PRODAN Climate Report 2025

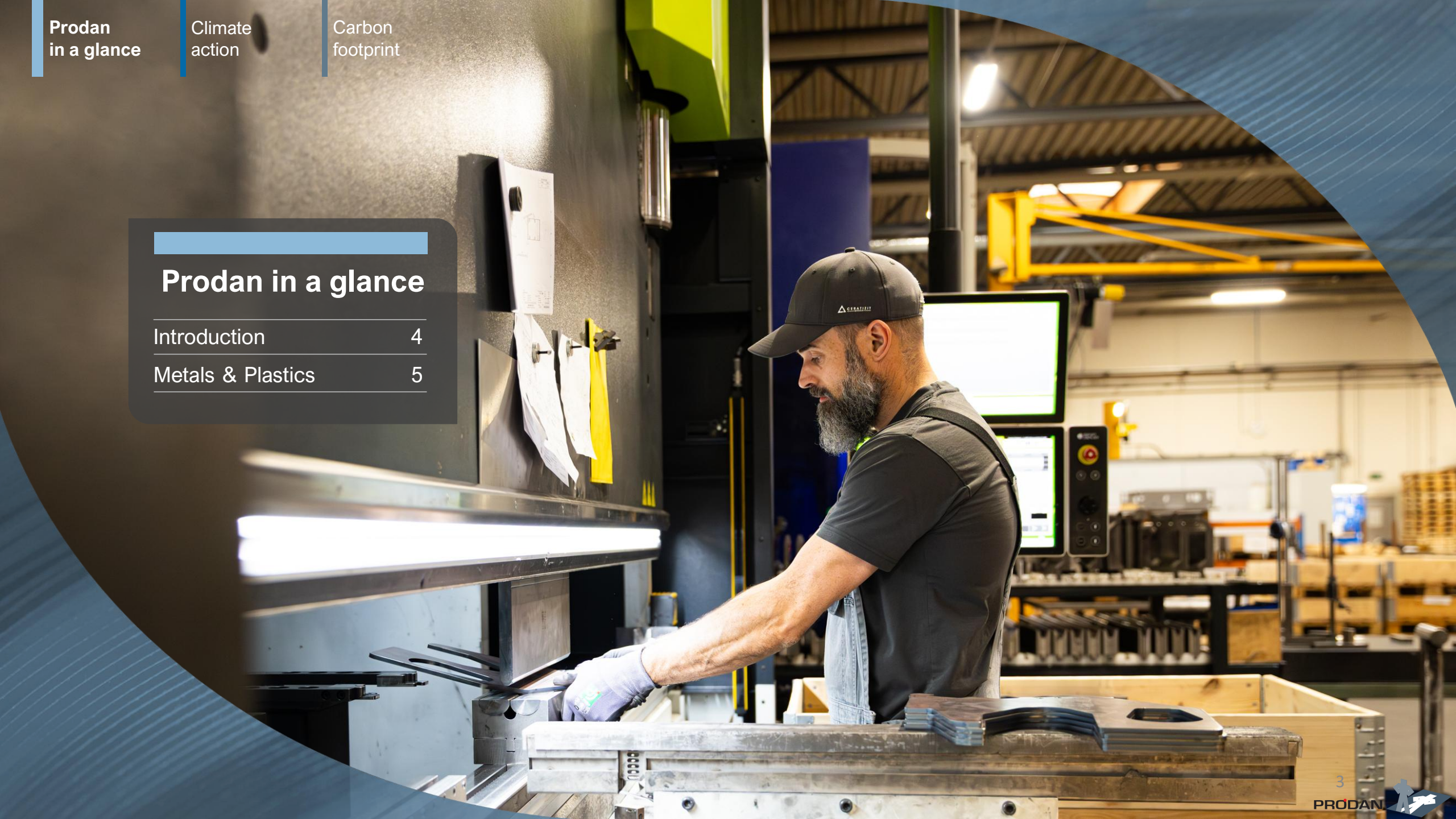
Carbon Footprint according to the GHG Protocol

PRODAN

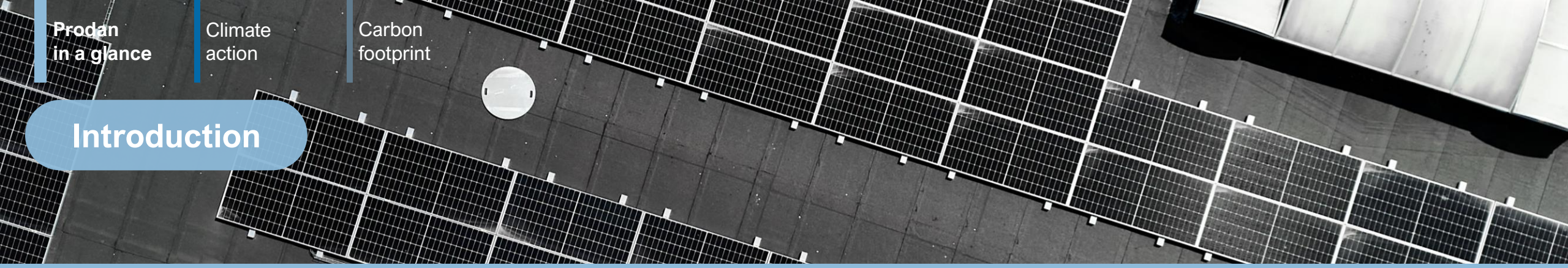
Prodan calculates their full direct and indirect emissions since 2022.

Prodan produced more than 950,000 kWh of electricity from own solar panels.

Prodan shows a 22% reduction of the total emissions from the baseline year of 2022.



Prodan in a glance



Introduction

Prodan's commitment to environmental responsibility has taken shape over nearly five years of consistent climate reporting. As a leading Danish material manufacturer, the company recognizes that meaningful progress on climate action rests on a foundation of accurate emissions measurement and transparent accountability.

Why Emissions Matter

Greenhouse gas emissions reflect a company's true environmental footprint. They tell the story of where energy comes from, how resources are transformed and what happens to products after they leave the factory. By quantifying these emissions with precision, Prodan gains critical insight into its operations and identifies where meaningful reductions are possible. This transparency is not merely a reporting exercise; it drives real operational improvements, unlocks energy efficiency gains and catalyses a shift toward cleaner practices across the entire organization. Measurement transforms abstract environmental concerns into concrete operational targets. The scope of emissions responsibility extends in two directions, each requiring different strategies and different partnerships.

