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CUSTOMER CASE STUDY

Tracking CO_2 emissions through the supply chain

A leading global automotive manufacturer was on a mission to reduce its fleet's emissions in Europe. The looming threat of climate change - and rapidly changing environmental regulations - created a dire need for reform. The company needed to give customers the SUVs, trucks and less fuel-efficient models they wanted while still creating the vehicle volumes and options mixes that would comply with regulations. Failure to keep these competing interests in balance could, at best, hurt profits and at worst, result in millions of dollars in penalties. The company needed a supply chain planning solution that could measure the emissions output of its planned vehicle mix without raising complexity or costs.

The challenge: Improving emissions without adding complexity

In 2018, the company was improving its fleet to meet emissions reductions standards under Clean Air for Europe (CAFE) regulations. These regulations set target emissions for each manufacturer and penalties for failure to comply. At first, the company met early targets ahead of schedule but over time, it began to fall behind. Customer demand for higher-emitting vehicles made it challenging to produce clean fleets that could compete in the market, and early gains in fuel efficiency and battery technology weren't enough to keep pace with ever-lowering emissions caps.

Emissions scandals from other manufacturers further complicated the issue. Between 2017 and 2018, the European Commission phased in stricter emissions tests for all new cars, including an assessment to measure output in real-world driving conditions[1]. Penalties for exceeding targets would increase in 2019 to 95 euro per each registered car for every g/km exceeded. This could result in millions of dollars in fines each year, but manufacturers were only given months to prepare.

The company decided its best opportunity for lowering emissions would come at the supply chain level. Although the company couldn't control demand for high-emitting models like trucks and SUVs, better planning could limit other contributing factors. For example, optional features in cars, such as sun roofs, paint color and wheel size, could alter a vehicle's emissions by as much as 30 percent. If planners had the ability to track these features, they could adjust their market availability and reduce emissions.

The company's planners couldn't do this with the planning software they had in place when the new emissions tests were announced. Instead, they based emission-level estimates on limited information about the vehicles being produced. Planners assumed the best and worst case scenario for each model and then estimated what mixture of high-emitting and low-emitting vehicles would be sold in each market.

The estimates weren't accurate, and the lack of visibility limited the actions the company could take to reduce emissions and avoid penalties. The company's planners needed a solution that could track granular changes to individual vehicles while still providing high-level, aggregate data on revenues and emissions targets.

The Kinaxis difference

Planners' and manufacturers' needs were met when the company found Kinaxis® RapidResponse®. Today, it has a new company standard: It plans for regulations compliance instead of anxiously awaiting penalties. With access to detailed information for each vehicle being built, planners are able to craft and evaluate multiple scenarios to pick the vehicle volume and mix that will boost revenues and stay within regulation targets.

Before RapidResponse, the company had to estimate emissions for its entire fleet using a base model for each vehicle. Now, because demand data is continuously updated, planners can constantly monitor the supply chain and recommend ways to lower fleets' emissions and remain profitable. The company can then proactively adjust the models and options they plan to produce and make available for sale in each country to avoid exceeding targets and facing fines.

Benefits of using Kinaxis

- **Granular-level data on the vehicle models and options mixes being sold in Europe**
- **Scenario planning to find emission-reduction opportunities before reaching annual targets**
- **Visibility into supply chains serving 13 brands across 28 countries**
- **Aggregate reporting on emissions throughout Europe**

Results that matter

Company leaders now feel confident they can reach future European emissions targets. That conviction couldn't come at a better time: analysts are warning about a "2020 CO_2 Cliff." Independent researchers predict that companies across the automotive industry could each pay billions in penalties by the end of that year.[2] In that environment, better supply chain planning will give the company an opportunity to surpass its peers' emissions goals and avoid hefty fines.

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About Kinaxis Inc.

Yesterday's planning techniques are no match for today's supply chain volatility. Disconnected, cascading planning is keeping us from satisfying customers. It's time for a new reality. Concurrent planning balances the end-to-end supply chain continuously and instantly. It connects data, processes and people in unity so you can plan, monitor and respond across your supply chain in seconds. Using concurrent planning, Kinaxis® helps you make decisions 100x faster. The result is less risk, lower costs and happier customers.

This case study is accurate as of the date published and may be updated by Kinaxis from time to time at its discretion.

[1]https://ec.europa.eu/growth/content/clean-mobility-new-emissions-tests-become-mandatory-all-new-cars-1-september-2018_en
[2]https://www.bloomberg.com/news/articles/2019-06-26/europe-s-tough-new-emissions-rules-come-with-39-billion-threat