Carbon Emissions Assessment

FY 2022–23, FY 2023-24, FY 2024–25

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Deki Electronics Limited – A Snapshot

Deki Electronics Limited is India's largest manufacturer of film capacitors and was recently ranked the third-largest electronic component manufacturer in India, as per Electronics Bazaar (EB Times).

Established in 1984 through a technical collaboration with Okaya Electric Industries, Japan, Deki has consistently achieved an impressive average annual growth rate of over 20% for more than three decades. Its state-of-the-art manufacturing facility in Noida (Delhi-NCR) boasts an installed capacity of 1.2 billion capacitors per year. With a dedicated team of over 600+ professionals, the company remains committed to its vision of being a "company that makes India proud."

Deki is an innovation-driven and customer-focused organization. Its in-house R&D centre, recognized by the Department of Scientific and Industrial Research (DSIR), Government of India, is responsible for developing new products that contribute to more than 25% of the company's total sales. In addition, the Technical Centre offers best-in-class application engineering support to over 250 customers across the globe.

The company's systems and processes are certified under global standards including: IATF 16949:2016, ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 and ISO 50001:2018.

Deki fosters a unique culture of shared ownership, built on transparency, participation and a bottom-up leadership approach. This culture has been a key driver of the company's sustained success in a globalized and highly competitive business environment.

With deep industry knowledge, a strong innovation ecosystem and a commitment to sustainability, Deki is well-positioned to shape the future of electronics manufacturing in India and beyond.

Mr. Vinod Sharma, Managing Director of Deki Electronics Limited, is a prominent figure in India's electronics industry. Over the years, he has held several key leadership roles, including President of ELCINA, Chairman of the Electronics and Computer Software Export Promotion Council (ESC) and Chairman of the CII National ICTE Committee. He currently serves as the Chairman of the CII National Electronics Committee, Chairman of the Electronics Sector Skills Council of India and is also a Governing Council Member of the Quality Council of India (QCI).

Expanding Beyond Capacitors

Deki is diversifying into other innovative electronics and solutions in partnership with domain experts.

SureSolutions, A division that has earned the trust of top retail brands in India by delivering smart retail and Industry 4.0 solutions, including SureCheck – Electronic Article Surveillance (EAS) systems, SureCount – Footfall analytics and data-driven insights, SureDisplay – Electronic Shelf Labels system etc. (www.suresolution.in)

IPEC India Pvt. Ltd.: A joint venture established in 2017 to design, manufacture and market advanced power electronics solutions for e-Mobility and new energy applications. Today, IPEC is India's largest provider of EV chargers for the rapidly growing electric 2-wheeler and 3-wheeler segments. (www.i-pec.in)

Message from the CEO

At Deki, sustainability is not just a goal—it is deeply embedded in our values and culture. Over the years, we have consistently demonstrated our commitment to environmental responsibility through thoughtful actions and meaningful changes across our operations.

We have undertaken a wide range of initiatives to reduce process waste, lower our consumption of electricity and water and promote the reuse of packaging materials. Whether it's using corrugated boxes for finished goods packaging with customer consent or reusing raw material pallets and other packing items, our efforts reflect our resolve to reduce our environmental footprint.

Noteworthy innovations such as manufacturing bricks and tiles from waste epoxy powder, reusing gloves after proper washing, and recovering zinc content from discarded materials highlight our dedication to circular economy principles.

At Deki, we believe that protecting and preserving the environment is a shared responsibility and a fundamental duty. While we have made significant progress, we recognize that there is much more to be done. We continue to push ourselves to minimize waste generation and optimize the use of raw materials, consumables, and other resources throughout our value chain.

With growing global awareness and evolving environmental expectations, Deki is now placing even greater emphasis on reducing its carbon footprint—including that of its supply chain. As part of this journey, we have initiated carbon footprint accounting starting from FY 2022–23.

I would like to extend my sincere thanks to our internal team and Fitsol Solutions for their support and collaboration in driving this important initiative.

We are proud that Deki continues to stand out as a responsible and innovative company in the capacitor industry. I have full faith that our team members will continue to uphold our sustainability goals with the same passion, commitment and sense of purpose that has brought us this far.

Let us move forward together—toward a greener, more resilient and sustainable future.

Warm regards,
Vinod Sharma
Managing Director
Deki Electronics Ltd.

