



Information on Impact (17th May 2023)

Michaela Altmann

impact
ON SUSTAINABLE AVIATION

Bank aus Verantwortung

KFW IPEX-Bank

Target - Impact in general

Our **main target** is the **transparency** as it is indispensable for developing sustainability strategies and their success.

One of the strongest lever to do so is to drastically simplify the metrics used to measure aviation sustainability, introduce a uniform reporting requirement and focus on three essential KPIs mentioned.

We aim to do the following:

- Propose standards as to how to integrate a set of key figures
- Encourage airlines to integrate these metrics into their sustainability reports
- provide unprecedented transparency to internal and external supervisory bodies

Increased **transparency** in aviation decarbonization will assist regulators and policymakers in supporting actions which **will expedite the pathway to net zero**.

»»» KPIs to steer and guide decarbonization in Aviation

Transparent, well-defined, and pinpointed metrics are important in order to reinforce the convergence and the uptake of strategies to reach the required net zero by 2050 target.

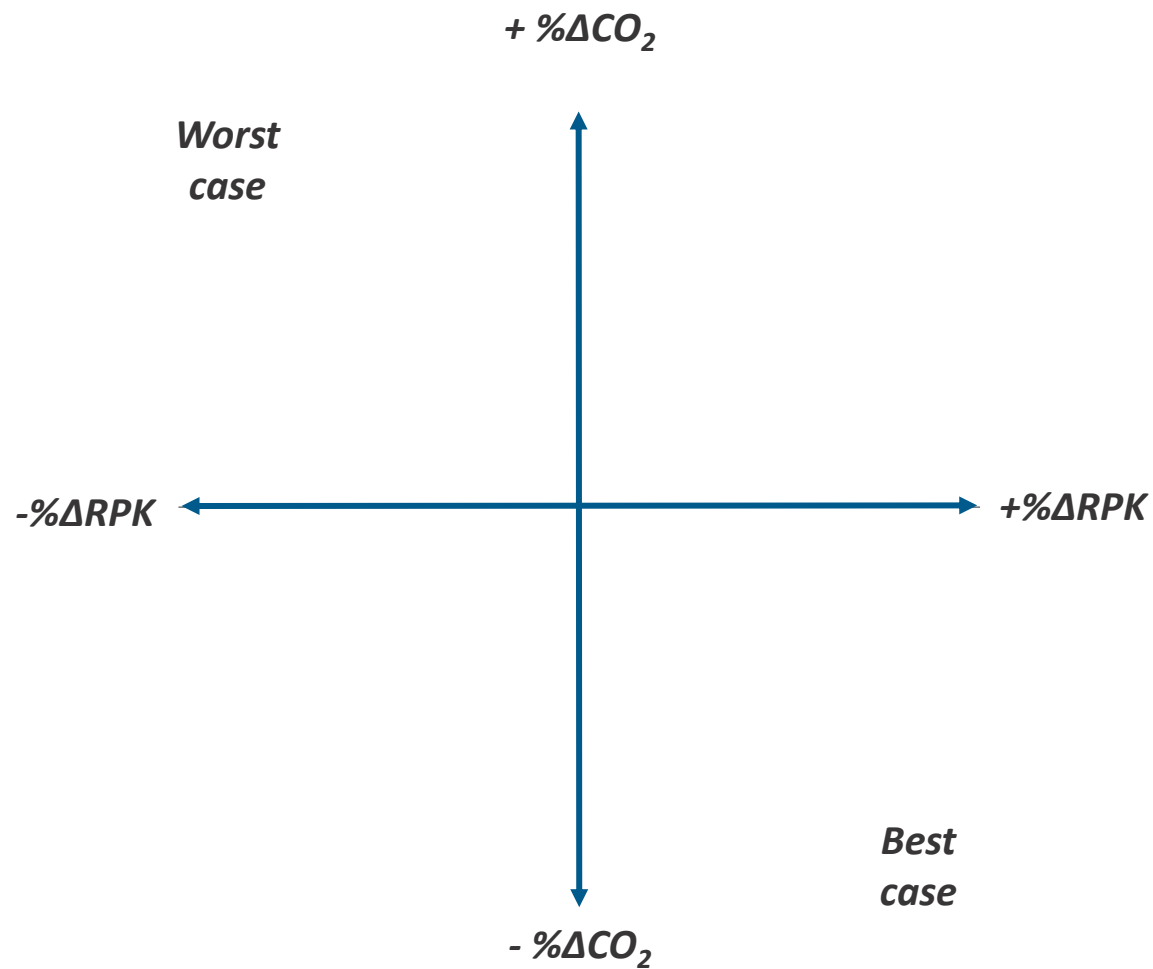
The following three KPIs could effectively address:

- **Footprint (effectiveness):** how effectively is CO₂ being reduced in absolute terms in relation to climate targets such as “net zero”?
- **Intensity(efficiency):** how much CO₂ is needed to produce a certain unit of capacity?
- **Decoupling:** to what extent are CO₂ emissions coupled to underlying capacity trends?

