



ZERO EMISSION IN 2035

SUSTAINABILITY AMBITION AND ACTIVITIES

HUTCHISON PORTS ECT DELTA
HUTCHISON PORTS ECT EUROMAX

Rotterdam, March 2021



SUSTAINABILITY AMBITION

Hutchison Ports ECT Rotterdam (ECT) is one of Europe's largest and most advanced container terminal operators. As a company, ECT plays an important economic and a social role. ECT takes its corporate social responsibility seriously. This also means that ECT treats our environment with care.

ECT is conscious of the environmental impact associated with its operations and is committed to protecting the environment and supporting the shift towards a more sustainable society.

ECT endorses the ambition of the European Union and national governments to significantly reduce the carbon footprint of economic activities. ECT has set for itself the ambitious objective to reconstruct the existing ECT Delta and ECT Euromax terminals to zero emission by 2035.

Sustainability has been high on ECT's agenda for decades already. In this respect, ECT has the ambition to seamlessly integrate initiatives and activities related to sustainability into its present and future business processes, thereby taking into account the pace of investments.



WHAT HAS ALREADY BEEN REALISED?

THE NINETIES OF THE LAST CENTURY - NEW CONCEPTS

In the late 1980s and early 1990s, ECT developed the first automated container terminal in the world. This terminal, the Delta/Sea-Land terminal, combined a completely new concept for efficiently handling containers and container vessels with attention for improved energy efficiency, both in terms of operations and hinterland transport. Regarding the latter, the focus was on rail and inland shipping from an early stage, whereby barges were handled from the beginning at the deepsea quays to reduce diesel consumption. ECT already started with the development of an inland network for multimodal and intermodal transport in 1981.



It started with a **VISION**, early nineties:



Automated internal transport



Electrified stack



Scale increase; intermodal

That vision became reality: **VISION → INNOVATION → REALISATION**

The world's first automated container terminal actually came on stream in 1993. This terminal was (and still is) characterised and defined by its automated guided vehicles. Other innovations included the electrified automated stack cranes, the high degree of automation of the entire process and the recovery of energy from the cranes during the loading/unloading process. The ECT Delta terminal was further expanded between 1995 to 2006 with this form of automation.



OPENING EUROMAX TERMINAL ROTTERDAM (2008)

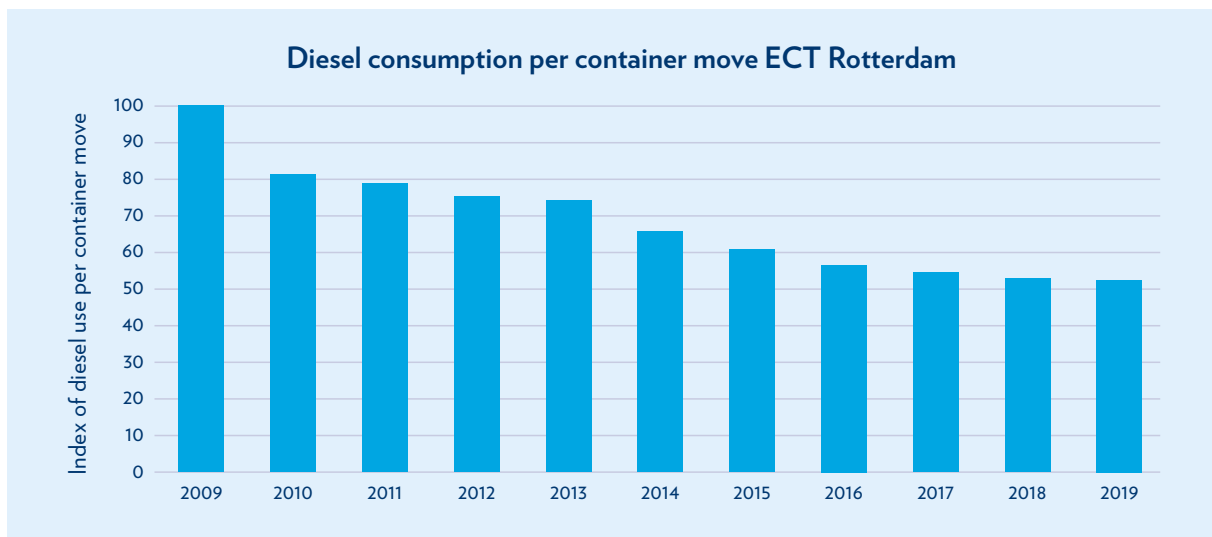
In 2008, the ECT Euromax terminal was festively opened. At that time, the terminal was one of the most sustainable terminals in the world, if not the most sustainable one. Among other things, the automation concept introduced at the ECT Delta was further developed, whereby the processes were further optimised. This yielded both operational and sustainability gains.



Next to the development of new terminal plans, ECT also deployed sustainability activities in a multitude of other areas, such as:

FUEL CONSUMPTION 2009-2019

Between 2009 and 2019, ECT achieved a 47% reduction in the use of diesel oil per container movement on its terminals. In absolute terms, this means a reduction in diesel fuel consumption of 40%.



