



Internal CO2 tax – an efficient way to reduce CO2e emissions through behavioural changes


Rasmus Lovring and Jeppe Deleuran, Aarhus Municipality





Aarhus Municipality

As an organization

- Number of citizens: 361.000
 - Number of employees: 30.000
 - Yearly spend: 8,5 Bn. DKK (1,15 bn. EUR)
 - Food emissions within the organization: 8.000 tons CO₂e in 2023 (10.000 tons in 2019)
 - Schools
 - Kindergarten
 - Nursing homes
 - Lunch for employees
- 



Why?

The overall purpose is to reduce the consumption-based emissions in Aarhus Municipality.

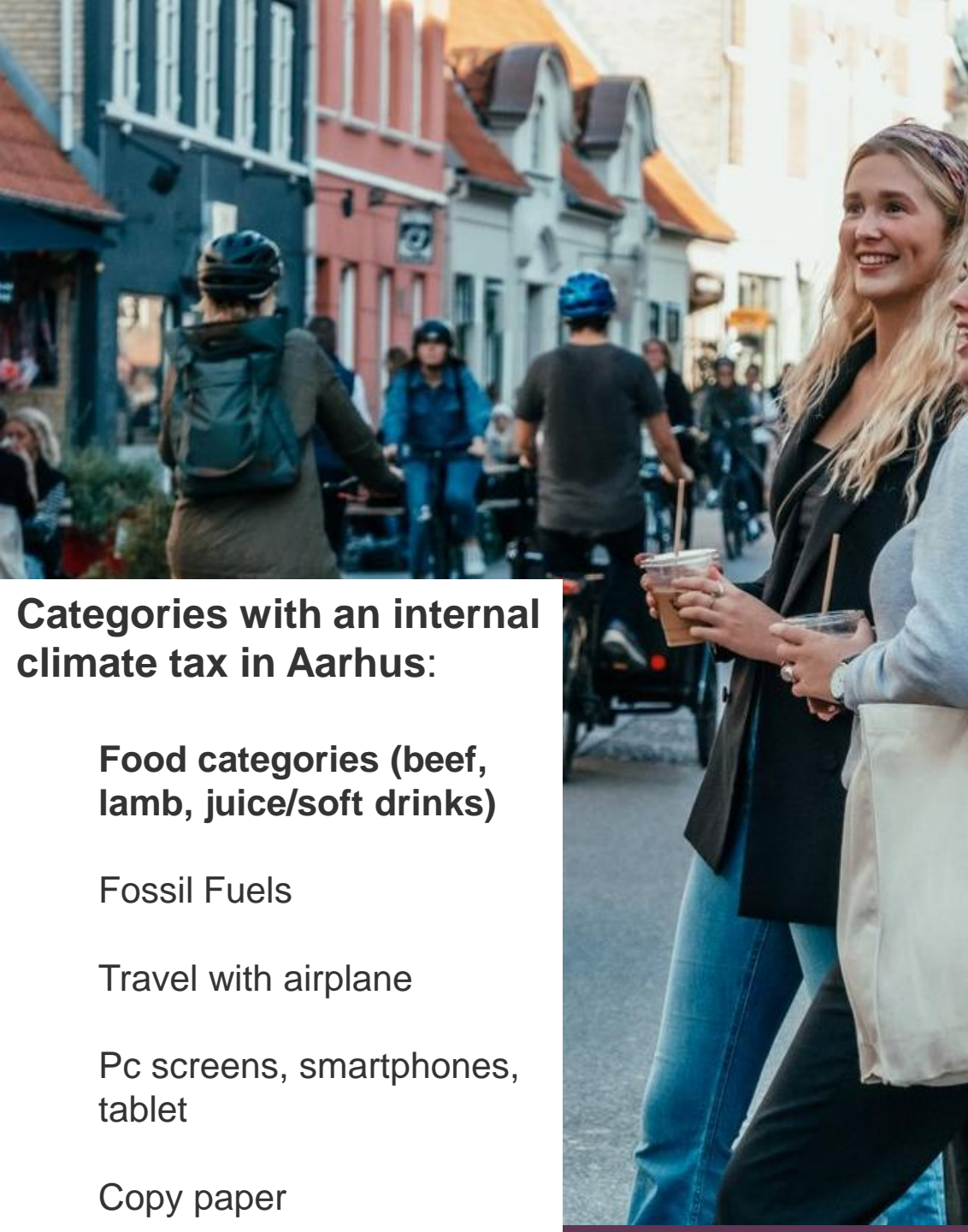
Today: The price of many products do not reflect the costs on their environmental footprint

A CO2 tax provides a financial incentive to behave in a more sustainable way.