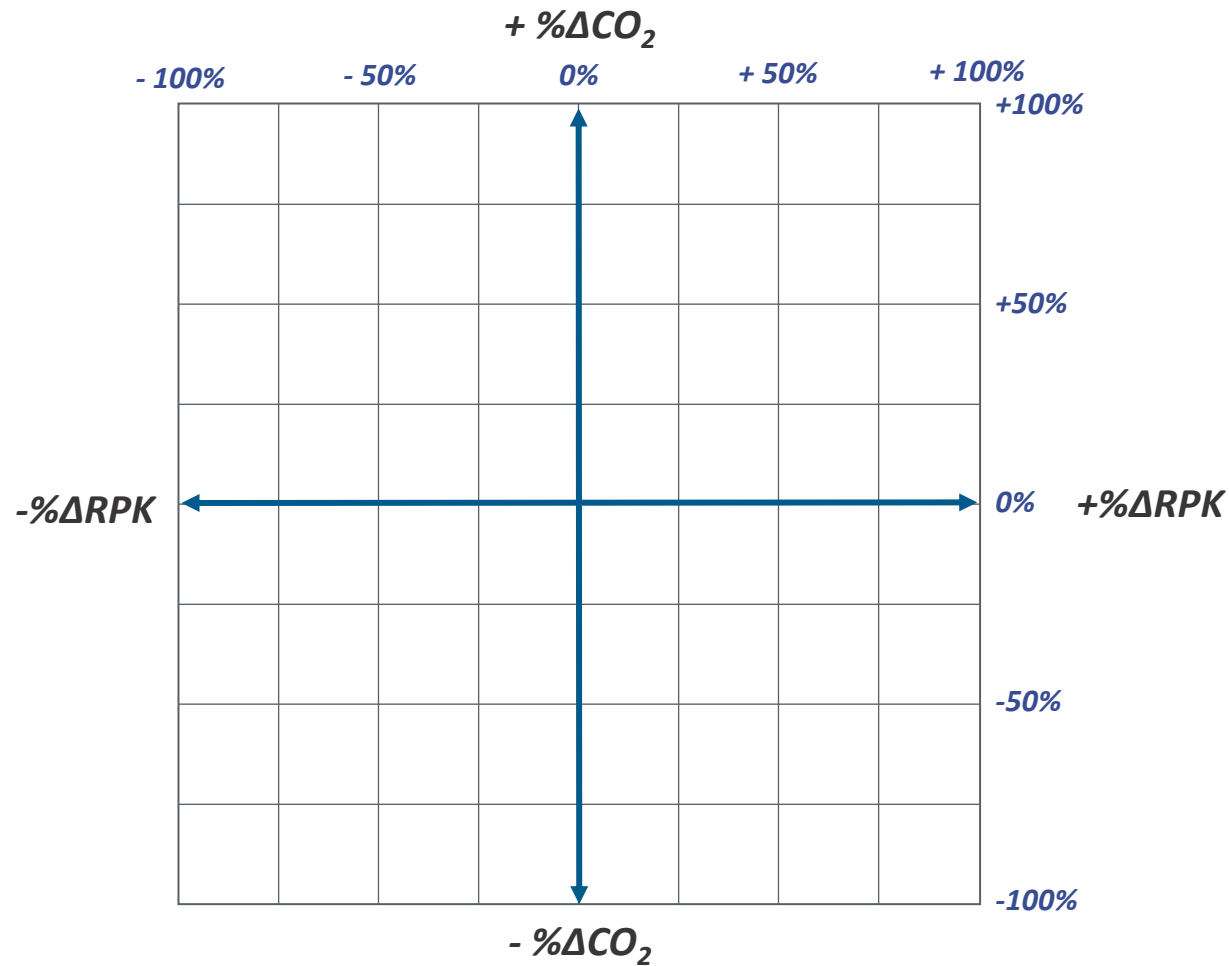
>>> KPIs table

		Footprint (Effectiveness)	Intensity (Efficiency)	Decoupling (Decoupling CO ₂ from RPK)
Definition	Question	How much CO ₂ does an airline emit in total?	How much CO ₂ is needed to produce a certain unit of capacity?	How closely are trends in CO ₂ emissions coupled with capacity development?
	Answer	Total amount of CO ₂ emissions generated by passenger transport	Ratio of direct CO ₂ emissions to seat kilometers sold	Comparison of the respective annual change in CO ₂ and RPK
	Formal definition	$CO_2 \text{ footprint} = CO_2$	$Intensity = \frac{CO_2}{RPK}$	Decoupling $= \Delta\%RPK - \Delta\%CO_2$
