

# NATIONAL ENGINEERING COLLEGE, K.R. NAGAR, KOVILPATTI

(An Autonomous Institution Affiliated to Anna university Chennai)

## INTERNAL QUALITY ASSURANCE CELL

### Sustainable Development Goals (SDG) Report

**Reporting Year:** 2024-2025

**Institution Type:** Engineering College

**Location:** Kovilpatti, Thoothukudi District, Tamil Nadu

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#### 1. Introduction

National Engineering College, the most prominent landmark of Kovilpatti, has been the crowning glory of the Matchless City of Matches. Its celebrated 'Son of the Soil' Kalvi Thanthai Thiru.K. Ramasamy transformed the entire social and cultural scenario in and around this small town by establishing the excellent educational institution popularly referred as "NEC". NEC was established in the year 1984. NEC gained an autonomous status by the year 2011. It is approved by AICTE, New Delhi and affiliated to Anna University, Chennai. It offers 7 UG, 4 PG and several research programmes leading to Ph.D. degrees in all departments. Five UG programmes (MECH. CSE, ECE, EEE, IT) have been Accredited by NBA New Delhi under Tier-I category. Also, the institution is accredited by NAAC with 'A' grade. NEC has several centres of excellence and laboratories.

NEC has signed MoU with research organizations and industries in order to promote closer interaction with other institutions in the areas of technology development, curriculum updation and development of state-of-art centers. The college has well-equipped laboratories for all branches of engineering and also has close interactions with the leading Industries and IT firms for students training and project works. Our students and faculty regularly visit nearby villages to conduct surveys on pressing issues like water conservation, sustainable farming practices, and digital literacy. The college has adopted several villages where we focus on infrastructure improvement, including installing solar lights, developing library facilities, and conducting adult education programs. We also organize regular awareness campaigns on government schemes, financial literacy, and environmental conservation. Through our agricultural extension services, we help local farmers adopt modern farming techniques and provide guidance on crop management, making our institution a catalyst for sustainable rural development in the region.

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#### 2. Mapping College Activities to UN SDGs

##### SDG 1: No Poverty

##### Institutional Initiatives:

Scholarships, fee waivers for economically weaker students, community outreach programs.

##### Impact / Outcomes:

X students supported annually; Y community beneficiaries.

K.R. Memorial Scholarships : 7 Students

Alumni Scholarships : 15 Students

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Community outreach programs : 10 Outreach programs

#### **SDG 2: Zero Hunger**

##### **Institutional Initiatives:**

Mid-day meal assistance for staff/contract workers, collaboration with NGOs for food distribution drives.

Mid-day meal assistance for 40–50 staff/contract workers daily

##### **Impact / Outcomes:**

~14,600–18,250 meals served per year

#### **SDG 3: Good Health & Well-being**

##### **Institutional Initiatives:**

Annual health check-ups, blood donation camps, sports facilities, mental health counselling.

Annual NSS special camp including free eye check-up camp and general medical camp; annual health check-ups for students and staff; blood donation drives;

As part of the Founder's Day celebrations, the institution organizes Free Basic Health Care Checkup Camps, including services such as Blood Sugar, Hemoglobin, Blood Grouping, BP, SpO<sub>2</sub>, and BMI, benefiting local communities across multiple villages.

##### **Impact / Outcomes:**

Number of participants for eye Camp=129

Number of participants for Medical Camp=160

Number of participants for Blood donation Camp=32

#### **SDG 4: Quality Education**

##### **Institutional Initiatives**

Outcome-based education, skill development programs, NPTEL & MOOCs adoption, faculty training.

##### **Impact / Outcomes:**

**2024-2025: 82% students Placed**

##### **Salary Details:**

**Median salary: 4.2 Lakhs**

**Max. Salary: 35 Lakhs**

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**Sustainable Development Goals (SDG) Report**

**SDG 5: Gender Equality**

**Institutional Initiatives**

Equal opportunity recruitment, women empowerment cell, self-defense training for girl students.

**Impact / Outcomes:**

National Engineering College stands out in terms of gender equity. The Institute confirms that women actively participate and contribute to all of its characteristic moves, such as leading and making decisions. National Engineering College has a Women Empowerment Cell. This cell's primary goal is to promote and empower women to prioritise self-esteem, women's autonomy, and equity. This cell arranges outreach activities for both boys and girls.