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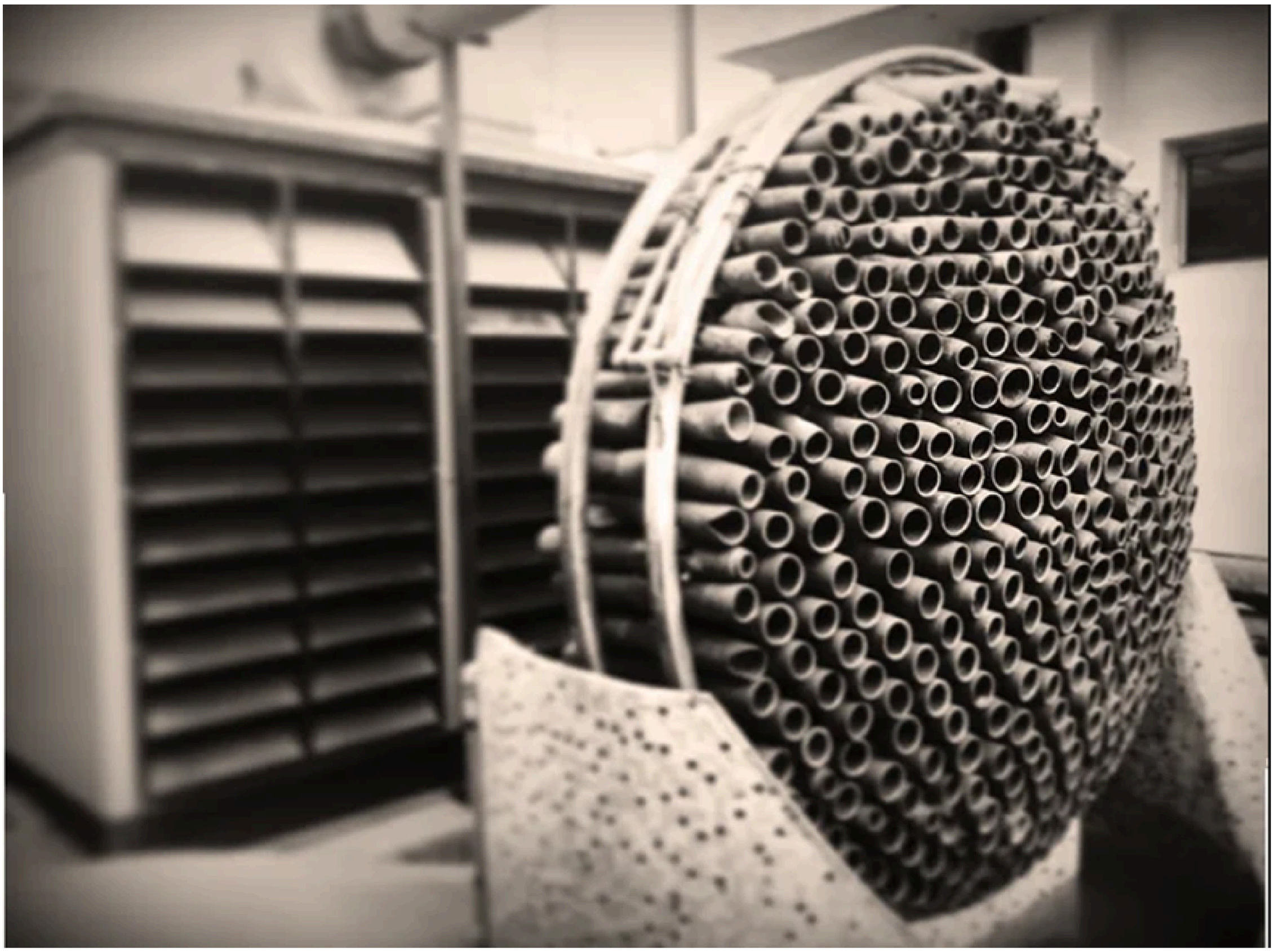

Deki's innovative terracotta cooling system helps mitigate the hot air emitted by DG sets while naturally improving air quality. Recognized by the United Nations Environment Programme (UNEP), this low-carbon solution not only cools but also purifies air through moss-grown terracotta, capturing harmful carbon particles.

A breakthrough in natural cooling has been achieved using a beehive-inspired arrangement of terracotta, blending traditional passive cooling methods with modern engineering. This system operates by circulating water over hollow terracotta tubes, which leverages the principle of evaporative cooling to reduce ambient temperatures without generating waste heat—unlike conventional air conditioning.

Deki utilized more than 800 terracotta pots to counteract hot air output from large diesel generator sets. The impact was significant: local temperatures for workers were reduced by up to 15°C, contributing to improved comfort and air quality. The design promotes sustainability, not only through energy and emissions reductions, but also by supporting local craftspeople and utilizing recycled water.

The cooling system has been recognized for its added ability to purify the air; naturally growing moss on the terracotta structure can help trap harmful dust and carbon particles. The installation stands as an example of climate-responsive, affordable, and scalable cooling technology for Indian manufacturing and commercial settings.

Source: The Better India, UNEP, Ant Studio

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Company name	Deki Electronics Ltd.
Business Description	Film capacitors manufacturing
Chosen consolidation approach (equity share, operational control or financial control)	Operational Control
Location	B-19 & 20, BPO Rd, B Block, Sector 58, Noida, Uttar Pradesh 201301
Scope	Scope 1 & 2 emissions
Certifications	ISO 9001: 2015, IATF 16949: 2016; ISO 14001: 2015, ISO 45001: 2019; ISO 50001: 2018; ZED Gold Certification.
Reporting period	FY 2022-2023, FY 2023-2024 and FY 2024-2025

Operating Boundary

Emissions Sources:	**Description**
Fuel Consumed	Diesel, Petrol and PNG
Energy use	All electricity from the grid and on-site generators.
Scope 1:	
Stationary combustion	Fuel consumed in generators and machines on-site.
Mobile combustion	Fuel used in company-owned Vehicles.
Fugitive Emissions	Emissions from Refrigerants leaks in ACs, Use of Fire Extinguishers and Gas Refilling
Scope 2:	
Electricity	Location-based Electricity Consumption; No renewable energy contracts.
Scope 3:	
Fuel and Energy Related Activities	Emissions linked to Scope 1 and 2 data.

Approach

Approach Used: Operational Control.
100% emissions from all the operations directly controlled by Deki Electronics are included.

