

# SDG PROJECT

## ENERGY AUDIT OF OUR SCHOOL

*A Study Towards Affordable and Clean Energy*

**SDG 7 – Affordable and Clean Energy**

SDG 12 – Responsible Consumption and Production

SDG 13 – Climate Action

|                      |                         |
|----------------------|-------------------------|
| <b>School</b>        | M.P Shah High School    |
| <b>Board</b>         | Maharashtra State Board |
| <b>Academic Year</b> | 2026–27                 |

## CERTIFICATE

This is to certify that \_\_\_\_\_ of Class \_\_\_\_\_ has successfully completed the SDG Project titled “Energy Audit of Our School” for the academic year 2026–27. The project is based on the study of the school's electricity consumption and promotes awareness of energy conservation in accordance with Sustainable Development Goal

## ACKNOWLEDGEMENT

I sincerely thank my Principal, teachers and school management for giving me the opportunity to undertake this SDG project on energy auditing. I am grateful for the electricity-bill records provided by the school, which helped me study the pattern of electricity consumption. I also thank my parents and classmates for their support and encouragement in completing this project.

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## 1. INTRODUCTION

Energy is an essential part of every school. Electricity is required for classrooms, fans, lights, computers, projectors, laboratories, offices, water pumps and other electrical appliances. However, unnecessary consumption increases expenditure and also increases the environmental impact associated with electricity generation.

An energy audit is a systematic study of how energy is consumed in a building. It helps identify areas where electricity is being used efficiently and areas where energy can be saved. For this project, the school's electricity bills for May, June and July 2026 were studied.

## 2. OBJECTIVES OF THE ENERGY AUDIT

- To study the school's electricity consumption.
- To compare electricity consumption over three months.
- To identify the increase or decrease in energy consumption.
- To understand the approximate electricity expenditure.
- To identify possible causes of high electricity consumption.
- To suggest methods for reducing electricity consumption.
- To promote awareness among students and staff about energy conservation.
- To contribute towards SDG 7 – Affordable and Clean Energy.
- To encourage responsible consumption in accordance with SDG 12.

## 3. DATA COLLECTED FROM ELECTRICITY BILLS

The following information was taken from the three electricity bills provided.

| Month        | Units Consumed (kWh) | Current Month Bill |
|--------------|----------------------|--------------------|
| May 2026     | 874                  | ₹9,860.61          |
| June 2026    | 1,202                | ₹13,647.97         |
| July 2026    | 1,621                | ₹17,965.37         |
| <b>TOTAL</b> | <b>3,697</b>         | <b>₹41,473.95</b>  |

Note: 1 unit of electricity = 1 kWh (kilowatt-hour).

Average monthly consumption =  $3,697 \div 3 = 1,232.33$  units/month.

Average monthly current-month bill =  $\text{₹}41,473.95 \div 3 = \text{approximately } \text{₹}13,824.65/\text{month}$ .

## 4. MONTH-WISE ANALYSIS

**May 2026:** 874 units were consumed and the current-month bill was ₹9,860.61. This was the lowest consumption among the three months.

**June 2026:** 1,202 units were consumed and the current-month bill was ₹13,647.97. Consumption increased considerably compared with May.

**July 2026:** 1,621 units were consumed and the current-month bill was ₹17,965.37. This was the highest consumption during the audit period.

## 5. COMPARISON OF ELECTRICITY CONSUMPTION

May → 874 units

June → 1,202 units

July → 1,621 units

Increase from May to July =  $1,621 - 874 = 747$  units. This is an approximate increase of 85.5%.

The current-month bill increased from ₹9,860.61 in May to ₹17,965.37 in July, an approximate increase of 82.2%.

For the project file, a bar graph can be drawn using the above monthly consumption figures. Suggested scale: 1 cm = 200 units.

## 6. POSSIBLE REASONS FOR INCREASED CONSUMPTION

- Increased use of fans during hot and humid weather.
- Lights operating for long periods in classrooms, corridors and offices.
- Use of computers, projectors, smart-class equipment and laboratory equipment.
- Use of water pumps.
- Use of air-conditioners, where applicable.
- Standby power consumption from electronic equipment.
- Lights and fans being left switched on when rooms are unoccupied.