EUROPEAN GATEWAY SERVICES

ECT has already been looking beyond just the gates of its deepsea terminals since it commissioned its first inland terminal in Venlo in the early 1980s. In 2010, European Gateway Services (EGS) was established with the aim of providing efficient and sustainable transport by rail and barge between the ports of Rotterdam and Antwerp and the European hinterland. The consolidation of cargo is one of the activities of EGS to thus be able to offer high frequency, competitive connections by rail and barge. EGS has now grown into the largest maritime container rail operator in Rotterdam. Part of the rail transport takes place using hybrid Vectron locomotives. EGS is also a frontrunner and initiator of synchromodal transport, in which the most optimal connection and transport mode are consistently selected. Sustainability is one of the criteria in that respect. EGS has developed into a serious player and trendsetter in the market.



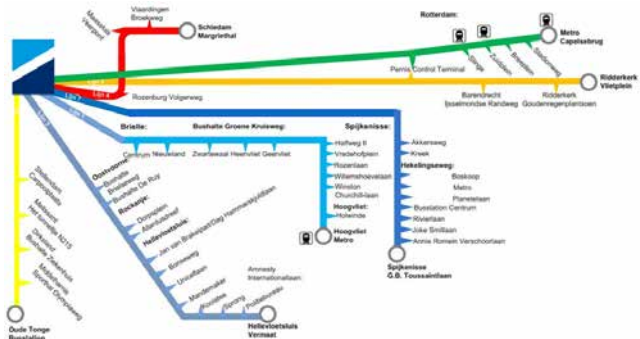
- ✓ >30 weekly barge connections
- ✓ >40 weekly rail connections
- ✓ Largest maritime railoperator in Rotterdam
- ✓ Around 1.000.000 TEU in the network



COLLECTIVE PASSENGER TRANSPORT

Since the mid-1990s, ECT has been one of the largest providers of collective passenger transport in the Netherlands, serving both its own employees and employees of other companies.

Over 900 employees commute using the 24/7 bus transport organised by ECT; the busses connect the entire region with the Maasvlakte. This means a reduction of no less than thirteen million (13,000,000!) car kilometres every year, equalling an annual reduction in CO2 emissions of approximately 1,800 tonnes.



- ✓ 8 itineraries (7x3, 1x2 services per day)
- ✓ 40% of our employees
- ✓ Open for third parties
- ✓ Sustainable, safe en efficient
- ✓ Not subsidised

LEAN & GREEN

Together with the Port of Rotterdam Authority and various companies at the Maasvlakte, ECT participates in the international GoGreen programme, an initiative of Hutchison Ports and the Global Ports Group. Every year, an international action week is staged during which volunteers from the terminals and the Port of Rotterdam Authority make a small contribution to greater sustainability. This among other things entails cleaning beaches, clearing plastic, planting trees and other initiatives. By doing so, employees commit themselves to a more sustainable (local) environment.



GOGREEN

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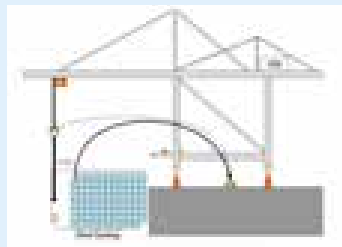


WHAT HAS BEEN ACHIEVED IN 2020

- Energy Transition roadmap has been drawn up and is being implemented.
- Research was conducted into alternative energy carriers. The focus in this respect was on the expected developments of the various energy carriers and on their applicability at the terminal.
- Diesel consumption of the Automated Guided Vehicles (AGV) was reduced as various optimisations have been implemented to prevent unnecessary container movements. These optimisations among other things relate to driving distances, engine management and yard algorithms.
- An energy measurement system has been introduced at the ECT Delta terminal.
- EV charging stations for terminal vehicles and passenger cars have been installed.
- Fully electric terminal vehicles have been commissioned.
- ECT was involved in studies into the possibilities and impossibilities of shore power.



AVG start - stop system



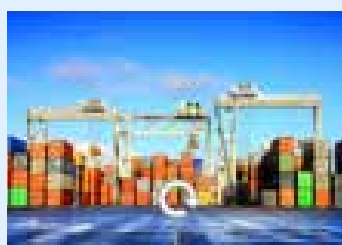
Dual cycling



Adjustment AGV engine management



Shorter driving distances
Straddle carrier



New stack algorithm and stack improvement



Reduction of max speed
terminal trucks to 30 km/h

PLANS 2021 - 2025

- The planned new AGVs will be diesel-hybrid and modularly constructed, with the possibility of making intermediary adjustments to zero emissions. Since the ECT terminals are existing terminals, the transition to fully electric will take place gradually within the mentioned time frame.
- Transition from diesel equipment to zero-emission equipment from 2025 on is in preparation, including the required infrastructural adjustments.
- Network of EV charging stations at the various locations of ECT will be further expanded.
- Office buildings will be adapted to at least energy label C before or in 2023 (national legislation/EED).
- Terminal processes will be further optimised.
- Introduction of energy measurement system at the ECT Euromax terminal.
- Particulate filters installation in the straddle carrier workshop.
- Fully electric terminal trucks testing.
- Introduction of shore-side power for container ships will be further explored together with Port of Rotterdam authority.