Purchasing price = Price of product + CO2 tax

Political willingness and courage is important when working with behavioral changes.





How?

An internal valuation of 1.000 DKK (130 EUR) per ton of CO₂e
→ 1 kg of CO₂ emission costs 1 DKK (0,13 EUR)

The purchasing price is increased with the value of the CO₂ emissions.



Purchasing price = Price of product + CO₂ tax



Categories with an internal climate tax in Aarhus:

Food categories (beef, lamb, juice/soft drinks)

Fossil Fuels

Travel with airplane

Pc screens, smartphones, tablet

Copy paper





How?

An internal valuation of 1.000 DKK (130 EUR) per ton of CO₂e
→ 1 kg of CO₂ emission costs 1 DKK (0,13 EUR)

The purchasing price is increased with the value of the CO₂ emissions.



Purchasing price = Price of product + CO₂ tax



Education in preparing more sustainable meals.



Categories with an internal climate tax in Aarhus:

Food categories (beef, lamb, juice/soft drinks)

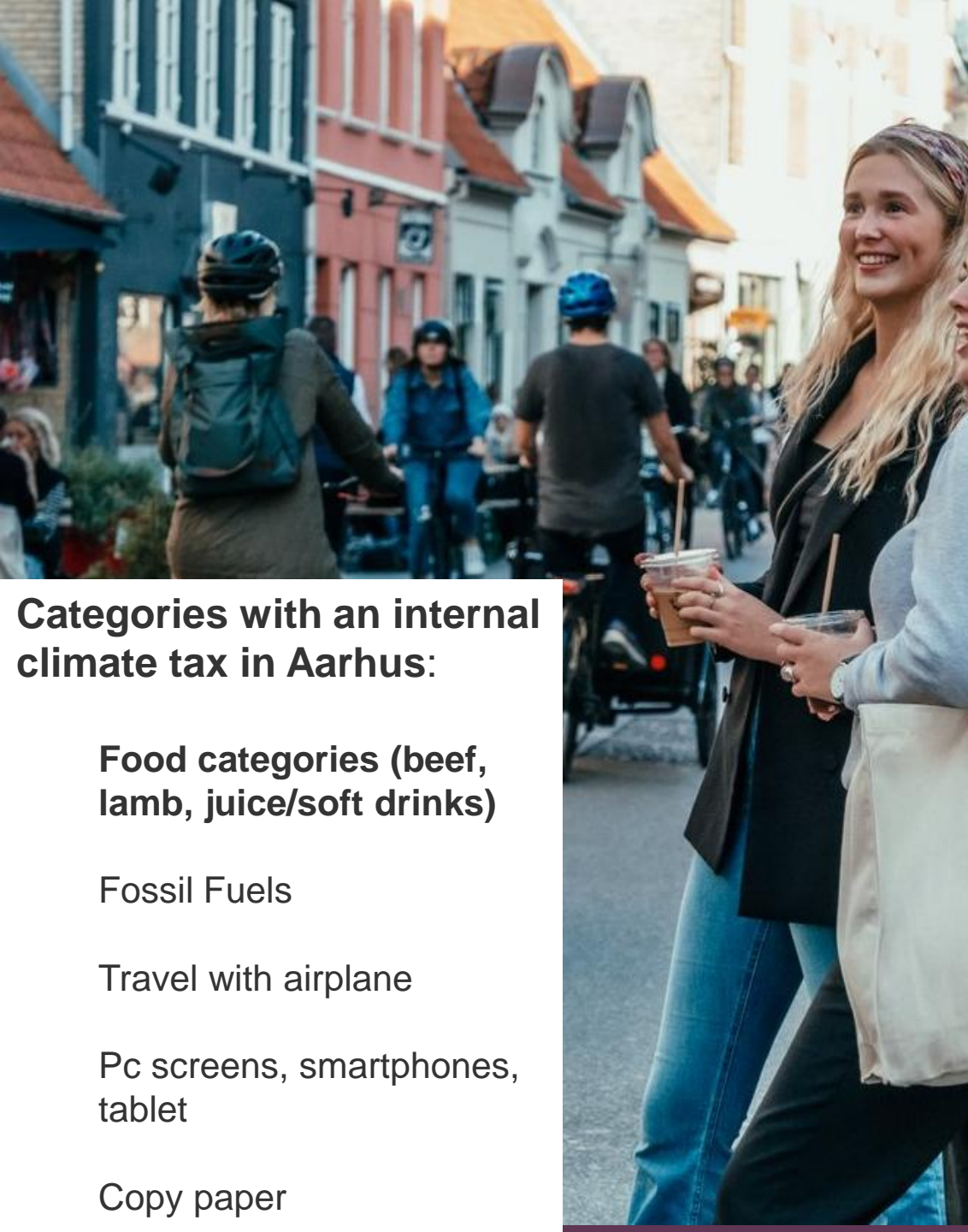
Fossil Fuels

Travel with airplane

Pc screens, smartphones, tablet

Copy paper





How?

An internal valuation of 1.000 DKK (130 EUR) per ton of CO₂e
→ 1 kg of CO₂ emission costs 1 DKK (0,13 EUR)

The purchasing price is increased with the value of the CO₂ emissions.



Purchasing price = Price of product + CO₂ tax