Direct Emissions: Local Accountability

Direct emissions come from Prodan's own activities: heating facilities, powering transportation, running industrial processes that rely on fossil fuels. These emissions represent the company's most immediate and direct responsibility. This is where Prodan has the greatest control and where operational changes can deliver the quickest impact. Addressing direct emissions drives innovation. Rather than accepting energy consumption as fixed, Prodan examines every process: Can this operation run more efficiently? Can we switch to renewable electricity? Can we electrify our fleet? Can we optimize our heating system with a heat pump to reduce heating emissions? These questions reshape how the company operates at a fundamental level.

Indirect Emissions: Global Outlook

Indirect emissions span the broader value chain: purchased electricity from suppliers who generate it, operations at suppliers' facilities, transportation and distribution of materials, customer use of products, and end-of-life disposal or recycling. These indirect impacts are often larger than direct emissions, yet they involve partners and customers beyond Prodan's operational control. Acknowledging these impacts means recognizing Prodan's role within a larger system and supply ecosystem. The company cannot solve climate change alone, but it can influence outcomes through partnership. Prodan engages with suppliers to improve their environmental performance, works with logistics partners on distribution efficiency, and communicates with customers about the climate footprint embedded in products. By mapping the full lifecycle, Prodan identifies leverage points where collaboration can drive systemic improvement.

Looking forward

This report documents where Prodan stands today: what the company has measured, what it has learned, and where progress has been made. It also charts the path ahead, identifying opportunities for deeper cuts and new areas of focus. Climate action is not a destination but a direction. Prodan remains committed to that direction.

Metals & Plastics

Prodan operates at the intersection of two critical industries: metals and plastics. Both sectors are fundamental to modern economies, yet both carry significant environmental consequences that demand attention.

The Industry Challenge

The metals industry is highly energy-intensive. Primary metal production accounts for roughly 7-8% of global industrial emissions. Smelting, casting, rolling and welding all consume significant energy. Raw material extraction adds further impact through resource depletion and landscape disruption.

The plastics sector generates over 400 million tons annually. Emissions arise throughout its lifecycle: from petrochemical extraction and refining upstream, through energy-heavy conversion and molding downstream and from waste and end-of-life considerations. Both sectors face pressure to reduce carbon output and adopt circular practices. For a company like Prodan operating across both industries, the responsibility is real and the opportunity for impact is significant.

Prodan's Response

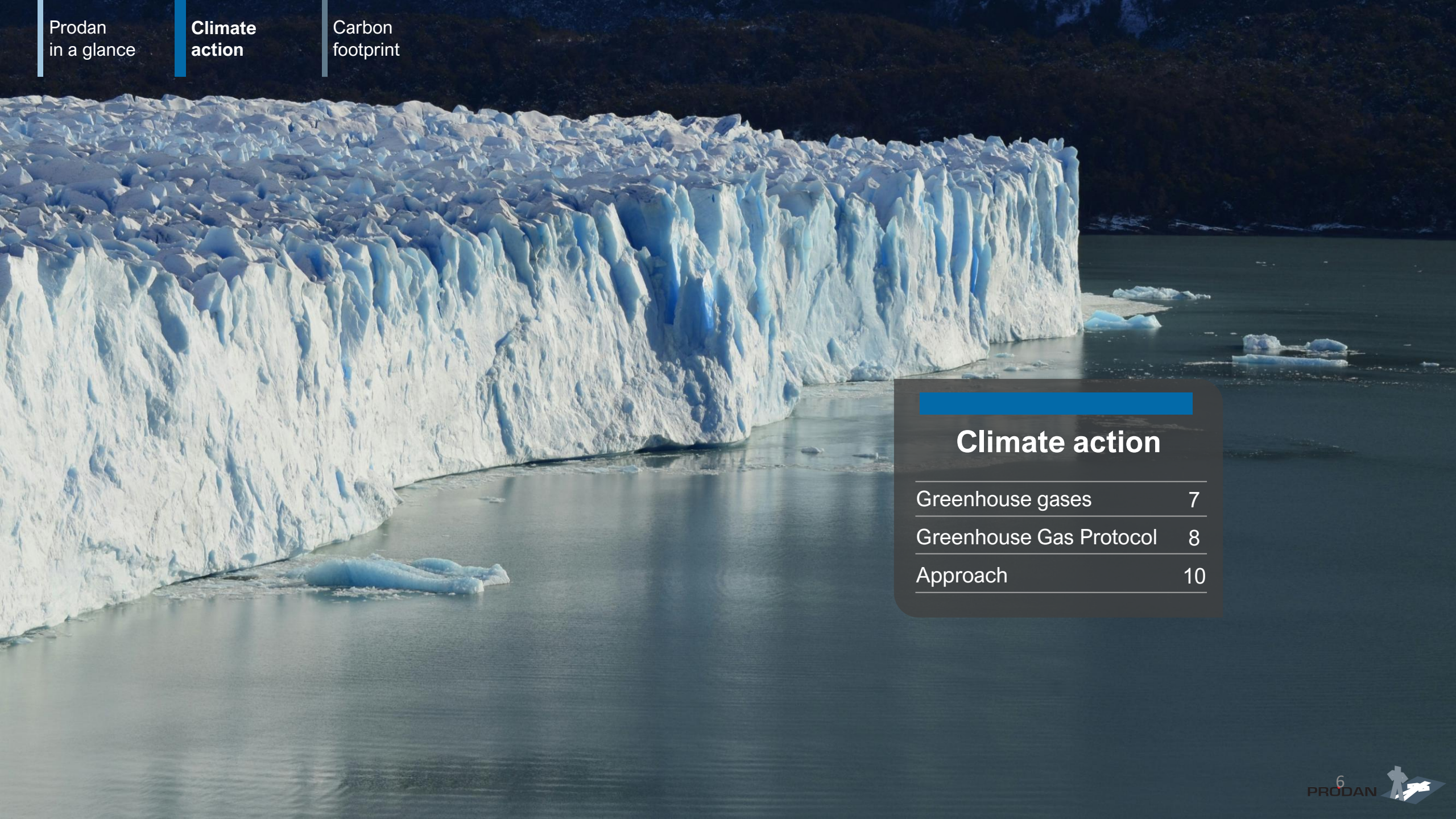
Prodan recognizes that operating as a materials manufacturer means taking accountability for environmental impact. Processing metals and plastics requires substantial energy and generates emissions. The company manages this actively. Prodan holds ISO 14001 certification and maintains an environmental policy with evolving targets each year. Current initiatives include enhanced natural lighting in facilities, dust and emissions control systems, own electricity production from renewable sources and structured waste separation. These directly reduce operational impact.