Scope	CO ₂	<ul style="list-style-type: none"> CO₂ (disregarding GHGs other than CO₂) Direct emissions from flight operations ("everything that burns fuel") 		
	Flights	An airline is allocated the emissions of all flights that take place under its commercial responsibility		
	Payload	Passenger (CO ₂ and RPK must refer to the same category of payload without blending pax and cargo)		
	Capacity	RPK. To be expanded to RTK in due time		
	Periodicity	Calendar year		
	Airline	Complete data for each operating carrier and each airline group		

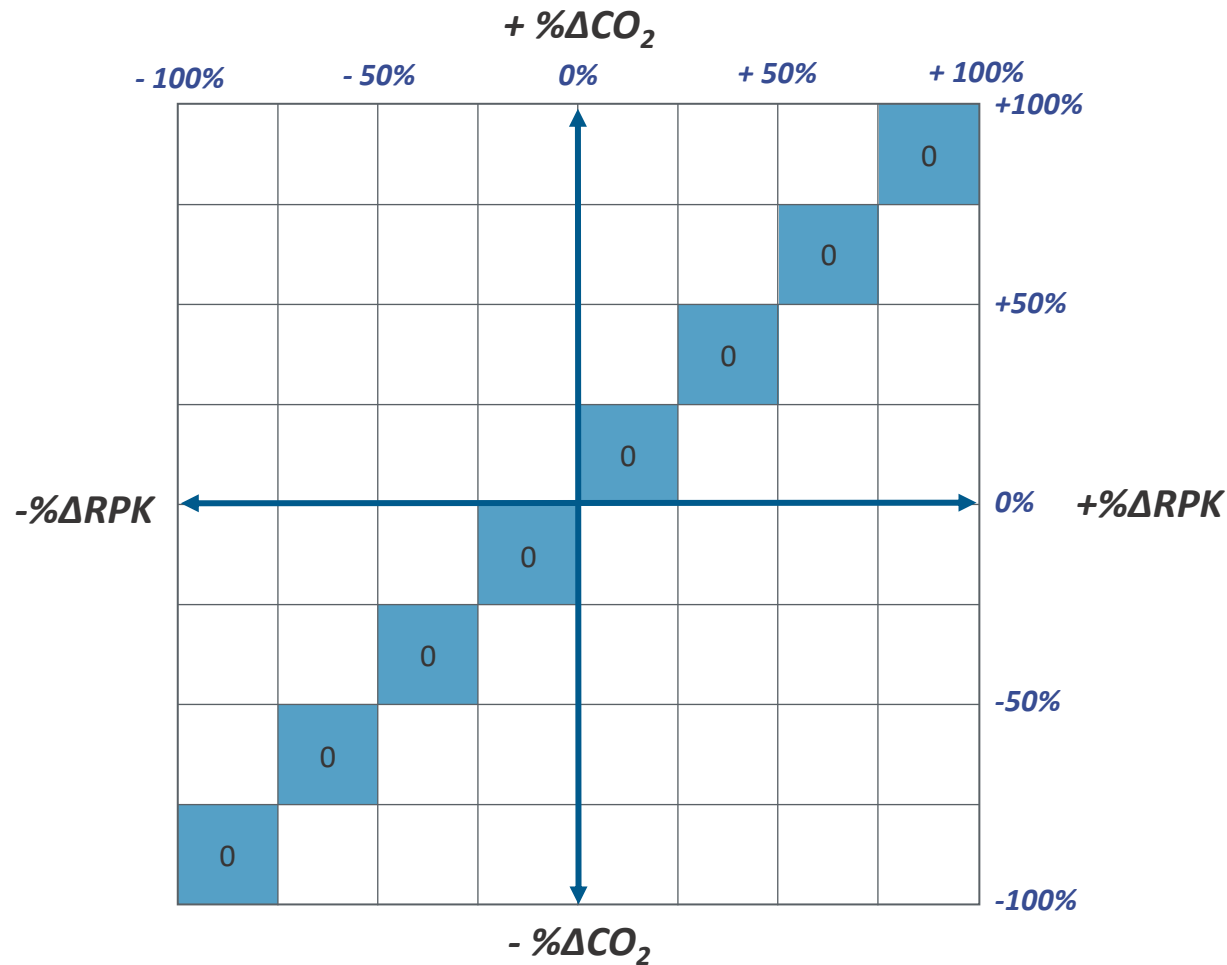
>>> Visualising decoupling - The “Tapio pane”