Education in preparing more sustainable meals.



Behavioral change: Shifting towards a relative cheaper product



Categories with an internal climate tax in Aarhus:

Food categories (beef, lamb, juice/soft drinks)

Fossil Fuels

Travel with airplane

Pc screens, smartphones, tablet

Copy paper





How?

An internal valuation of 1.000 DKK (130 EUR) per ton of CO₂e
→ 1 kg of CO₂ emission costs 1 DKK (0,13 EUR)

The purchasing price is increased with the value of the CO₂ emissions.



Purchasing price = Price of product + CO₂ tax



Education in preparing more sustainable meals.



Behavioral change: Shifting towards a relative cheaper product



The revenue of the internal CO₂ tax stays in the budget loop.

Categories with an internal climate tax in Aarhus:

Food categories (beef, lamb, juice/soft drinks)

Fossil Fuels

Travel with airplane

Pc screens, smartphones, tablet

Copy paper



How? – Integrated in the e-commerce solution

AB CATERING

Søg i vores sortiment

08-02-2024

32,51 KG
325,10 kg

ØKO-TÆLLER
100 %

Kurv (1)

SORTIMENT NY

TILBUD FRA DIN AFDELING

VIS ELLER AFSLUT ORDRE

Oplysninger om din ordre

Ordrenummer 24733647

Valgt leveringsdato 08-02-2024



Bemærkninger

Udfyld feltet og giv os øvrige oplysninger om levering, varer eller specielle ønsker.