Beyond daily operations, Prodan demonstrates that efficiency and emissions reduction are achievable in metals and plastics manufacturing. Circular production methods, material recovery and energy optimization are not theoretical here. By setting this example, the company influences peers and supply chain partners across the sector.

Moving Forward

Demand for metals and plastics continues to grow, yet conventional production methods are unsustainable. The shift toward lower-carbon processes and circular models is underway but uneven across the industry.

Prodan's work matters. By reducing emissions and showing that environmental responsibility aligns with efficiency, the company shapes what modern materials manufacturing can be.



Climate action

Greenhouse Gases

Understanding Greenhouse Gases and Climate Change

The Earth's atmosphere maintains a delicate equilibrium, trapping heat and supporting life. But human activity has altered this balance. We now emit greenhouse gases at rates that warm the planet and disrupt the systems we depend on.

The Gases That Matter

Several gases trap heat in the atmosphere. Carbon dioxide (CO2) comes from burning fossil fuels, manufacturing, and forest clearing. Methane (CH4) escapes from agriculture, livestock, and landfills. Nitrous oxide (N2O) releases from farming and industrial facilities. Fluorinated gases, which are synthetic, appear in refrigeration and other industrial applications.

Each of these gases contributes differently to warming. Understanding which ones we emit and in what quantities helps guide where to focus reduction efforts.

What Climate Change Means

As greenhouse gases accumulate, global temperatures rise and weather patterns shift. The consequences are real: oceans rise, storms intensify, rainfall becomes unpredictable, and ecosystems destabilize. These changes threaten food security, water availability, and economic stability across regions.

Measuring Warming Impact

Scientists use a standard called Global Warming Potential (GWP) to compare how much different gases warm the planet. Carbon dioxide is the baseline, with a GWP of 1. Other gases are rated against this standard.

Methane warms the climate 28 to 36 times more than CO_2 over a century. Nitrous oxide is 265 to 298 times more potent than CO_2. These differences matter when deciding which emissions to reduce first.

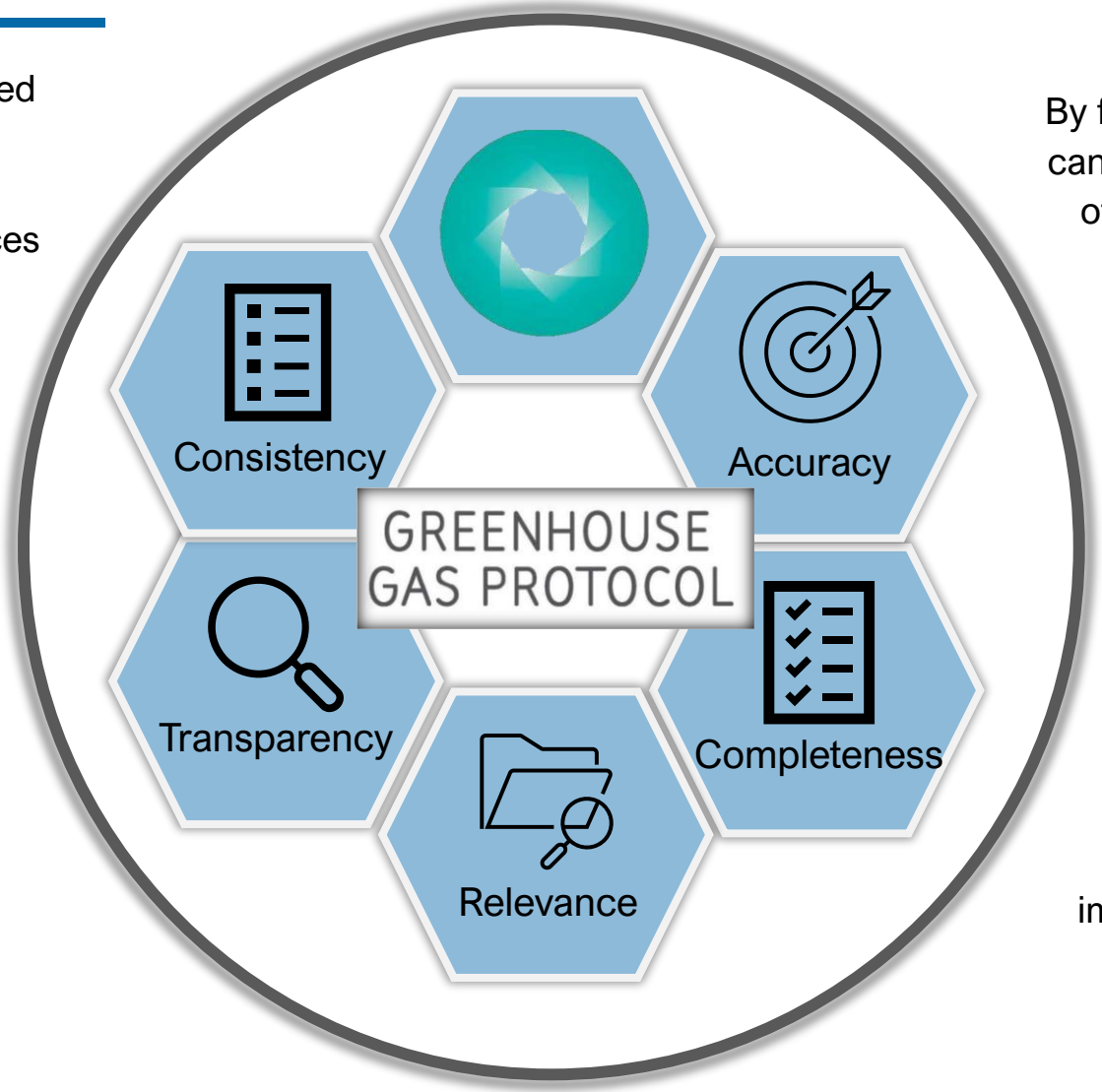
Moving Forward

Reducing emissions requires understanding what we emit, where it comes from, and how it affects the climate. By targeting high-impact gases and shifting toward low-carbon alternatives, we can slow warming, protect ecosystems, and build a stable future.

