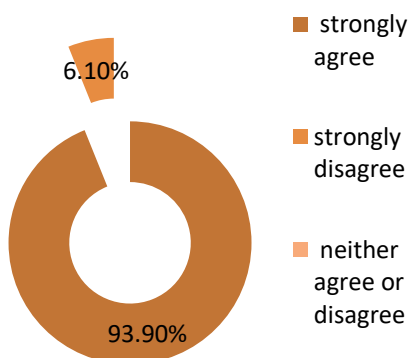


The bar graph says that, female respondents are more than male respondents, where females are 81.8% and males are 18.20%



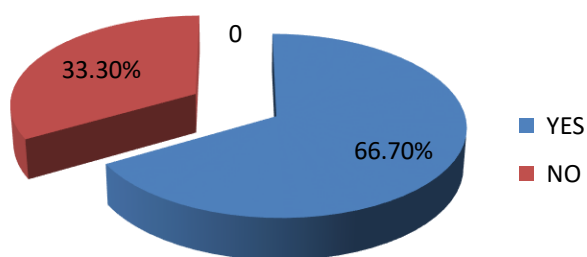
The pie diagram suggests that, respondents are responsible and maximum percentage make their purchase from environmentally friendly companies.

Do you think that co. should choose the materials that produce least amount of pollution for making the products?



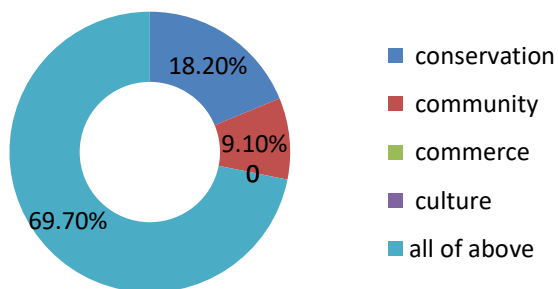
Here, the respondents strongly agree that all the companies producing a variety of products should use the raw materials which does not harm the biodiversity and same as the final product should also do.

The Indian Oil co. is well established about environment concern ?



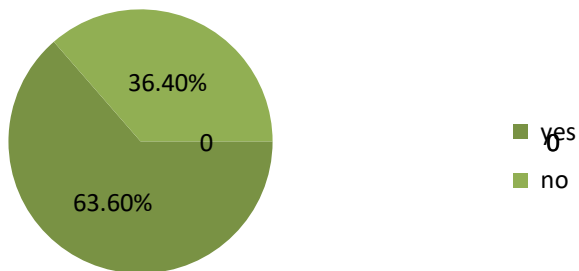
As the company being a petroleum-based company 66.7% respondent have chosen YES, and 33.3% has chosen NO.

what are the 4'c of sustainable development?



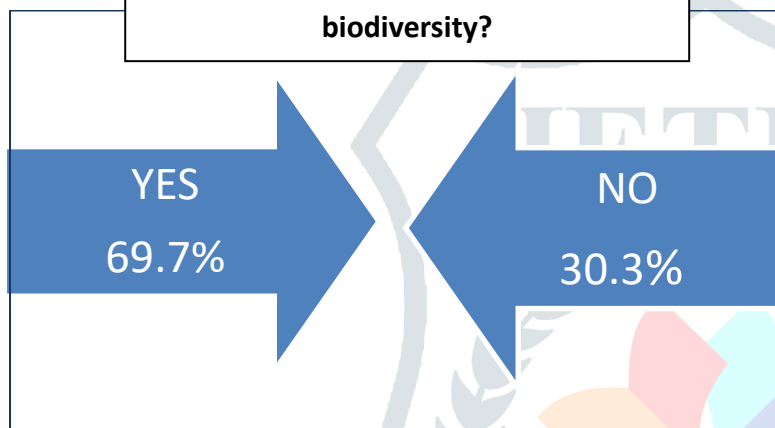
the diagram tells that, 69.70% are mostly aware about the 4'C of sustainable development.

do you think indian oil company has recycling and reuse program?



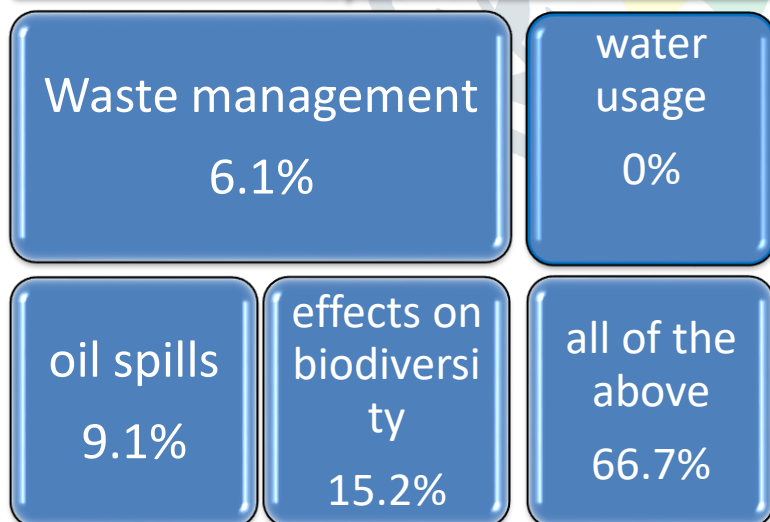
63.6% people agree that the company has a recycling & reuse program.

Are Indian Oil products affecting biodiversity?



The diagram says that, 69.7% respondents say that Indian oil co. products are harmful and 30.3% say that

On what following things do they keep eye on ?



This diagram shows that how much percentage the respondents thinks on particular elements the co. has a watch.

What initiatives are taken by the company?	
Improve operational efficiency	0 %
Energy conservation	12.1%
All of the above	75.8%

This shows what initiatives are taken by the co. with their percentages.

CONCLUSION

To begin with be beyond any doubt that there's no simple one step approach to getting to be feasible sustainability is a persistent handle that requires basic self-analysis, genuineness, advancement, and chance. That is before starting this travel toward maintainability, a commerce ought to be arranged to be self- reflective, basic and legitimate around all its operations and related impacts and a business should be prepared to require danger and be inventive, moving, past its consolation zone, or trade as usual. Moment consider that green trade supportability includes the operations of the entire business: each handle, each act. As the company starts its supportability travel, keep in mind that changes will affect operations and the company in wide. In this manner sustainability education is vital for employees, suppliers, a customer as communication of advance towards maintainability goals.

The study discoveries show that H_0 is more relevant than H_1 . Because it states that Indian Oil Co. does practices green business. Therefore, we can also support the claim after polling.

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