Øko-tæller **100 %**

CO₂-tæller
Gennemsnit: 32,51 kg
325,10 kg

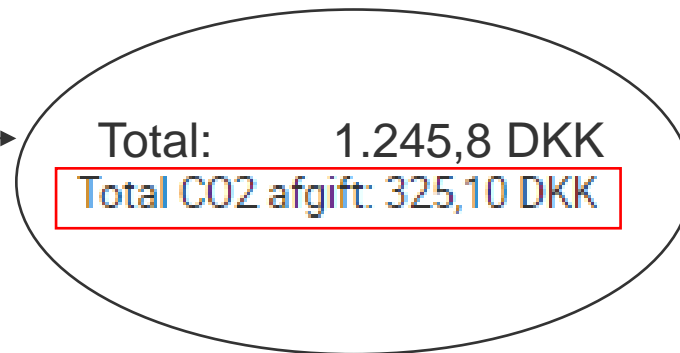
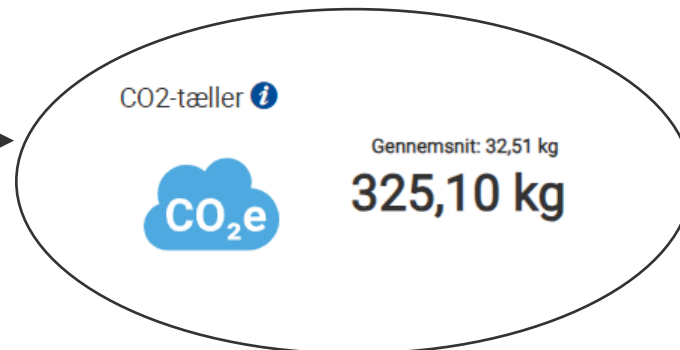
Leveringsdato for ordre: 08-02-2024

Billede	Beskrivelse	Info	Antal	Enhed	Enhedspris	Liniepris
	317277 Hakket oksekød 9-15% Øko	 CO ₂ e 32,51	1	KRT (10x1 KG)	1.245,8	1.245,8 CO ₂ afgift: 325,10 DKK

Total: **1.245,8 DKK**
Total CO₂ afgift: 325,10 DKK

Alle priser er ekskl. moms. Ved anbrud på kartoner eller kasser kan forekomme merpris. Alle vægtvarer vises med vejledende totalpris baseret på vores skøn af varens vægt. Der kan forekomme forskelle i pris, da varens nøjagtige vægt først kendes under varebehandling. Endelig pris fremgår af faktura. Se også handelsbetingelser for webhandel.

Godkend ordre



The economic effect on different food categories



The price of 1kg of ground beef increases with 48 DKK. (6,4 EUR)



The price of 1kg of beef tenderloin increases with 227 DKK. (30,3 EUR)



The price of 1kg of lamb meat increases with 34,7 DKK (4,7 EUR)



The price of 1 liter of juice increases with 1,64 DKK (0,22 EUR).

The price of vegetarian alternatives, pork and chicken is not affected and will be relative cheaper to purchase.