Prodan uses GWPs from IPCC's Sixth Assessment Report (AR6)

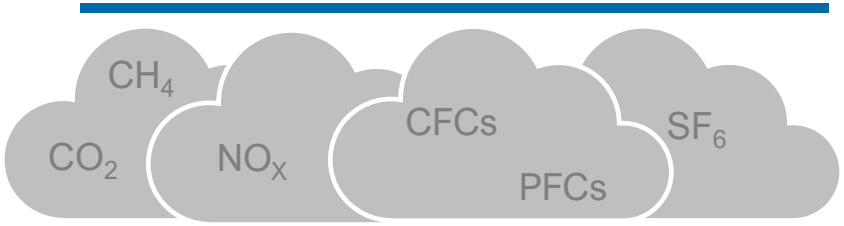
Greenhouse Gas Protocol

The GHG Protocol is a widely recognized global framework for measuring and managing greenhouse gas emissions. It was developed by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD) to provide a standardized approach for emissions accounting and reporting. The framework supports organizations in identifying emission sources, quantifying their carbon footprint and applying consistent methodologies across reporting periods. This allows for reliable tracking of emissions over time, as well as the development of reduction targets and mitigation strategies.



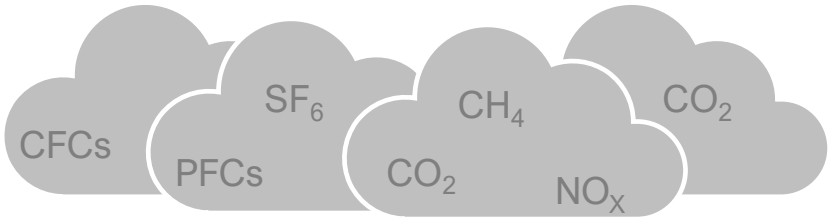
By following the GHG Protocol, organizations can improve the transparency and credibility of their disclosures, enabling stakeholders, investors, and customers to rely on comparable and decision-useful data. At the same time, it supports internal decision-making by highlighting key emission drivers and opportunities for efficiency improvements and cost reductions. It also provides a consistent foundation for setting measurable climate targets and monitoring progress against them over time. Overall, the GHG Protocol provides a structured basis for understanding, managing, and reporting environmental impacts, while supporting broader climate-related commitments.

Greenhouse Gas Protocol



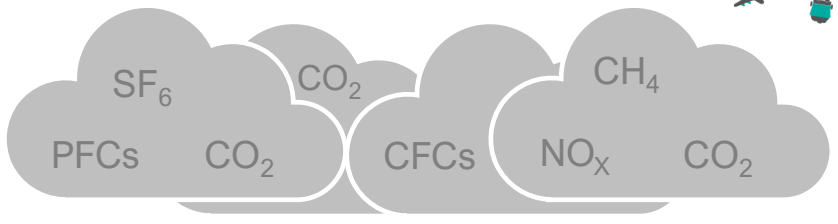
Scope 1

Scope 1 GHG emissions are generated from equipment that is owned or controled by Prodan. The emissions from fuels that are combusted from stationary and mobile sources (vehicles, boilers, generators, etc.). Other GHG emissions like refrigerant and coolant gases are also included in Scope 1 emissions.



Scope 2

Scope 2 GHG emissions are associated with the purchase of electricity, warm water, steam or cooling. They are generated during the production of the energy consumed by Prodan, but occur at sources outside of the company's boundaries.



Scope 3

Scope 3 GHG emissions occur throughout Prodan's value chain. They are the result of activities that are not directly owned or controlled by the company but are influenced by its operations. Scope 3 emissions include 15 upstream & downstream subcategories, which are further explained in the following chapter.

Approach

In accordance with the GHG Protocol Corporate Standard, three approaches can be used to define organizational boundaries: the equity share, financial control, and operational control approaches. Prodan has selected the operational control approach, as it has full authority to implement and enforce its operating policies. Under this approach, Prodan accounts for 100% of greenhouse gas emissions from operations over which it exercises operational control, regardless of ownership share.

Inventory boundaries define which emission sources and activities are included in the GHG inventory. In this case, Prodan's boundaries cover all activities associated with its central facility in Randers, Denmark, including all relevant emission sources identified through the data collection process.

Based on the applied methodology and the primary data collected, the GHG inventory for the 12-month period ending 31 December 2025 has been prepared in line with GHG Protocol requirements and relevant ethical standards.

The work follows the principles of relevance, completeness, consistency, transparency, and accuracy, as outlined by the GHG Protocol. The Danish Code for Research Integrity and internal business ethics policies were also considered. A structured system for data collection, validation, and quality control is in place to ensure the reliability of the reported information and compliance with professional standards.

The assessment was carried out internally by Prodan, using the Danish tool Klimakompasset. Emission factors and measurement methods reflect the best available data as of 30 March 2026. The primary data, for which Prodan is responsible, correspond to the same reference date.

Carbon footprint

Prodan's emissions

Scope 1 greenhouse gas emissions

Prodan takes a proactive approach to sustainability, constantly striving to reduce GHG emissions and to minimize the environmental impact. Through the implementation of innovative technologies, operational improvements and the adoption of renewable energy sources, **Prodan is committed to achieving emissions reductions compared to the baseline year of 2022**.

By providing transparent and comprehensive reporting on the Scope 1 and Scope 2 GHG emissions, Prodan aims to foster trust and accountability with stakeholders.

Scope 1 GHG emissions

The total Scope 1 greenhouse gas (GHG) emissions for Prodan amount to **36.28 t CO_2e**, reflecting direct emissions from sources owned or controlled by the company. These emissions are primarily associated with fuel combustion in company-operated assets and process-related activities.