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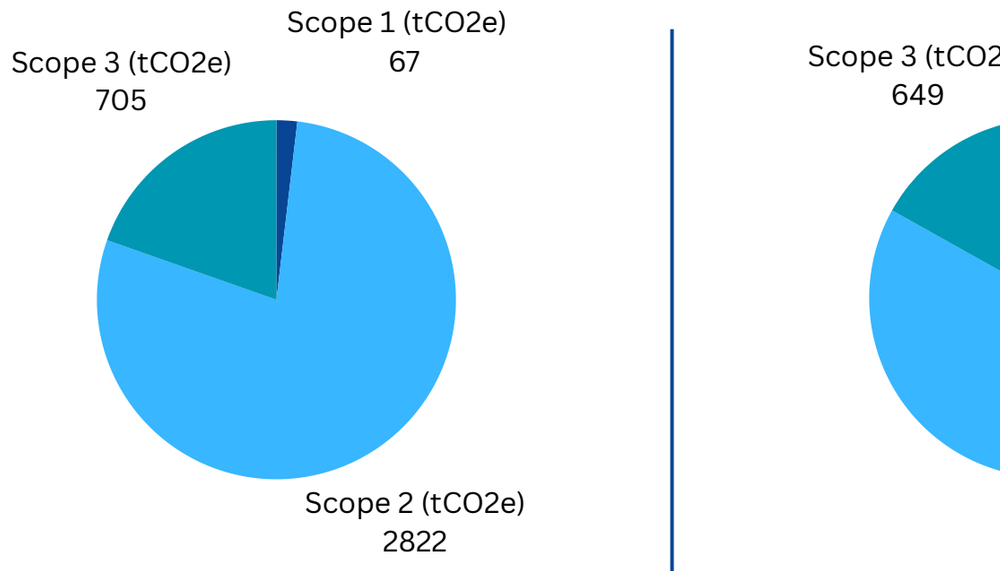
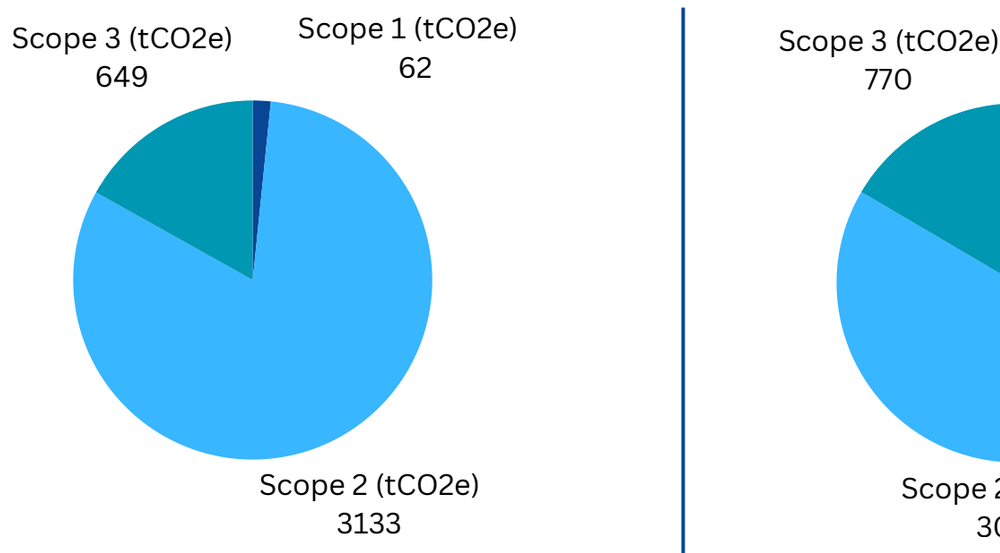