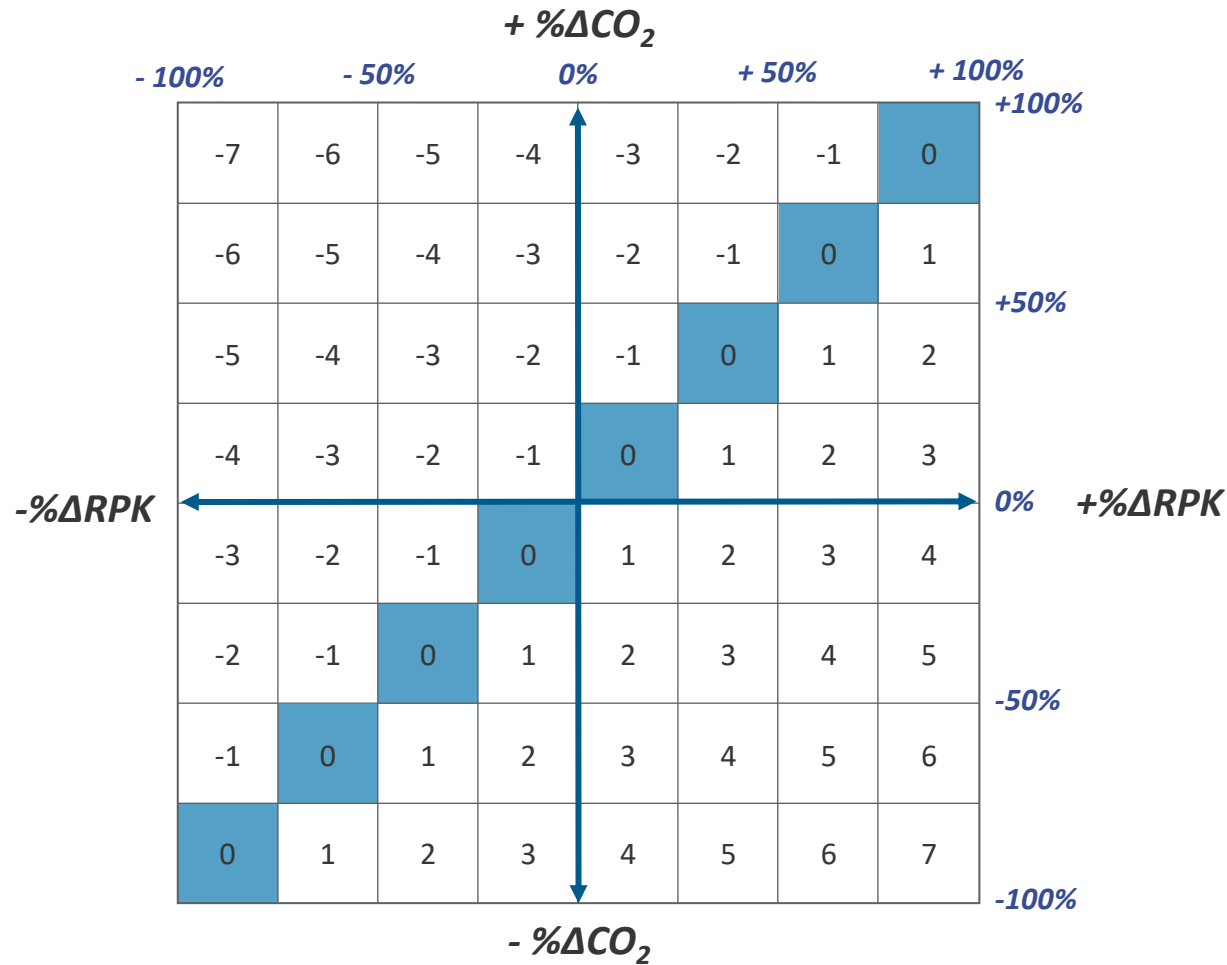
>>> Tapi's coordinate system is overlaid with a simple grid of change categories