Emissions from energy and process-related activities are comparatively minor, totaling 1.88 t CO_2e. Within this category:

- Process emissions (mainly from welding gases) contribute 1.87 t CO_2e, making them the second-largest source overall.
- Fuel combustion for stationary energy use (natural gas and propane) contributes only 0.01 t CO_2e, suggesting limited reliance on on-site heating or process energy systems.

The emissions profile clearly shows that mobile combustion sources (vehicles) are the critical hotspot for Prodan.

Emission sources at Prodan

Scope 1

Combustion emissions from company vehicles

Combustion emissions from natural gas & propane.

CO_2 emissions from welding gases.

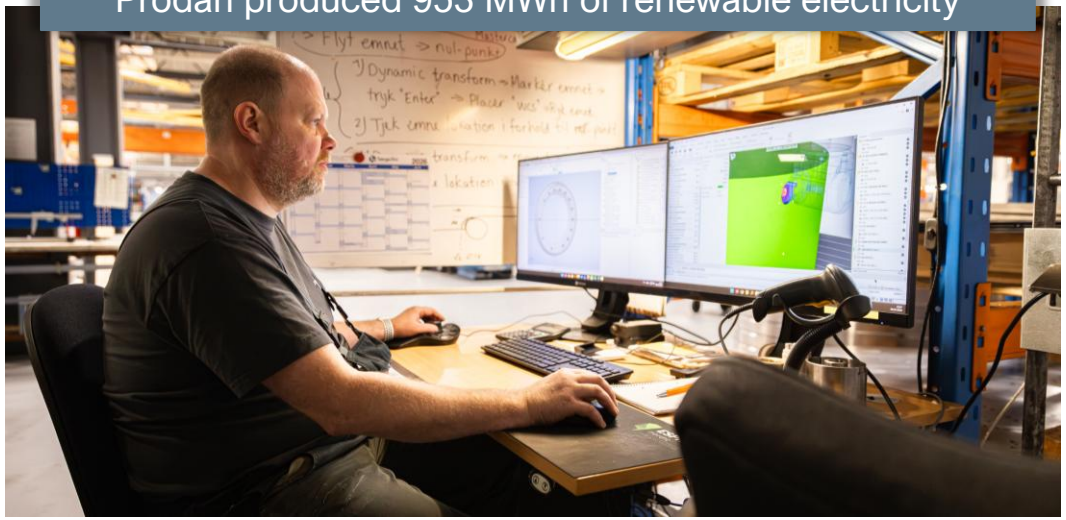
Scope 2

Indirect emissions from the production of purchased electricity.

Prodan's emissions

Scope 2 greenhouse gas emissions

Prodan produced 953 MWh of renewable electricity



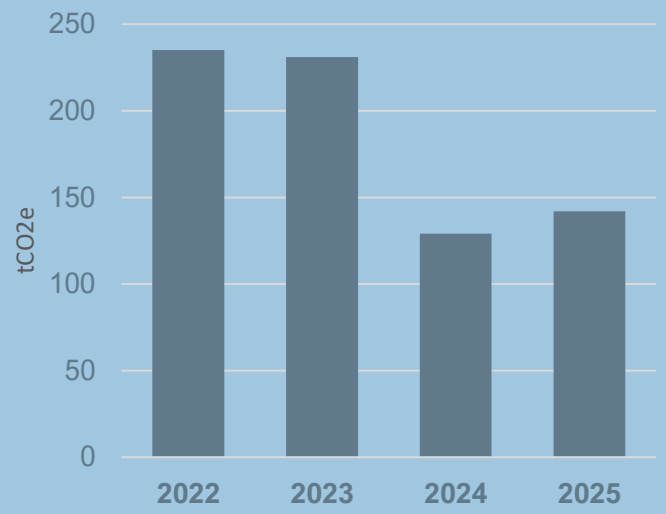
Scope 2 GHG emissions

During the reporting period, the **total market-based Scope 2** GHG emissions were **177.7 tCO_2e**. Prodan produced a total of 953 MWh from the own solar panels, out of which 558 MWh were consumed internally, and the rest was sold to the local network. Prodan also procured renewable electricity certificates, however, they did not suffice for the total electricity consumption. This lead to the increase of market-based electricity emissions from the previous year.

When the location-based approach is used, the total Scope 2 emissions are equal to **106 tCO_2e**, which is **less than half of the emissions of 2025**, due to the reduced electricity intensity of the Danish electricity network.

Prodan actively implements energy-saving measures, such as energy-efficient lighting to reduce the electricity demand and subsequently consume less electricity for its own operations.

Scope 1 & 2 GHG emissions



Prodan understands the importance of transitioning to renewable energy sources to further mitigate the environmental impact. By partnering with renewable energy providers and actively engaging on-site renewable energy generation through solar, Prodan aims to increase the share of renewable energy in the electricity supply and decrease the reliance on fossil fuel-based energy.

Value chain emissions

Scope 3 emissions

Scope 3 Categories in tons of CO2e	2025	
Category	**Upstream**	**Downstream**
1. Purchased goods and services	7,201.62	
2. Capital goods	256.92	
3. Fuel- and energy-related activities	68.48	
4. Upstream transportation and distribution	50.84	
5. Waste in operations	159.89	
6. Business travel	2.67	
7. Employee commuting	119.81	
8. Upstream leased assets		
9. Downstream transportation and distribution		
10. Processing of sold products		
11. Use of sold products		
12. End-of-life treatment of sold products		216.06
13. Downstream leased assets		
14. Franchises		
15. Investments		
Total CO2e emissions(t CO2e)	**8,076.29**	

Value chain emissions

Scope 3 GHG emissions

Prodan focuses on understanding its full climate impact, measuring and reporting Scope 3 GHG emissions across the value chain is a key priority, in alignment with the GHG Protocol.

Scope 3 emissions in a nutshell

Scope 3 emissions are the indirect greenhouse gas emissions that occur across a company's value chain, both upstream and downstream, including activities like raw material production, transportation, product use, and disposal. They are defined under the GHG Protocol and typically make up the largest share of a company's total carbon footprint.

Prodan's Scope 3 (indirect) emissions represent the largest share of the company's carbon footprint, accounting for operational impacts across the value chain from raw material procurement through product end-of-life. In 2025, Scope 3 emissions reached 8,076 tCO2e, marking a significant inflection point in the company's emissions trajectory.