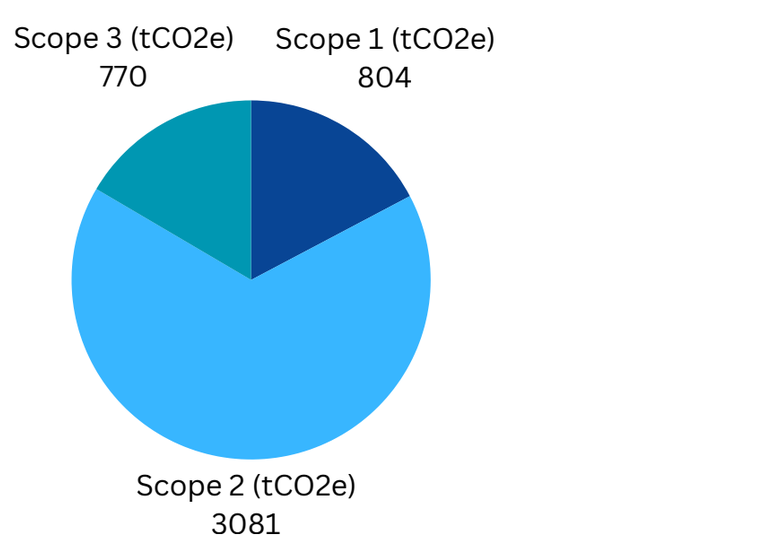
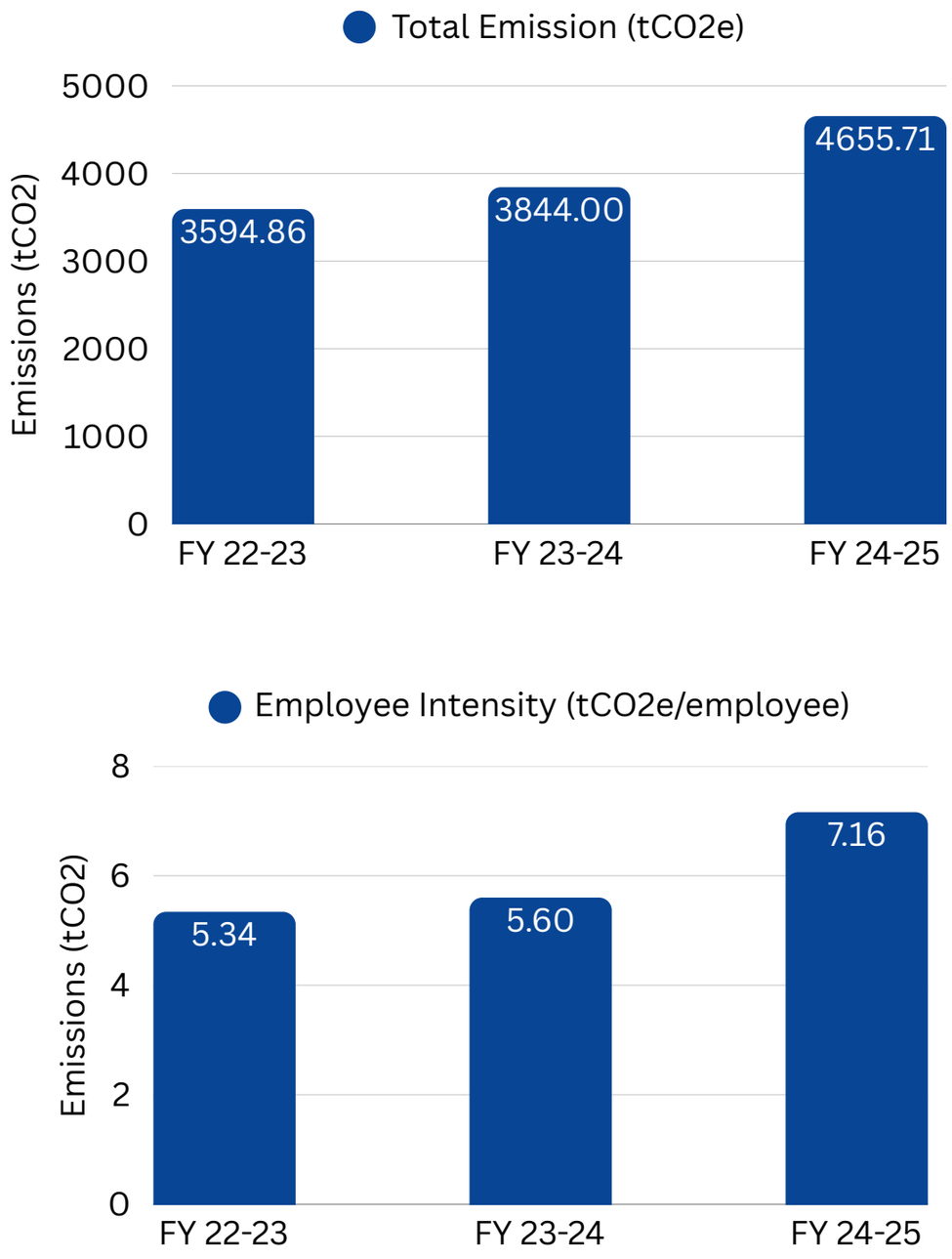
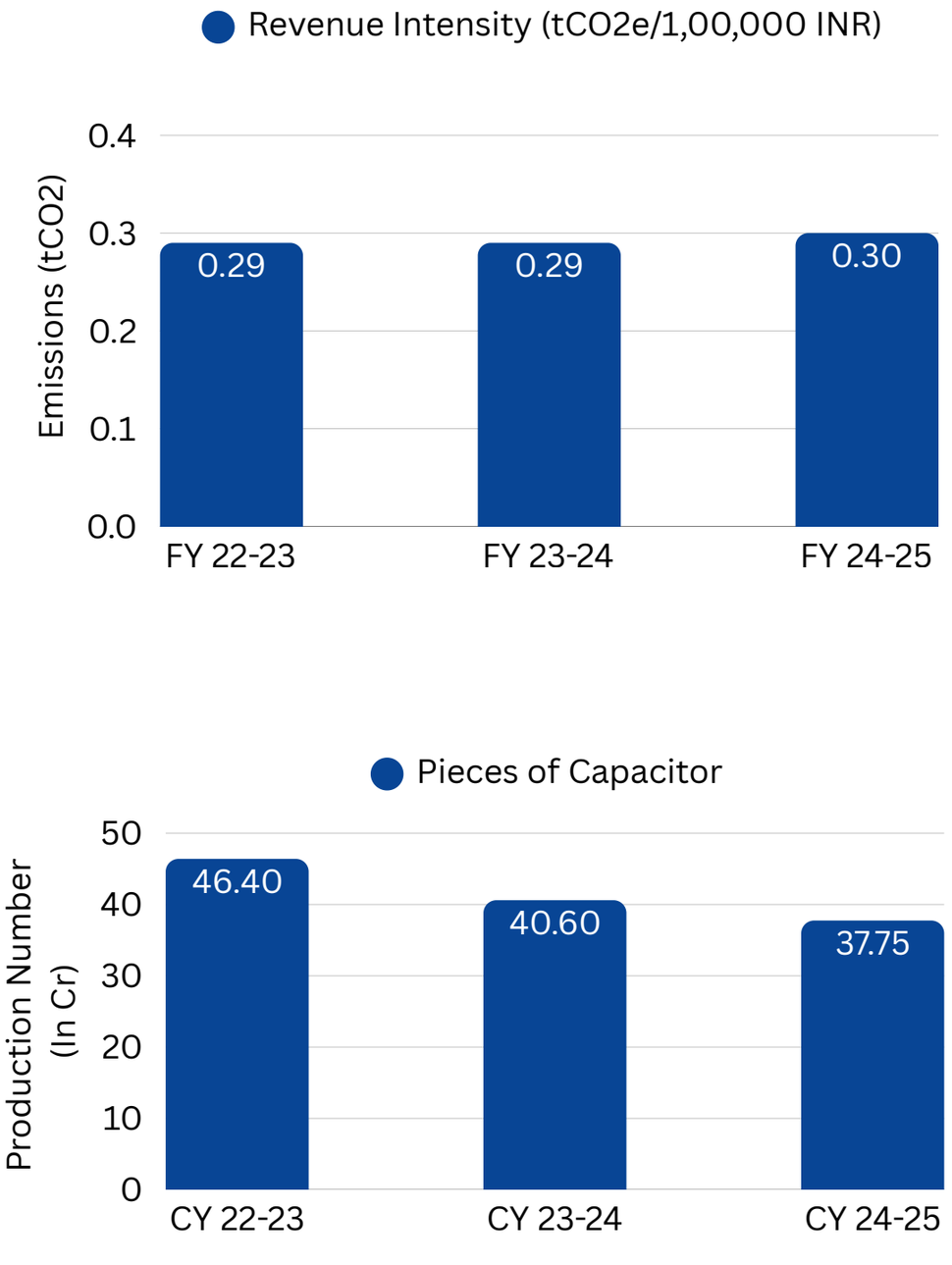
Emissions Overview