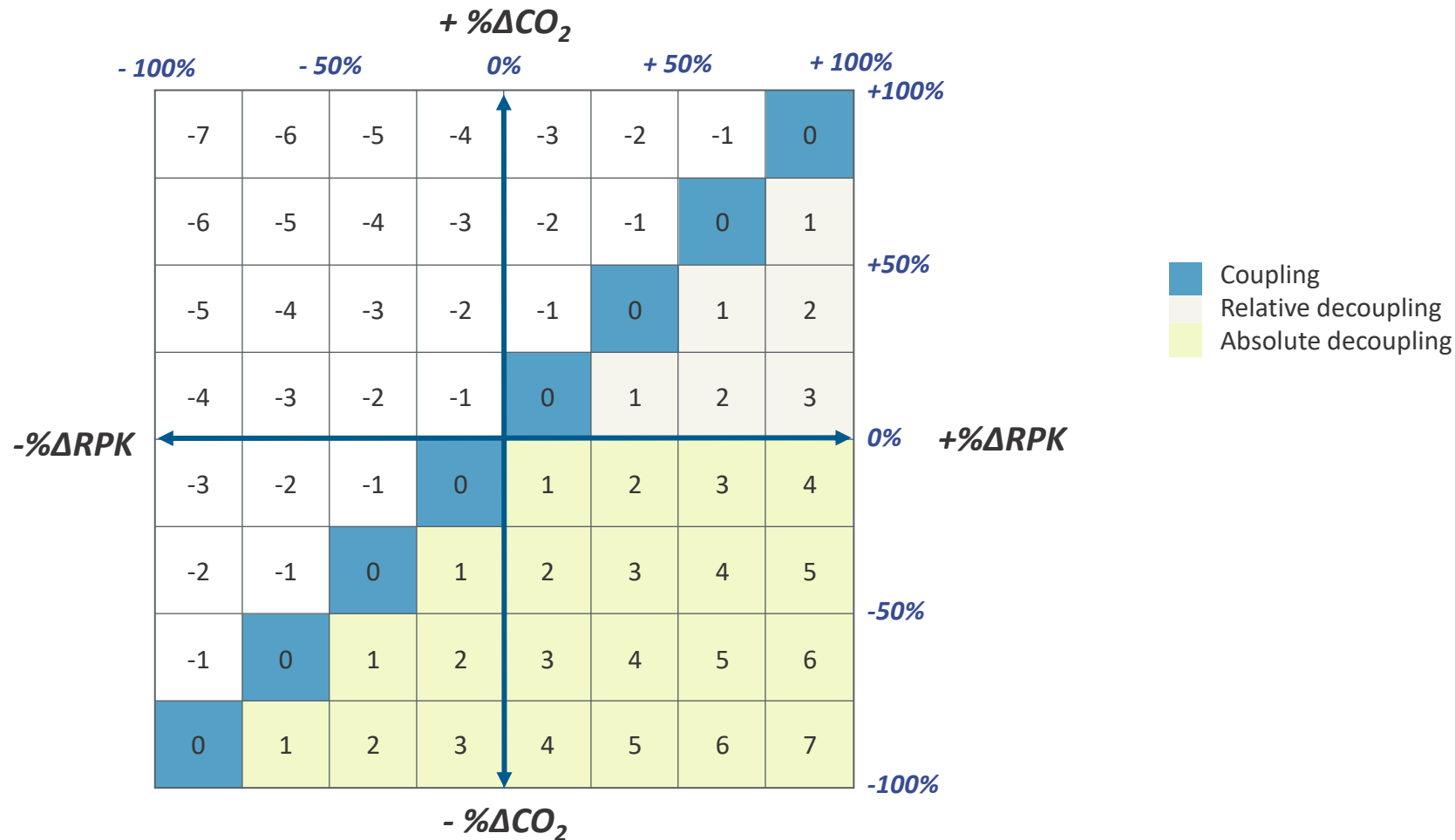
»»» In the cells of the diagonal, the CO₂ changes correspond to the RPK changes:
Strict coupling is not rewarded