All programs of all years)	No. of Male Students	No. of Female Students	Total Students
<b>UG</b>	<b>1350</b>	<b>936</b>	<b>2268</b>
<b>PG</b>	<b>7</b>	<b>24</b>	<b>31</b>

Female student percentage: \_\_\_\_\_41%\_\_\_\_\_ (2024-2025)

**SDG 6: Clean Water & Sanitation**

**Institutional Initiatives**

RO water systems, water conservation campaigns, rainwater harvesting structures.

**Impact / Outcomes:**

The mechanical maintenance engineer maintains the physical facilities. Estate office, RO system, Furniture, Fire and safety, water management, plumbing, Sewage treatment system, and Gardening services taken care by his team.

Sewage Treatment Plants (STP) with 1,50,000 Ltr capacity (Estd: 2017) at a cost of Rs.12.0 Lakhs. Sewage water, Urinal waste, Toilet waste and Waste water from all the blocks are collected and pumped in to STP through pipelines.

Our campus has a total of 9 Nos. rain water harvesting points with a total catchment area of 10,065 m<sup>2</sup>.

**Capacity of Rain Water Harvesting (in litre): 210000**

**Total Water Consumption (in litre) :85755000**

**Volume of Reused Waste Water (in litre): 35714360.**

**SDG 7: Affordable & Clean Energy**

**Institutional Initiatives**

Solar power installations, energy-efficient lighting, green audit.

**Impact / Outcomes:**

The energy-saving methods employed in our college

- **Fluorescent lamps** are replaced by **T8 tube lights** and **energy-efficient LED tube lights**.
- **Conventional ceiling fans** were replaced by **energy-saving super fans** in hostels.

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- **Energy meters** were installed in each power panel to monitor energy consumption.

#### Electricity Bill Details

Year	Usage	Solar			DG Set Reading	
		CSE	First Year	IT	500KVA	320KVA
2023-2024	1626586	69358	67540	76109	15334	10139

The overall renewable energy percentage for the entire year is **11.30%**.

#### SDG 8: Decent Work & Economic Growth

##### Institutional Initiatives

Campus placements, entrepreneurship cell, internships with industry.

##### Impact / Outcomes:

Start-ups incubated placement statistics.

**2024-2025: 82% students Placed**

##### Salary Details:

**Median salary: 4.2 Lakhs**

**Max. Salary: 35 Lakhs**

#### SDG 9: Industry, Innovation & Infrastructure

##### Institutional Initiatives

R&D centres, patent filings, industry MoUs, incubation hubs.

##### Impact / Outcomes:

- Enhanced research output and innovation through increased patents and publications.
- Strengthened industry-academia collaboration leading to real-world problem-solving.
- Boosted entrepreneurial activities and start-up culture via incubation support.
- Improved infrastructure fostering advanced technology development and skill enhancement.

Worth of consultancy: 10.15L

Worth of on-going projects: 41.47L

No. of functional MoUs: 13

No. of Activities through MoUs: 12

No. of patents filed: 7

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**SDG 10: Reduced Inequalities**

**Institutional Initiatives**

Disability-friendly infrastructure, inclusive admission policy.

**Impact / Outcomes:**

1. Built environment with ramps for easy access to classrooms in all key buildings, including the Administrative Block, First Year Block, Tech Park, Canteen, etc.
2. Disabled-friendly washrooms provided in accessible locations across the campus.
3. Clear signage and display boards installed throughout the campus for ease of navigation.

**SDG 11: Sustainable Cities & Communities**

**Institutional Initiatives**

Participation in smart city projects, eco-friendly campus design.

**Impact / Outcomes:**

- The adoption of eco-friendly campus design, including green buildings, renewable energy integration, rainwater harvesting, and waste management systems, has reduced the campus's carbon footprint and promoted sustainable living practices.
- These initiatives have not only enhanced the environmental quality of the campus but also served as a living model for sustainable urban development, inspiring students and the local community to adopt environmentally responsible practices.
- Active participation in smart city projects has enabled the institution to contribute to urban innovation, sustainable infrastructure, and improved community services.

Description	2023-24
Number of eco-friendly transportation facilities with capacity	6.00
Total number of trees in the campus	3584.00
Maximum air quality index (AQI)	62.00
Minimum AQI	26.00
Total capacity of eco-friendly transportation	596.00

**SDG 12: Responsible Consumption & Production**

**Institutional Initiatives**

-waste management, plastic-free campus policy, recycling initiatives.