After three consecutive years of reductions, declining from 10,523 t CO2e in 2022 to a low of 6,651 t CO2e in 2024, the 2025 results represent a 21.5% increase compared to the prior year. This reversal reflects the complex relationship between business growth and environmental impact, and underscores the importance of decoupling expansion from emissions intensity.

The increase is primarily driven by two factors: enhanced business activity and a substantial rise in purchases of metals and plastics for manufacturing. While this growth is positive from a commercial perspective, it has resulted in proportionally higher upstream emissions, particularly from Category 1 (Purchased goods and services), which comprises the largest share of Prodan's Scope 3 footprint at 7,201.62 t CO2e.

Results Overview

Prodan's four-year emissions profile reveals a volatile but ultimately growth-correlated pattern:

- 2022: 10,523 t CO2e (baseline year)
- 2023: 8,108 t CO2e (23% reduction)
- 2024: 6,651 t CO2e (18% reduction, lowest point)
- 2025: 8,076 t CO2e (21.5% increase)

The 2025 increase, while notable, remains 23% below the 2022 baseline, indicating that historical efficiency improvements have not been entirely reversed.

That said, the upward trend reflects increased business activity and growth. If managed proactively, through continued process optimization, energy efficiency measures, and emissions monitoring, Prodan is well positioned to maintain its gains while scaling operations. With the right controls in place, it can avoid reverting to pre-2022 emission levels and instead continue improving overall efficiency.

Value chain emissions

Scope 3 upstream emissions

Key Drivers of 2025 Increase

The 21.5% year-over-year increase in Scope 3 emissions is directly attributable to business expansion and supply chain intensity:

1. Increased metals & plastics procurement

Prodan's manufacturing operations expanded significantly in 2025, necessitating higher volumes of metals and plastics purchases. These materials are carbon-intensive to produce; metals extraction and processing are particularly energy-demanding, while plastics production relies on fossil fuel feedstocks. As Category 1 emissions account for 89% of total Scope 3 output, any increase in material procurement cascades into proportional emissions growth.

2. Business growth outpaced efficiency gains

While Prodan has implemented operational improvements that reduced absolute emissions from 2022 to 2024, these gains have been offset by the scale of 2025 business activity. This highlights the critical distinction between absolute and intensity-based reductions. The company's historical progress masked a dependency on stable or declining production volumes; growth now requires deliberate decoupling of expansion from emissions.

Positive Context: Emissions Remain Below 2022 Baseline

Despite the 2025 increase, the company's total Scope 3 emissions remain 23% lower than 2022 levels. This suggests that foundational improvements in supplier selection, material efficiency, or logistics networks remain in place. The challenge is ensuring that future growth does not erode these gains.

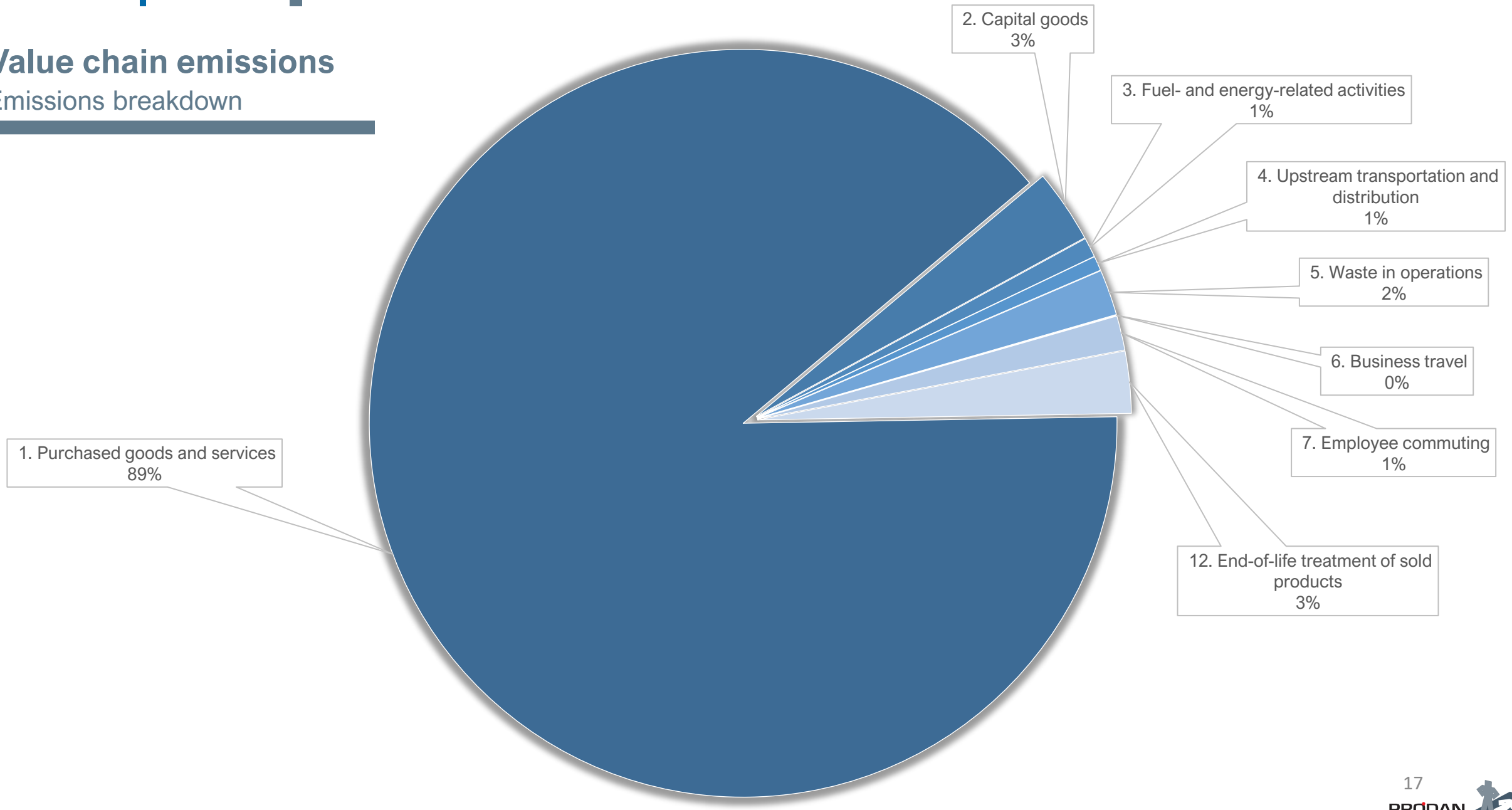
Supply Chain Concentration Risk

The concentration of emissions in Category 1 (Purchased goods and services) creates both challenge and opportunity. Approximately 97% of Prodan's Scope 3 footprint is supply-chain–dependent, leaving limited leverage in operational categories like waste, travel, or commuting. However, this concentration also presents a strategic opportunity: targeted supplier engagement, material substitution, and procurement practices focused on low-carbon alternatives can yield disproportionate emissions reductions.