»»» All other cells are filled symmetrically to the diagonal and to the "best" (lower right) and "worst case" (upper left) corners



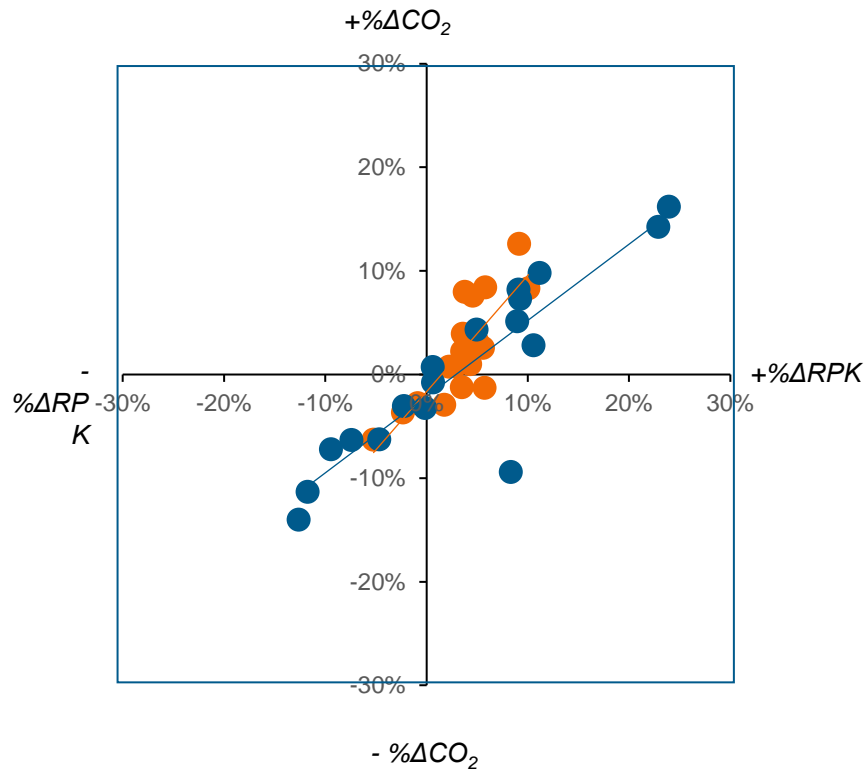
»»» The values in the cells represent a straightforward rating system, differentiating coupling, relative and absolute decoupling



>>> Example: Reporting airlines in 2019 – translated into the Impact metrics

2019: Mild decoupling

(yoy change RPK and CO₂, all reporting A/Ls)

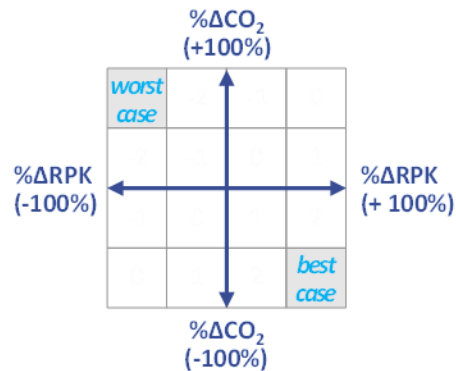


- Large airlines (top 50% RPK percentile)
- Small airlines (bottom 50% RPK percentile)

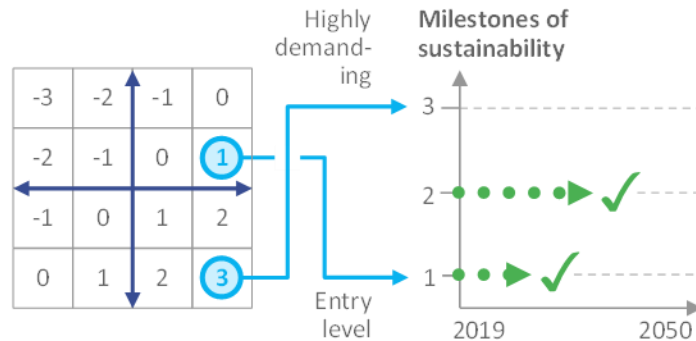
- Only a few deviations from the diagonal in 2019
- **Smaller airlines:** Tendency towards decoupling
- **Larger airlines:** Tendency to remain coupled