Effect on food categories after 1 year



40% reduction → 1000 tons CO2e annually



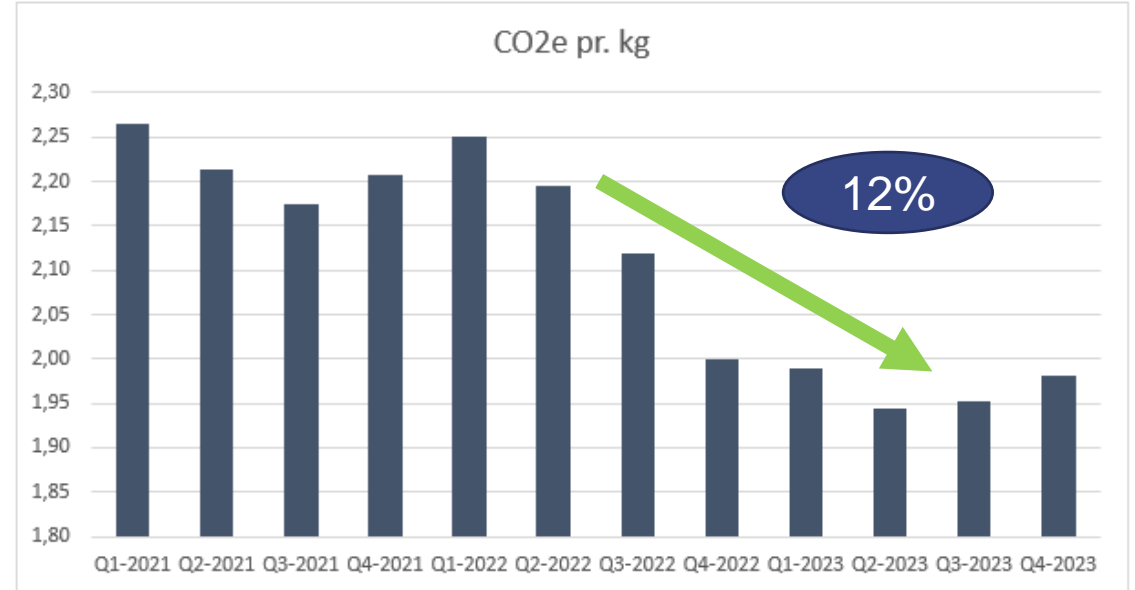
20% reduction → 10 tons CO2e annually



7% reduction → 25 tons CO2e annually



CO2e per kg. is overall reduced by 12%

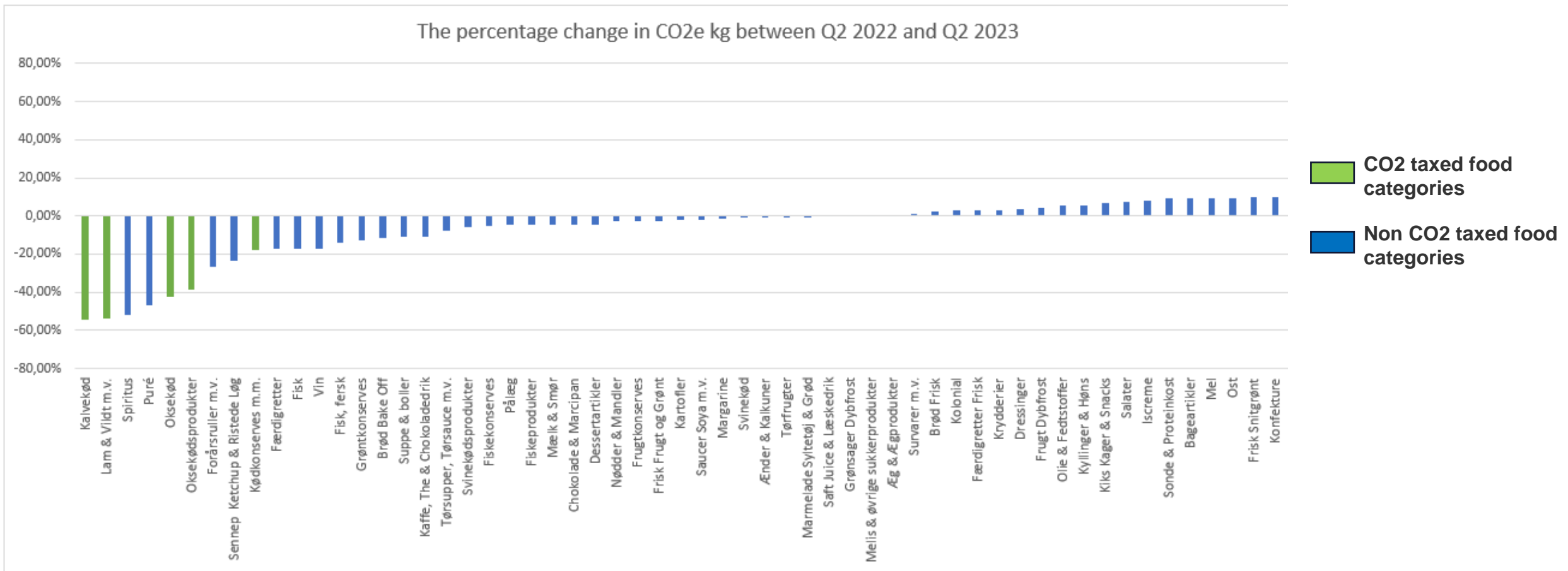


12%



Effect on food categories

- The total amount (kg) of food is not affected when comparing Q2-2022 with Q2-2023, but we find a significant decrease in the amount of CO2 taxed products.





We hope others will take up the idea

- Reducing consumption-based emissions is a must!
- Behavioral economics is an efficient tool in public organizations:
 - Strong price incentive
 - Substitutes or alternative products.
 - Knowledge and skills to change behavior
- Please reach out if you want to hear more about our CO2 tax model in Aarhus.

Contact informations.

Jeppé Deleuran: kdje@aarhus.dk

Rasmus Lovring: pral@aarhus.dk