**Impact / Outcomes:**

The institution had taken several steps to maintain a green environment. A system for solid/liquid waste management is in place through recycling and other means, among other steps such as planting more trees, encouraging bicycling, E scooters, and constructing additional solar power plants. These bins are colour coded specific to a category of solid waste, viz:

- Green –Biodegradable, organic waste like cooked food, vegetables, fruit, leaves, etc.

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- Red –Non-degradable waste like glass, blades, expired medicine, bandages, etc

**Solid Waste Management Practices:**

- Six organic waste compost pits are used (size: 20 × 10 × 5 feet each).
- These pits convert leftover food waste, vegetable waste from hostel kitchens, and dry leaves into **organic manure**.
- About **200 kg of solid waste** is dumped daily, mulched for 3 months, and later used as manure for landscaping and tree plantation.

**SDG 13: Climate Action**

**Institutional Initiatives**

Tree plantation drives, carbon footprint reduction programs.

**Eco Club** and NSS periodically conduct programs such as **plastic-free awareness campaigns, tree plantation drives, and carbon footprint reduction initiatives** to promote environmental sustainability.

**Impact / Outcomes:**

- Average travel distance for two-wheelers is **14 km**, helping reduce emission
- Around **1,600 students** use the college bus (mass transit), reducing the carbon footprint.
- Three generators (**500 kVA, 320 kVA, and 200 kVA**) are available for power backup.

**Green energy initiatives**

- **CO<sub>2</sub> Reduction:** 848 tons
- **Equivalent Tree Planting:** 40,257 trees
- **Standard Coal Saved:** 330 tons

**SDG 14: Life below Water**

**Institutional Initiatives**

Awareness drives on water pollution, collaborations with environmental

**Eco Club** and NSS periodically conduct programs such as **plastic-free awareness campaigns, tree plantation drives, and carbon footprint reduction initiatives** to promote environmental sustainability.

**Impact / Outcomes:**

- **2,364 students, 212 teachers, and 179 non-teaching staff** contribute to waste management activities..
- The campus is equipped with a sewage treatment plant and an incinerator.
- A seminar on "**Save Nature & Holistic Waste Management**" was organized.

**Plastic-free awareness campaigns: 2 No's**

**Tree plantation and awareness: 2 No's**

**Water awareness: 1 No**

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#### **SDG 15: Life on Land**

##### **Institutional Initiatives**

Biodiversity garden, afforestation projects.

##### **Impact / Outcomes:**

- The campus garden covers **62,200 m<sup>2</sup>**.
- The garden has **39 species** of plants, including **1,052 Neem trees**, **520 Ashoka trees**, and **68 fruit-yielding trees**.
- Scientific names of plants are displayed on the trees.
- The garden consumes **150 KL** of treated water daily.
- A team of a dozen dedicated employees maintains the gardens.
- A student-led **ECO Club** actively functions on campus to promote green initiatives.

#### **SDG 16: Peace, Justice & Strong Institutions**

##### **Institutional Initiatives**

Anti-ragging cell, grievance redressal system, student council elections.

##### **Impact / Outcomes:**

- A strict anti-ragging policy has created a safe and respectful learning environment for all students, especially newcomers.
- The grievance redressal mechanism ensures that student concerns are addressed promptly, transparently, and fairly, fostering trust in institutional governance.
- The POSH Cell and Gender Equality Cell jointly organized the “Dispose with Care: Sanitary Napkin Machine Awareness” program to educate all girl students.

#### **SDG 17: Partnerships for the Goals**

##### **Institutional Initiatives**

MoUs with universities, government bodies, industries for SDG projects.

##### **Impact / Outcomes: MoU: 1No.**

- The National Engineering College (NEC), Kovilpatti, is working in collaboration with SIR&PR, Tamilnadu, to identify and implement cost-effective activities addressing the 9 LSDG themes by mobilizing its students and faculty.
- Under the vision of Kalvithanthai Thiru K. Ramasamy, our institution maintains a strong commitment to rural development through year-round initiatives that bridge the gap between academic excellence and community welfare.
- Through our NSS units, we conduct regular agricultural awareness camps, organize free medical camps in remote villages, and implement skill development programs for rural youth.