Details and reference for the calculations in the Annexure; CY denotes Calender year

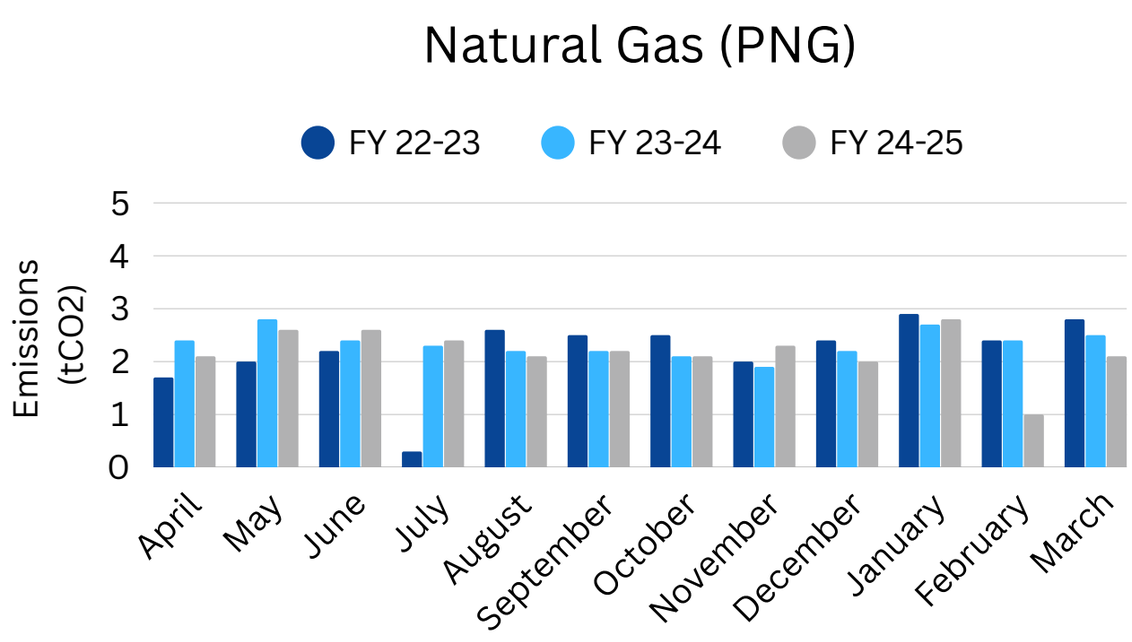
- Emissions increased in FY24-25 while the number of capacitors produced declined, primarily due to a value mix shift towards larger sized capacitor after FY 2022-23. Need to Scaleup Production More cleanly and efficiently.

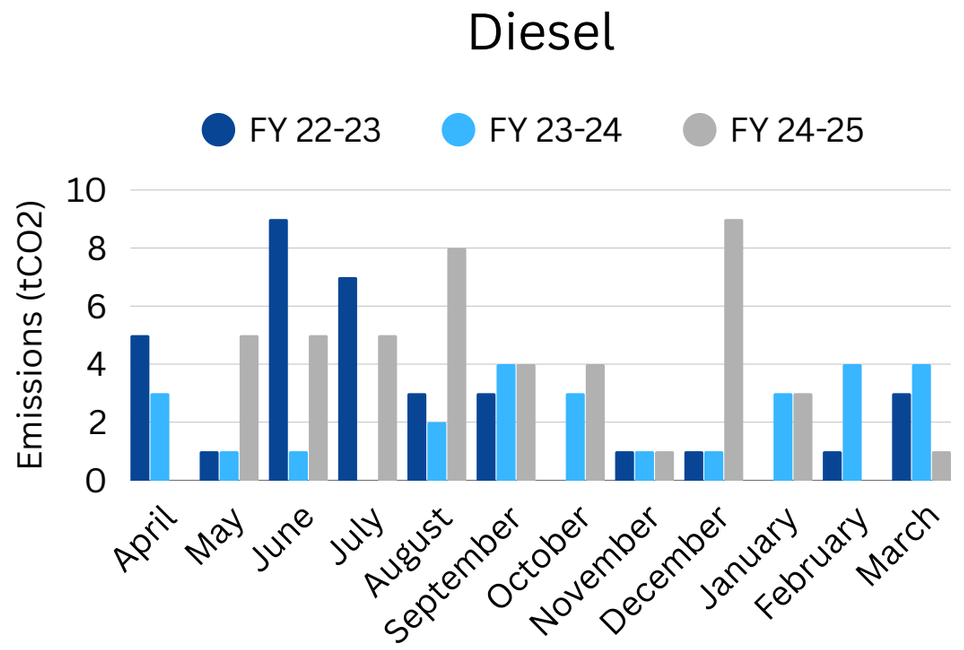
- Purchased electricity is the biggest emission driver, hence we are working on improving on-site energy efficiency to reduce our usage. Also initiated efforts to adopt solar energy solutions.

- Despite achieving lower emission intensity in FY23-24, the metric's deterioration in FY24-25 demonstrates that isolated process enhancements cannot substitute for enterprise-wide low-carbon transition programs.