>>> Setting correct milestones will help tracking the efforts on the way to Zero Emission

1 Sizing the matrix



2 Grading the positions

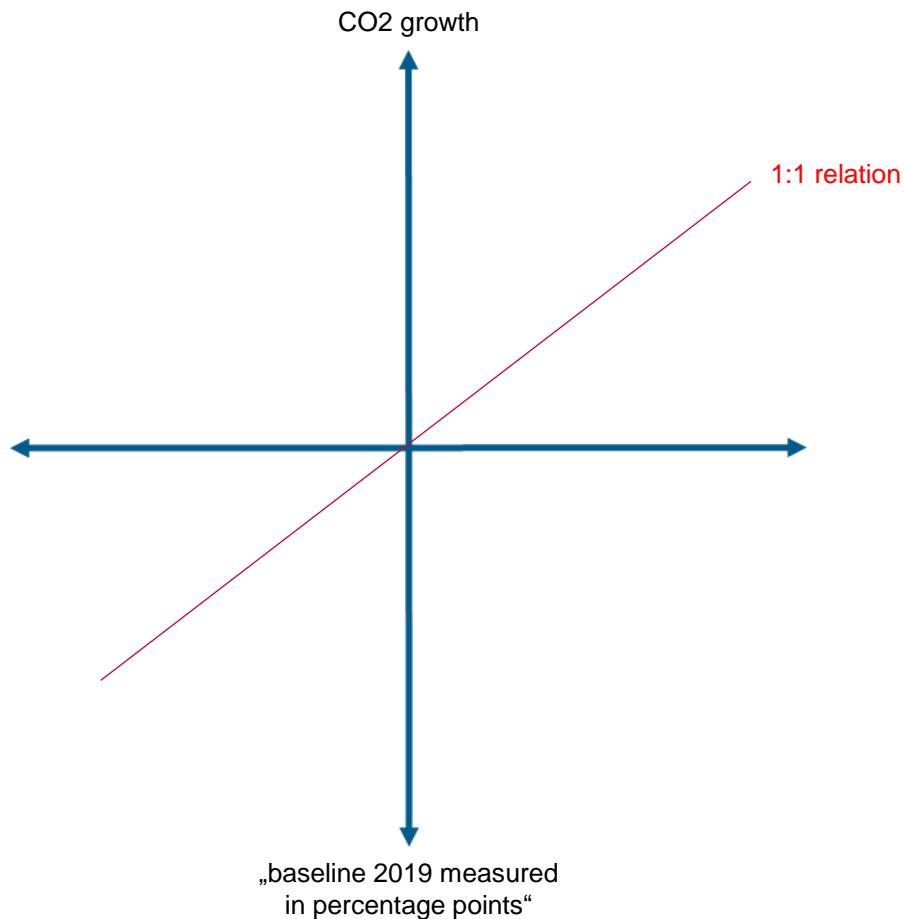


3 Setting the milestones

>>> Appendix

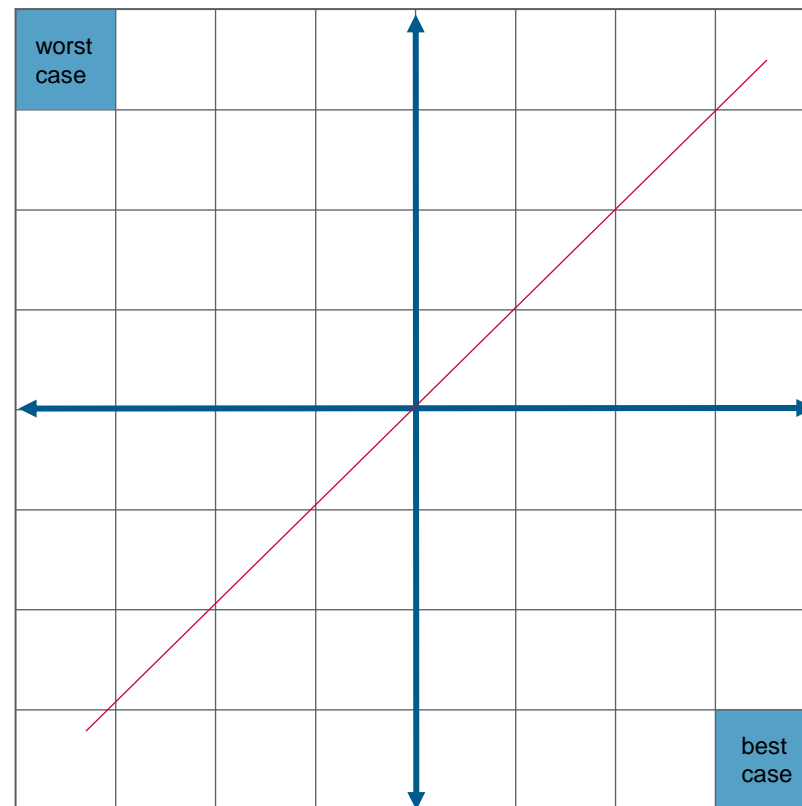
>>> How to visualize decoupling -> Milestone concept

