

**GOVERNMENT POST GRADUATE COLLEGE BERINAG,  
PITHORAGARH, UTTARAKHAND 262531**

**ENERGY AUDIT REPORT**

**For Sessions: 2020-2021 &  
2021-2022**



**Submitted to:**

**IQAC**

**Government Post Graduate College, Berinag**

**Pithoragarh**

**Uttarakhand 262531**

## ENERGY AUDIT CERTIFICATE

This is to certify that an "Energy Audit" for Government Post Graduate College Berinag, Pithoragarh, Uttarakhand has been conducted in July 2021 and July 2022 to assess energy costs, availability and reliability of supply of energy, energy conservation technologies and ways to reduce energy consumption.

Place: Berinag

Date: 30<sup>th</sup> July 2022



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## **Executive Summary**

Energy today has become a key factor in deciding the product cost at micro level as well as in dictating the inflation and the debt burden at the macro level. Energy cost is a significant factor in economic activity at par with factors of production like capital, land and labor. The imperatives of an energy shortage situation calls for energy conservation measure, which essentially mean using less energy for the same level of activity. Energy Audit attempts to balance the total energy inputs with its use and serves to identify all the energy streams in the systems and quantifies energy usages according to its discrete function. Energy Audit helps in energy cost optimization, pollution control, safety aspects and suggests the methods to improve the operating & maintenance practices of the system. It is instrumental in coping with the situation of variation in energy cost availability, reliability of energy supply, decision on appropriate energy mix, decision on using improved energy conservation equipment's Instrumentation and technology.

Energy Audit is the key to a systematic approach for decision-making in the area of energy management. It attempts to balance the total energy inputs with its use, and serves to identify all the energy streams in a facility. It quantifies energy usage according to its discrete functions.

The Energy Audit would give a positive orientation to the energy cost reduction, preventive maintenance and quality control programmes which are vital for production and utility activities. Such an audit programme will help to keep focus on variations which occur in the energy costs, availability and reliability of supply of energy, decide on appropriate energy mix, identify energy conservation technologies, retrofit for energy conservation equipment etc. The primary objective of Energy Audit is to determine ways to reduce energy consumption per unit of product output or to lower operating costs. The present report shows the energy audit of Govt. PG College Campus in terms of pre-audit phase, audit phase and post audit phase.

## 1. Introduction

In broad sense, Energy Efficiency means economizing on the use of energy without adversely affecting economic growth and development. It includes improving the efficiency of energy extraction, Transmission and Distribution and increasing the productivity of energy use.

### Designated consumers

Central Government specifies the following criteria for energy Intensive Industries and other establishments. (As per EC Act 2001, Section 14(e)), for Industries Electrical connected load - 5000 K\W and above Designated Consumers to get energy audit by Accredited energy audit firms

### Bureau of Energy Efficiency (BEE)

The Bureau of Energy Efficiency is an agency of the Government of India, under the Ministry of Power created in March 2002 under the provisions of the nation's 2001 Energy Conservation Act. The agency's function is to develop programs which will increase the conservation and efficient use of energy in India

## 2. Energy Audit

As per the Energy Conservation Act, 2001, Energy Audit is defined as "the verification, monitoring and analysis of use of energy including submission of technical report containing recommendations for improving energy efficiency with cost benefit analysis and an action plan to reduce energy consumption".

There are three phase of Energy Audit

1. Pre audit phase
2. Audit phase
3. Post audit phase

Above phase include following stages

**A. Data Collection** - In preliminary data collection phase, exhaustive data collection was performed using different tools such as observation, survey communicating with responsible persons and measurements.

Following steps were taken for data collection:

- The team went to each department, centers. Library, canteen etc.
- Data about the general information was collected by observation and interview.
- The power consumption of appliances was recorded by taking an average value in some cases.

**B. Data Analysis** - Detailed analysis of data collected include: calculation of energy consumption, analysis of latest electricity bill of the campus, understanding the tariff plan provided by the Uttarakhand Power Corporation Limited. Data related to water usages were also analysed using appropriate