Prodan focuses on continuously improving resource efficiency in its manufacturing processes while delivering products that help customers and partners operate more efficiently.

Value chain emissions

Emissions breakdown



Value chain emissions

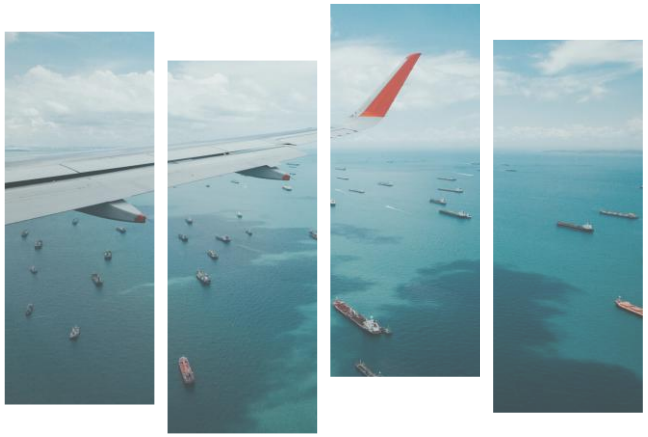
Emissions breakdown

Prodan's Scope 3 emissions are concentrated in a small number of high-impact categories:

Upstream emissions: 7,860 t CO2e

Purchased goods and services (Category 1):
7,201 tCO2e — The dominant driver of Prodan's Scope 3 footprint, this category captures emissions from the production of raw materials, components, and supplies. The 2025 increase in metals and plastics procurement directly inflates this figure and reflects the company's expanded production volumes.

Capital goods (Category 2):
256 tCO2e — Emissions from manufacturing equipment and infrastructure investments.



Fuel- and energy-related activities (Category 3):
68 tCO2e — Indirect emissions from the extraction and delivery of purchased fuels and electricity.

Upstream transportation & distribution (Category 4):
50 tCO2e — Logistics emissions for inbound materials.

Waste in operations (Category 5):
159 tCO2e — Emissions from disposal and treatment of waste generated during manufacturing.

Business travel (Category 6):
3 tCO2e — Minimal contributor; reflects the business travel activity of Prodan for sales, conferences and other outreach activities.

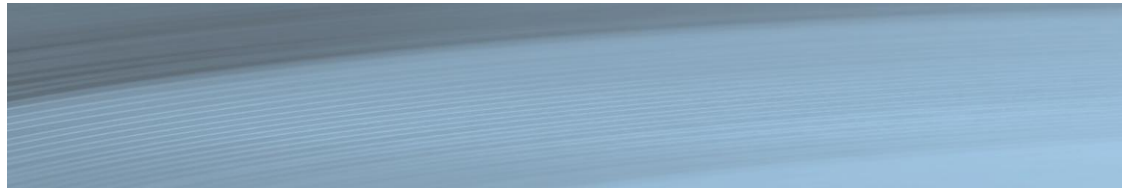
Employee commuting (Category 7):
120 t CO2e — Scope 3 emissions from employee transportation to work.

Downstream emissions: 215 tCO2e

End-of-life treatment sold products (Category 12):
216t CO2e — The sole downstream category with reported emissions, reflecting waste management and recycling processes.

Value chain emissions

Emissions breakdown



Category 1: Purchased Goods and Services
2024: 5,908.98 t CO2e → 2025: 7,201.62 t CO2e | +22.0% increase
Category 1 is the largest source at 89.1% of total Scope 3 emissions. The 1,292 tonne increase reflects expanded procurement of metals and plastics. Both materials are carbon-intensive to produce. Here there is an opportunity: switching to lower-carbon suppliers, increasing recycled content, or expanding circular economy approaches could yield significant reductions.

Category 2: Capital Goods
2024: 264.70 t CO2e → 2025: 256.92 t CO2e | −2.9% decrease
Capital goods emissions declined slightly, suggesting either fewer major investments or more efficient equipment purchases. Monitoring is important as the company scales.

Category 3: Fuel- and Energy-Related Activities
2024: 45.01 t CO2e → 2025: 68.48 t CO2e | +52.1% increase
Energy emissions jumped 52%, likely from higher energy consumption supporting increased production. The company could assess further renewable energy procurement or operational efficiency improvements.

Category 4: Upstream Transportation and Distribution
2024: 59.95 t CO2e → 2025: 50.84 t CO2e | −15.2% decrease
Inbound logistics improved by 15.2% despite higher material volumes, a notable win reflecting successful supply chain optimization. Continued focus here helps offset growth in other areas.

Category 5: Waste in Operations
2024: 11.24 t CO2e → 2025: 159.89 t CO2e | +1,322% increase
Waste emissions jumped 14-fold. This likely reflects either higher waste volumes from expanded manufacturing or better data capture of previously unmeasured streams, or even a change in the emissions calculation software.

Category 6: Business Travel
2024: 0.70 t CO2e → 2025: 2.67 t CO2e | +281% increase
Business travel quadrupled but remains minimal at 0.03% of total Scope 3, likely reflecting post-pandemic travel recovery. This is not a strategic priority given the overall profile.

Category 7: Employee Commuting
2024: 166.76 t CO2e → 2025: 119.81 t CO2e | −28.2% decrease
Commuting fell 28.2%, a solid improvement likely from remote/hybrid work adoption or shifts to lower-emissions transport. This shows successful decoupling of operations from emissions. Maintaining these policies sustains the trend.