Step 1



Step 2

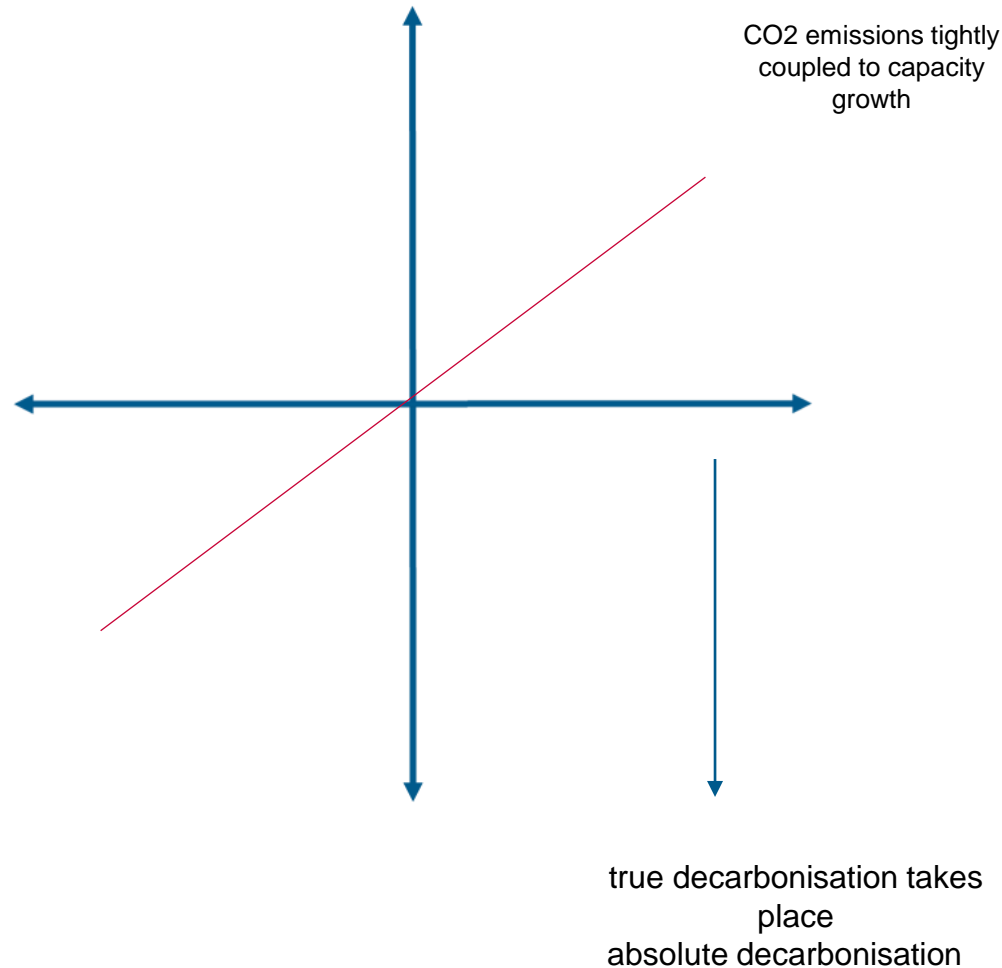
Putting a score card system on top



Milestones:

- Score 0: CO2 emissions tightly coupled to capacity development
- Score 1: CO2 emissions grow less than emissions
- Score 3: Good combination of CO2 reduction and capacity growth

>>> Relative and absolute decoupling



CO2 emissions increase
But tight coupling to capacity growth has been a problem

1. Fleet renewal
2. Network optimization
3. Fleet usage and daily operations optimized
4. Successive SAF usage included