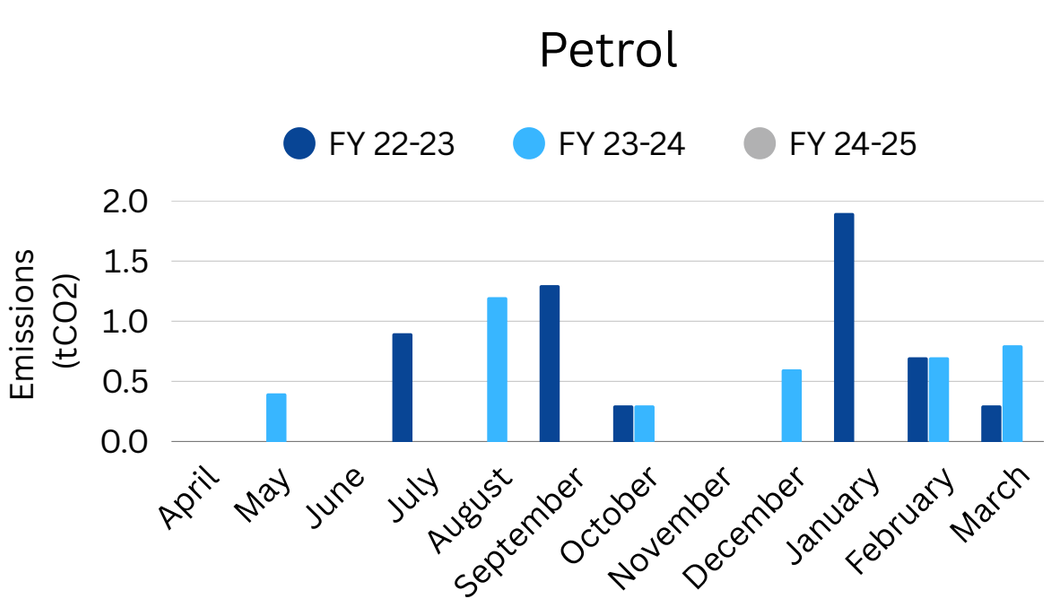
Carbon Emissions Assessment

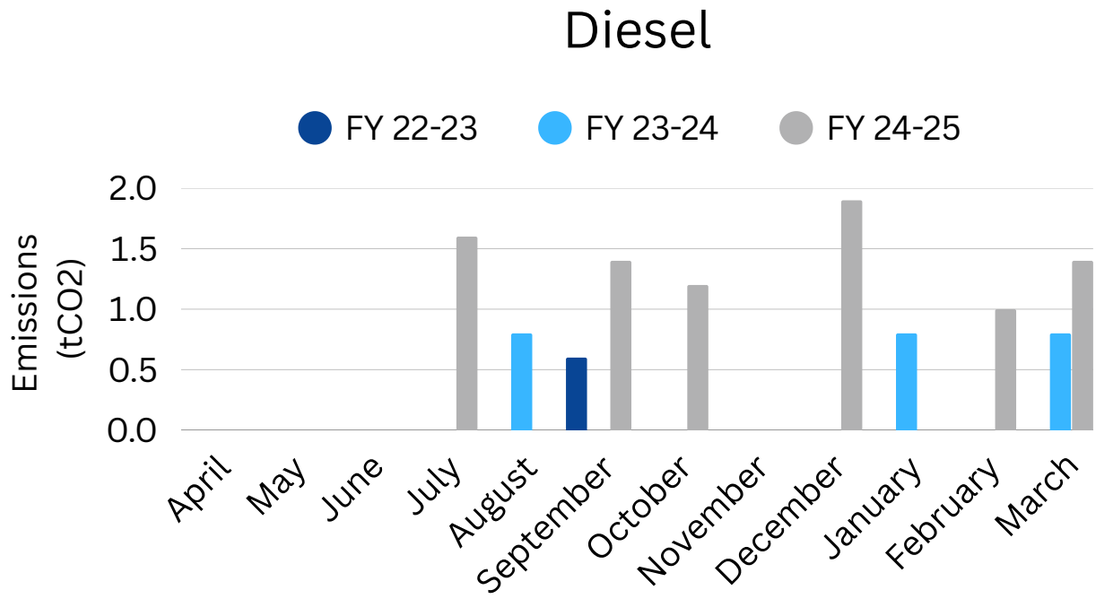
Stationary Combustion



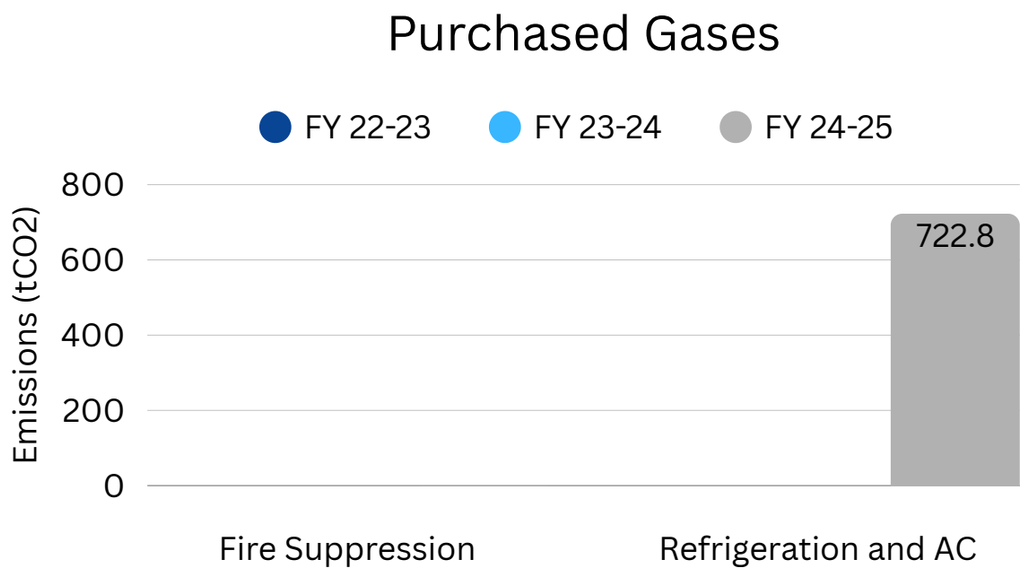


Mobile Combustion

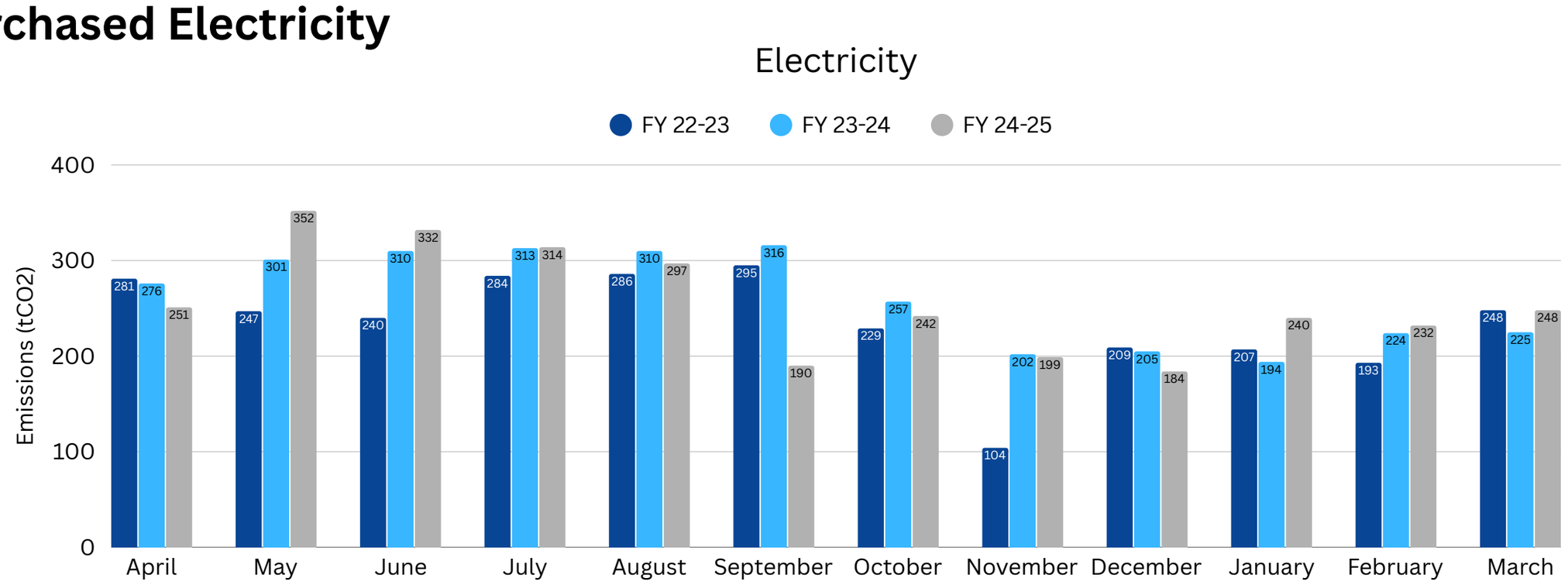




Purchased Gases



Purchased Electricity



Peer Analysis: Sustainability

These findings present a competitive landscape analysis, benchmarking Deki Electronics against leading global and regional capacitor manufacturers. It highlights relative strengths in emissions management, renewable adoption, and certification gaps to inform strategic positioning.

	TDK Corporation (Global)	Vishay Intertechnology	Globe Capacitors Pvt. Ltd.	Tibcon (Tibrewala Electronics)	Jimcap / Indtech / Desai Electronics	Deki Electronics
Total Emissions (tCO_2e) as per 2023/2024 reports	Scope 1+2: 827,300 Scope 3: 19.5M+ no data disclosed for India	– Emissions undisclosed for India	– Emissions undisclosed	– Emissions undisclosed	– Emissions undisclosed	3844
Scale	1–2 trillion capacitors/ year-worldwide, no data disclosed for India	Global operations (numbers unclear)	110 million capacitors in 2024	Regional manufacturer	Regional manufacturer	Regional small-to-mid scale
Renewable Energy	55.2% global; 100% in Japan since Jul 2023	Solar pilots underway	100 kWh solar (partial plant)	On-site solar power plant	None disclosed	None as of now (In process of adoption)
Key Targets / Progress	No Specific emissions target data is available for India	25% reduction since 2018, 30% target by 2025; SBTi-validated	ISO 14001 certification gained, no emissions targets set	No specific emissions targets set, only CSR activities are conducted	ISO 9001 Certification only, no emission targets set	ISO 14001, ISO 45001, ISO 50001 certification, Emission accounting progress, reduction targets to be set

Key Insights:

Leadership in Carbon Management:

TDK and Vishay demonstrate superior environmental stewardship through robust carbon accounting and comprehensive reporting systems compared to industry peers, signaling Deki's alignment with best-in-class sustainability practices.

Renewable Energy Adoption Gap:

While TDK and Vishay maintain substantial renewable energy portfolios that deliver cost optimization and risk reduction benefits, most regional competitors remain limited to pilot-scale initiatives or lack renewable programs entirely, representing a significant competitive disadvantage.

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Certification-Performance Correlation:

Companies with established frameworks including Science Based Targets initiative (SBTi), ISO 14001/45001 certifications, and RE100 commitments—consistently achieve more ambitious decarbonization targets while building stronger stakeholder trust and market credibility.

Deki Electronics has been an ISO 14001, ISO 45001 and ISO 50001 certified company for the past 18 yrs and has consistently demonstrated commitment to environmental responsibility through effective initiatives in energy conservation and the principles of reduce, reuse and recycle. However, in the current global context, there is pressing need to adopt comprehensive low carbon methodologies and recognized sustainability certifications to align with evolving customer expectations and ESG focused market requirements.

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Recommendations

- **Emission Reduction Focus**:
- Continue efforts to reduce Scope 1 emissions and prioritize renewable energy adoption to address rising Scope 2 emissions.
- Understanding process based energy/fuel usage can lead to better energy efficiency via data
- **Sustainability Reporting:**
- Strengthen data collection and reporting processes for future periods to ensure consistency, reliability, and transparency.

