

**School of Engineering and Technology**  
**Department of Electrical and Electronics Engineering**  
 CHRIST (Deemed to be University), Bangalore

**Activity Report**

**General Information**

Type of Activity	Workshop
Title of the Activity	<b>Energy Conservation and Audit</b>
Date/s	27-09-2021 Monday and 28-09-2021 Tuesday
Time	4.00 pm to 6.00 pm on both the days
Venue	Online – WebEx platform
Collaboration/Sponsor (if any)	IIC-Kengeri Campus

**Speaker/Guest/Presenter Details**

Name	<b>Haneesh K M, Certified Energy Auditor, Associate Professor, EEE</b>
Title/Position	Member of Consortium of Energy Auditors, EEE
Organization	CHRIST University
Title of Presentation	Energy Audit and Energy Management Policy with a Case study
Name	<b>Venkataswamy R, Assisatnt Professor, EEE</b>
Title/Position	Member of Consortium of Energy Auditors, EEE
Organization	CHRIST University
Title of Presentation	Smart Energy Management Systems

**Participants profile**

Type of Participants	B. Tech (EEE) students
No. of Participants	50



**Synopsis of the Activity (Description)**

Highlights of the Activity	<ol style="list-style-type: none"> <li>1. Need for energy audit</li> <li>2. Energy use in an academic institution</li> <li>3. Process of detailed energy audit</li> <li>4. Structure of an energy audit report</li> <li>5. Energy management policy</li> <li>6. Analysis of energy audit and report generation</li> <li>7. Recommendations to be made based on the detailed audit</li> <li>8. Financial analysis of recommendations</li> <li>9. Smart and intelligent energy management techniques</li> </ol>
Key Takeaways	<ol style="list-style-type: none"> <li>1. Understanding about the need and process of energy auditing</li> <li>2. Assessment of the details given in an energy audit report</li> <li>3. Understanding of steps to be followed to implement energy management policy at individual and department level.</li> <li>4. Assessment of energy use trends from the detailed energy auditing</li> <li>5. Ability to make basic recommendations using the audit data</li> </ol>

	6. Understanding of various smart energy conservation methods
Summary of the Activity	The event was planned to give an awareness to students of EEE on the need, methods and analysis of industry using energy audit. In the two sessions the background, regulations on energy use was discussed. Energy audit process and contents of an audit report was discussed. Case study of energy audit in Christ university central campus and recommendations made were discussed. Energy management techniques based on audit survey and various options for recommendations were discussed with hands on examples. Various energy management projects and open project ideas were discussed
Follow-up Plan, if any	The participants will be inducted in the energy audit process and energy saving projects planned in the campus

### Rapporteur

Name of the Rapporteur	Haneesh K M
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Resource Persons	
	<b>Haneesh K M</b> Certified Energy Auditor (EA-7313) Associate Professor Department of Electrical and Electronics Engineering CHRIST(Deemed to be University)
	<b>Venkataswamy R</b> Member of Consortium of Energy Auditors Asisstant Professor Department of Electrical and Electronics Engineering CHRIST(Deemed to be University)

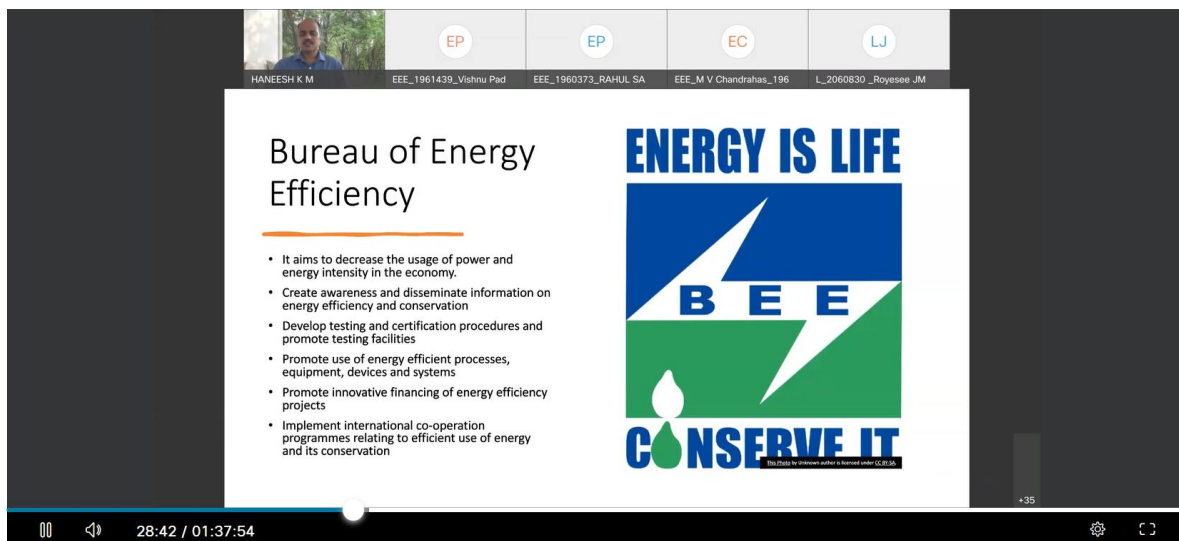
**5.1.3 Capacity development and Skill enhancement**  
**7.1.2 Environmental sustainability**