Category 12: End-of-Life Treatment of Sold Products
2024: 183.84 t CO2e → 2025: 216.06 t CO2e | +17.5% increase
End-of-life emissions rose 17.5%, proportional to higher sales. The increase is lower than overall growth, suggesting products have relatively efficient end-of-life pathways. Design-for-recyclability and renewable-energy recycler partnerships could improve further.

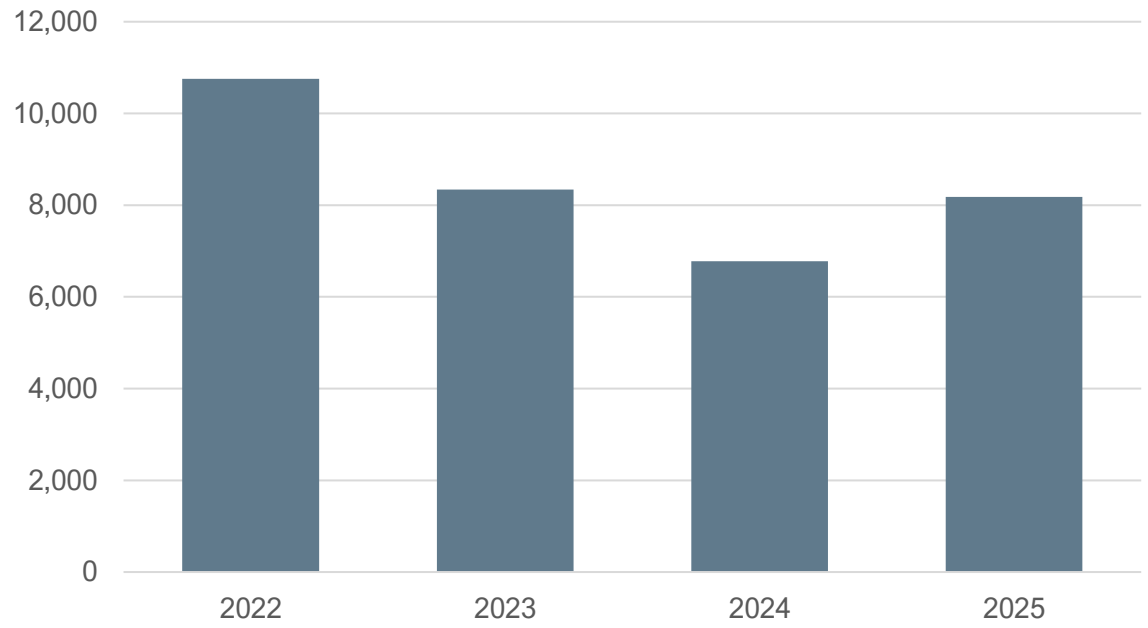
Progress so far

The Four-Year Journey: 2022–2025

- **2022** marked a transformational year for Prodan. The company achieved a remarkable 55% reduction in direct emissions (Scope 1 and 2 combined) through its strategic shift toward renewable electricity sourcing, which eliminated Scope 2 emissions entirely. Simultaneously, Prodan's Scope 3 emissions were reported at approximately 10,524 tonnes, reflecting improved data collection methods that for the first time captured the full scope of the company's supply chain impact, particularly in purchased goods and end-of-life treatment categories.
- **2023** saw continued refinement of Prodan's emissions accounting and operational improvements. Total GHG emissions declined to approximately 8,108 tonnes, demonstrating that the company's commitment to efficiency extended beyond the landmark renewable energy transition of 2022.
- **2024** represented the company's most efficient year to date. Total emissions fell to 6,651 tonnes, a 37% reduction from the 2022 baseline. This improvement reflected sustained focus on supply chain optimization, employee commuting programs, and logistics efficiency gains.
- **2025** marked a reversal of the three-year downward trend. Emissions rose to 8,076 tonnes, which is a 21.5% increase from 2024 and 23% below the 2022 baseline. This increase was driven primarily by business expansion and increased materials procurement for manufacturing.

Understanding the 2025 Increase: Growth vs. Efficiency

The 2025 increase reflects a fundamental dynamic: Prodan's business grew significantly, requiring higher volumes of metals and plastics for manufacturing. **Category 1 (Purchased Goods and Services)** increased from 5,909 tonnes in 2024 to 7,202 tonnes in 2025, a 22% rise that directly correlates with production scaling. However, this growth did not erase Prodan's efficiency gains. Several operational categories continued to improve despite business expansion



Contextualizing Against 2022: Progress Sustained

While 2025's 8,076 tonnes represents a 21.5% increase from 2024, it remains **23% lower than the 2022 baseline of 10,524 tonnes**. Prodan has not abandoned progress; rather, business growth has partially offset gains built on lower production volumes. Renewable electricity and reduced fuel consumption remain in effect, minimizing direct emissions. The challenge lies in the supply chain, where deliberate decoupling strategies are needed to prevent proportional emissions growth.

The Path Forward: Balancing Growth and Sustainability

The 2022–2025 trajectory reveals a key lesson: sustainable growth requires continuous strategy, not one-time actions. While Prodan's renewable energy transition was transformational, it was insufficient alone to offset supply chain growth. The company's achievements in logistics and commuting show that operational improvements can persist through growth with sustained focus. Going forward, prioritizing supply chain decoupling, where 89% of Scope 3 emissions concentrate, through low-carbon suppliers, recycled content and circular economy practices will enable responsible scaling.

Highlights

Renewable electricity production

In 2025, Prodan generated 950,000 kWh of electricity from its own solar panel installations, a significant contribution to the company's energy independence and emissions reduction strategy. Using Denmark's 2025 market-based electricity intensity, Prodan's solar generation avoided approximately 148 tonnes of CO2 equivalent emissions that would have been produced had this electricity been sourced from the Danish grid.

Emissions profile since 2022

Total GHG emissions remain 23% below the 2022 baseline, despite a 21.5% increase from 2024. This demonstrates that Prodan's foundational sustainability improvements in renewable energy, operational efficiency, and supply chain practices have created lasting environmental progress that business growth has not reversed. The company's core sustainability architecture remains intact as production scales, positioning Prodan to decouple future expansion from emissions intensity.