## 7. ENERGY-SAVING MEASURES RECOMMENDED

- Replace conventional lighting with energy-efficient LED lights wherever possible.
- Switch off lights, fans, projectors, computers and air-conditioners when not required.
- Make maximum use of natural daylight.
- Maintain fans, air-conditioners, pumps and other electrical equipment regularly.
- Prefer energy-efficient appliances when old equipment is replaced.
- Explore installation of rooftop solar panels as a long-term renewable-energy solution.
- Record and compare monthly electricity consumption.

## 8. STUDENT ENERGY CONSERVATION CAMPAIGN

The school can introduce a “SAVE ENERGY – SAVE OUR FUTURE” campaign. Students can form an Energy Squad to check unused classroom lights and fans, put up awareness posters, conduct assembly activities, maintain an Energy Conservation Register and report faulty electrical appliances to teachers.

## 9. ESTIMATED ENERGY-SAVING POTENTIAL

The school consumed an average of approximately 1,232 units per month during the three-month study.

A 10% reduction would mean approximately 123 units saved per month. Based on the three-month average bill, this corresponds roughly to ₹1,382 per month.

A 20% reduction would mean approximately 246 units saved per month, or roughly ₹2,765 per month based on the same average bill. These are approximate estimates because actual bills include fixed charges, taxes, adjustments and other components.

## 10. SDG CONNECTION

**SDG 7 – Affordable and Clean Energy:** The project encourages energy efficiency, reduction of unnecessary electricity use and exploration of renewable energy such as solar power.

**SDG 12 – Responsible Consumption and Production:** The project promotes responsible consumption by encouraging everyone in the school to use electricity only when necessary.

**SDG 13 – Climate Action:** Reducing unnecessary electricity consumption can reduce the environmental impact associated with electricity generation and promotes climate-conscious behaviour.

## 11. FINDINGS OF THE ENERGY AUDIT

- The school consumed 3,697 units during May–July 2026.
- The total current-month electricity charges in the three bills were approximately ₹41,474.
- Average monthly consumption was approximately 1,232 units.
- May had the lowest consumption: 874 units.
- July had the highest consumption: 1,621 units.
- Electricity consumption increased by approximately 85.5% from May to July.
- There is scope for reducing consumption through behavioural changes and energy-efficient equipment.
- Solar energy can be considered as a long-term renewable-energy solution.

## 12. ACTION PLAN

| Action                                    | Responsible Persons | Frequency   |
|-------------------------------------------|---------------------|-------------|
| Switch off lights and fans in empty rooms | Students / Teachers | Daily       |
| Check electrical appliances               | Energy Squad        | Daily       |
| Record electricity-meter reading          | School staff        | Monthly     |
| Compare monthly consumption               | Energy Audit Team   | Monthly     |
| Replace inefficient lights                | School Management   | As required |
| Maintain fans and ACs                     | Maintenance Staff   | Regularly   |
| Conduct energy-awareness campaign         | Students / Teachers | Every term  |
| Explore solar panels                      | Management          | Long-term   |

## 13. CONCLUSION

The energy audit shows a significant increase in electricity consumption from May to July 2026. The school consumed 874 units in May, 1,202 units in June and 1,621 units in July. The study demonstrates that simple actions such as switching off unused lights and fans, making better use of natural light, maintaining appliances and using energy-efficient equipment can help reduce electricity consumption.

The school should continue monitoring monthly electricity consumption and encourage students and staff to adopt energy-saving habits. Energy conservation is not only about reducing the electricity bill; it is about protecting natural resources and creating a sustainable future.

**“SAVE ENERGY TODAY, SECURE TOMORROW.”**

## **14. BIBLIOGRAPHY / SOURCES**

- School electricity bills – Adani Electricity, May 2026, June 2026 and July 2026.
- Maharashtra State Board Science / Environmental Education concepts.
- United Nations Sustainable Development Goals – SDG 7, SDG 12 and SDG 13.