## Online Workshop on Energy Conservation and Auditing

Department of Electrical and Electronics Engineering, School of Engineering and Technology in association with IIC-Kengeri Campus organized two day workshop of Energy Conservation and Audit by Consortium of Energy Auditors on 27<sup>th</sup> and 28<sup>th</sup> of September 2021 from 4.00 pm to 6.00 pm on both the days. The workshop aimed to educate on the energy management policy of the organization and its implementation. It also aimed to impart knowledge on the energy audit process, audit report and the recommendations to be made based on the audit report. Conventional energy conservation tips and smart energy conservation techniques are also introduced to the participants through the workshop. The workshop was attended by 50 B. Tech students of Electrical and Electronics Engineering students.

On the first day of the session the need for energy conservation, international and national regulations on energy use, environmental laws in the country and need for energy audit in organizations were presented. The process of energy audit, report format of energy audit and recommendations to be made based on the audit report were discussed. Case study of energy audit in CHRIST university central campus were discussed and energy management policy of the institution prepared based on the audit were also presented.

Workshop of Energy Conservation and Auditing...   



The screenshot shows a Zoom meeting interface. At the top, there are four participant thumbnails with initials: HANEESH K M, EP, EP, EC, and LJ. Below them are their names: HANEESH K M, EEE\_1961439\_Vishnu Pad, EEE\_1960373\_RAHUL SA, EEE\_M V Chandras\_196, and L\_2060830\_Roysee JM. The main content is a slide titled "Bureau of Energy Efficiency". The slide lists several objectives of BEE:

- It aims to decrease the usage of power and energy intensity in the economy.
- Create awareness and disseminate information on energy efficiency and conservation
- Develop testing and certification procedures and promote testing facilities
- Promote use of energy efficient processes, equipment, devices and systems
- Promote innovative financing of energy efficiency projects
- Implement international co-operation programmes relating to efficient use of energy and its conservation

To the right of the text is the BEE logo, which features a stylized sun and a water drop, with the text "ENERGY IS LIFE" above and "CONSERVE IT" below. The BEE logo itself consists of the letters "BEE" in a blue box. At the bottom of the slide, there is a small text: "The 2009 UN Climate Summit and the National Action Plan (NAP)". The Zoom interface at the bottom shows a play button, a volume icon, and a timer reading "28:42 / 01:37:54".

On the second day of workshop, Energy management techniques and the cost benefit analysis of various recommendations to be made based on the detailed energy audit was discussed. Smart and intelligent energy management techniques and projects which can be taken up to improve energy conservation in an educational institution was also discussed. Various career opportunities for the Electrical Engineering students in this technical area also was presented.

## Workshop of Energy Conservation and Auditing... [↓](#) [🔗](#) [✎](#)

The screenshot displays a Google Meet interface with five participants: HANEESH K M, VENKATASWAMY R, 2060813\_Rishay Ragha, EEE\_M V Chandrahas\_1, and EEE\_1960821\_Jino Jais. The main content is a Google Sheet titled "Energy Conservation and Audit" with the following data:

Name	Load 1 in W	Load 1 Duration	Load 2 in W	Load 2 Duration	Load 3 in W	Load 3 Duration	Load 4 in W	Load 4 Duration	Load 5 in W	Load 5 Duration	Energy use cost	Load Reduction %	Reduced Load/Duration	Energy per month	Energy Saved
Ventilator	80	6	12	10	100	5	10	4	100	5	0	20	20	49.2	0
AC	50	4	10	4	100	10	5	5	0	0	0	0	0	81.85	0
Light	75	5	20	8	80	20	7	1.5	0	0	0	0	0	23.98	0
Sublim	100	8	20	5	25	10	30	5	0	0	0	0	0	47.1	0
Mixer	60	8	15	6	100	6	30	2	0	0	0	0	0	36	0
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

Around 50 students actively participated in the workshop. The students were given worksheets to do energy and cost benefit analysis calculations. As a follow up these students will be inducted into some of the energy conservation activities on the campus

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### List of Participants

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