# Choosing the Right Carrier in a Carbon-Conscious Era

## Case Study

VesselBot - Enabling Sustainable Supply Chains

## At a glance

In today's business world, most companies tend to **choose their carrier** solely based on the freight cost, **often overlooking the environmental impact of transportation emissions**. Considering the existing and anticipated emission regulations, this approach fails to consider any potential costs that will incurred.

Currently, many shippers are wondering if, finally, it will cost them more if they decide to choose a more **environmentally friendly supplier,** raising the pivotal question:

**How can companies effectively navigate this decision-making process, including the sustainability factor?**

## Today's choices, tomorrow's returns

Companies should start considering the "hidden costs" associated with emissions when making strategic calculations during the freight booking process.

These costs will likely come in the form of regulations and will play a pivotal role in the decision-making process of logistics departments. Therefore, it is crucial to start factoring in this "assumed cost" now for optimal decision-making when these costs become a reality.

Shippers should track the true cost of carbon emissions to identify the optimal carrier, the one striving to reduce its emissions footprint while maintaining a balance between cost and reductions.

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## CASE STUDY

In this case study, we shed light on the often-overlooked intersection of **freight costs** and **environmental impact in global trade**.
Our analysis focused on two critical trade lanes:

**1. Trade Lane from Rotterdam to Los Angeles.**

**2. Trade Lane from Shanghai to Rotterdam.**

## METHODOLOGY

We evaluated several carriers operating along each trade lane, considering both their upfront freight costs and the environmental consequences of their emissions. As illustrated, the results reveal a fascinating narrative about the dynamic shift in carrier's ranking when the broader context of carbon emissions is taken into account.

### 1 Trade Lane 1 - Rotterdam to Los Angeles

In this case, CR4 emerged as the most cost-effective option, offering the lowest freight rates among the carriers analyzed. Interestingly, after accounting for shadow pricing, there has been a significant shift in the ranking of all carriers. CR1 emerges as the most cost-effective option, whereas CR4 has become the most expensive option. This shift underscores the **"hidden" costs associated with emissions**, highlighting the importance of considering **environmental factors in freight transportation decisions.**

**Trade Lane 1**
**Rotterdam - LA**

| Carrier | Price Freight TEU | Emissions | Shadow Price per TEU (37 USD per Tn) | Actual Price Freight TEU |
|---|---|---|---|---|
| CR1 | $2.400 | 1,370 KG | $506.9 | $2,906.9 |
| CR2 | $2.440 | 1,356 KG | $501.72 | $2,941.72 |
| CR3 | $2.500 | 1,191 KG | $440.67 | $2,940.67 |
| CR4 | $2.390 | 1,795 KG | $664.15 | $3,054.15 |

*Acknowledged by Gartner, from "Executive Leader Insight: Drivers of Environmental Sustainability", Slide 13

### 2 Trade Lane 2 - Shanghai to Rotterdam

Similarly, here, CR4 was perceived as the most cost-effective option from Shanghai to Rotterdam. Even after considering emissions, CR4 maintains its position as the most economical choice in this revised ranking. However, CR1 surpasses CR3 in terms of **cost-effectiveness when considering shadow pricing.**

**Trade Lane 2**
**Shanghai- Rotterdam**

| Carrier | Price Freight TEU | Emissions | Shadow Price per TEU (37 USD per Tn) | Actual Price Freight TEU |
|---|---|---|---|---|
| CR1 | $3.650 | 814 KG | $301.18 | $3,951.18 |
| CR2 | $3.450 | 933 KG | $345.21 | $3,795.21 |
| CR3 | $3.630 | 944 KG | $349.28 | $3,979.28 |
| CR4 | $3.360 | 966 KG | $357.42 | $3,717.42 |

*Acknowledged by Gartner, from "Executive Leader Insight: Drivers of Environmental Sustainability", Slide 13