Short-Term Recommendations:

- Transition to Renewable Energy:
- Implementing a renewal energy agreement is key to driving down scope 2 emissions, demonstrating environmental leadership.
- Consider investing in solar panel installations.
- Energy Efficiency Improvements:
- Implement immediate equipment upgrades such as LED lighting, sensor-based controls, and machinery optimization to reduce electricity consumption.
- Refrigerant Management:
- Introduce stringent leak detection and management programs for refrigerants, specifically targeting HFCs with high global warming potential.

Medium-Term Recommendations:

- Vendor Collaboration and Training:
- Provide comprehensive emissions calculation training to vendors for better accuracy in data reporting and informed decision-making.
- Support vendors in transitioning toward renewable energy sources and adopting sustainable manufacturing processes.
- Fleet and Fuel Management:
- Begin transitioning fleet vehicles to hybrid or electric models.
- Optimize logistics routes and implement fuel-efficient driving practices to reduce Scope 1 emissions.
- Production Planning:
- Introduce detailed production planning strategies to minimize resource waste, enhance resource efficiency, and streamline transportation.
- Alternative Refrigerants:
- Research and gradually transition to refrigerants with lower global warming potential to significantly mitigate environmental impacts.

Long-Term Recommendations:

- Comprehensive Scope 3 Evaluation:
- Conduct an extensive Scope 3 emissions assessment to understand the environmental impacts across the value chain thoroughly.
- Materiality Assessment and Strategic Planning:
- Carry out a detailed materiality assessment using the 2025-2026 period as the base year to establish clear emissions baselines and priorities.
- Develop a tailored, strategic sustainability roadmap based on the materiality assessment outcomes to move towards Net Zero systematically.
- Supply Chain Resilience and Sustainability:
- Collaborate deeply with vendors to reduce emissions intensity throughout the supply chain.
- Build resilience and sustainability into the entire operational and supply chain network, ensuring alignment with long-term environmental objectives.
- Waste Reduction Initiatives:
- Strengthen sustained waste minimization and recycling initiatives company-wide, further complementing existing efforts like biodegradable packaging.

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Annexure

Scope 1, 2, and Scope 3 (Fuel & Energy) Emission Calculation – Simple Overview

Scope 1 and Scope 2 emissions have been calculated using international standards (GHG Protocol v3) and emission factors from DEFRA, US EPA, and CEA India, based on fuel and electricity consumption data from Deki Electronics' operations.

Scope 3 emissions are not fully calculated yet. However, the "fuel- and energy-related activities" category under Scope 3 is included because it can be estimated directly from Scope 1 and 2 data (for example, accounting for emissions from the production and transport of the fuels and electricity already used by the company).

In short:
Scope 1: Direct emissions from fuels used on-site (like diesel, natural gas).
Scope 2: Indirect emissions from purchased electricity.
Scope 3: Fuel- and energy-related emissions are included since they relate to existing Scope 1 and 2 energy use.
All calculations are done using Fitsol's Kyoto carbon accounting platform for accuracy and transparency.

2. Standards & Methodology
Guidelines Used:
GHG Protocol v3 (global standard for GHG accounting)
Emission Factors Sourced From:
DEFRA (UK)
US EPA (USA)
CEA (India)

3. Data Collection
Energy Data is Collected from utility bills, fuel purchase records, and equipment logs.
Activity Data Includes quantities of fuel consumed, electricity used, and other relevant operational data.
Data checked for accuracy and consistency before calculations.

4. Calculation Approach
Step 1: Identify all emission sources (e.g., diesel generators, company vehicles, grid electricity).
Step 2: Collect activity data for each source (e.g., liters of diesel, kWh of electricity).
Step 3: Apply the correct emission factor to each activity data point.
Step 4: Calculate emissions for each source:
Emissions (tCO_2e) = Activity Data × Emission Factor
Step 5: Sum all emissions to get total Scope 1 and Scope 2 values.

5. Tools Used
Kyoto Platform:
All calculations and reporting are managed through Kyoto, Fitsol's proprietary carbon accounting system, ensuring transparency and consistency.

6. Reporting
Results: Emissions are reported annually, with breakdowns by source and year.
Recommendations: Insights and actions for emission reduction are provided based on findings.

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Annexure

Sources for Competitor Analysis:

https://www.tdk.com/en/information/202307_03.html
https://www.tdk.com/en/sustainability/environmental_responsibility/climate-action
https://www.tdk.com/en/sustainability/environmental_responsibility/sustainability_data/0310.html
https://www.tdk.com/en/sustainability/environmental_responsibility/sustainability_data/0341.html
https://www.tdk.com/en/news_center/press/20230705_01.html https://www.tdk-electronics.tdk.com/en/373618/tech-library/articles/company-trends/company-trends/tdk-receives-sbt-certification-of-its-greenhouse-gas-reduction-targets/3265574
https://www.tdk.com/en/news_center/press/20250313_01.html
https://www.tdk.com/en/sustainability/sustainabilityjourney
https://www.tdk.com/en/sustainability/index.html https://www.tdk.com/en/sustainability/editorial_policy
https://www.ecomal.com/fileadmin/downloads/Vishay_ESG_Report_2023.pdf
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https://www.electronicsforyou.biz/headlines/desai-electronics-opens-new-facility-doubles-installed-capacity/ https://www.acuite.in/documents/ratings/revised/19098-RR-20160822.pdf
https://www.electrikkart.com/uploaded_files/products/mpr10.10.250vac-.pdf
https://ditchcarbon.com/organizations/tdk https://ditchcarbon.com/organizations/vishay-intertechnology-inc https://sciencebasedtargets.org/companies-taking-action https://www.msci.com/esg-ratings
https://www.sustainalytics.com/esg-ratings

“Sustainability is not just about adopting the latest energy-efficient technologies or turning to renewable sources of power.

Sustainability is the responsibility of every individual every day. It is about changing our behaviour and mindset to reduce power and water consumption, thereby helping to control emissions and pollution levels.”

- Joe Kaeser

Prepared By - Fitsol Supply Chain Solutions