The Benefits of a Carbon Tax

Swedish experiences from 1991 and onwards

Session III Carbon Trading: Economic Mechanisms and Market Dynamics
Joint Indonesia-Sweden-ADB-CFMCA Workshop
Jakarta, Indonesia
3 October 2023

How to Reach …

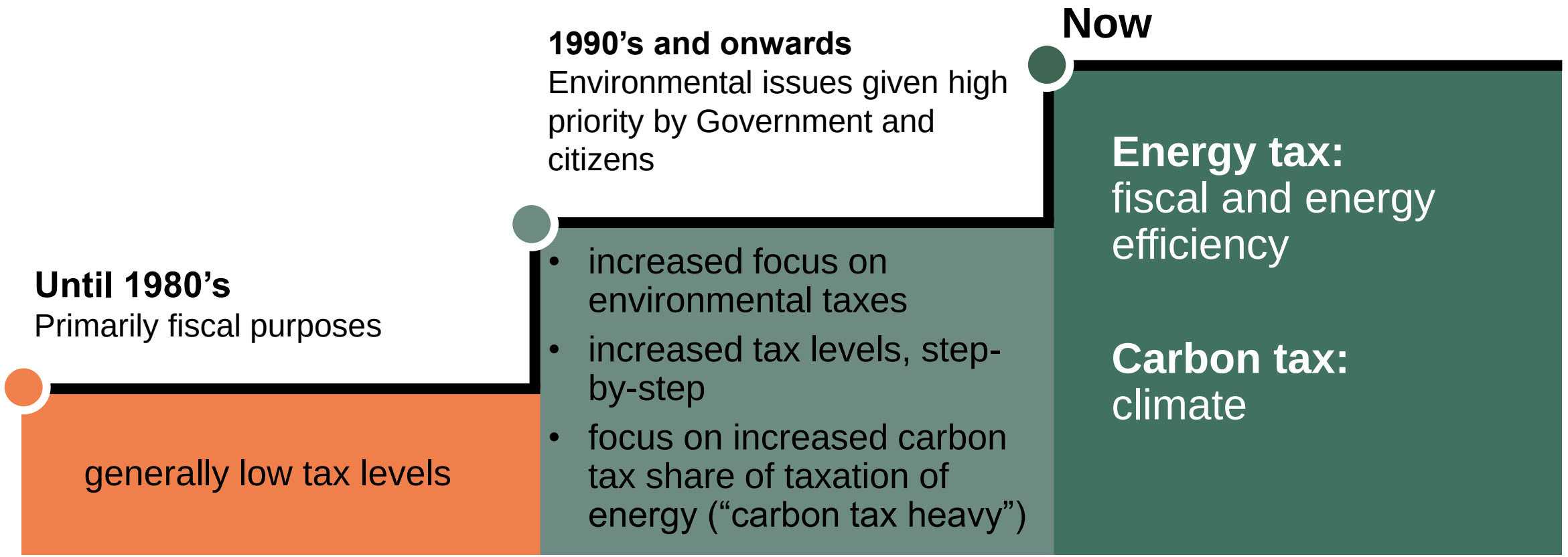
Climate, Environment and Energy Policy Goals?

Using environmental taxes in a cost-effective way ….

- … is Sweden's primary instrument to reach set goals
- … is easy to administer and gives results
- … may need to include state aid elements to ensure best overall environmental results

The Swedish Context

Increased Focus on Environmental Taxes



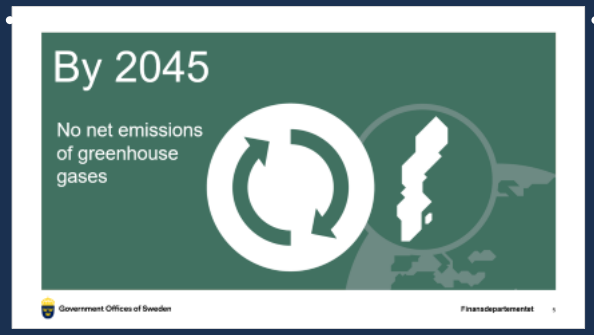
+30 Years of Carbon Taxation Swedish Experiences

Carbon Tax

1988-1989 Committee of Inquiry
1989 Committee Report and Public Consultation
1990 Governmental Bill and Parliament Decision
1991 Carbon Tax introduced

National climate target

2017 Decided by Parliament

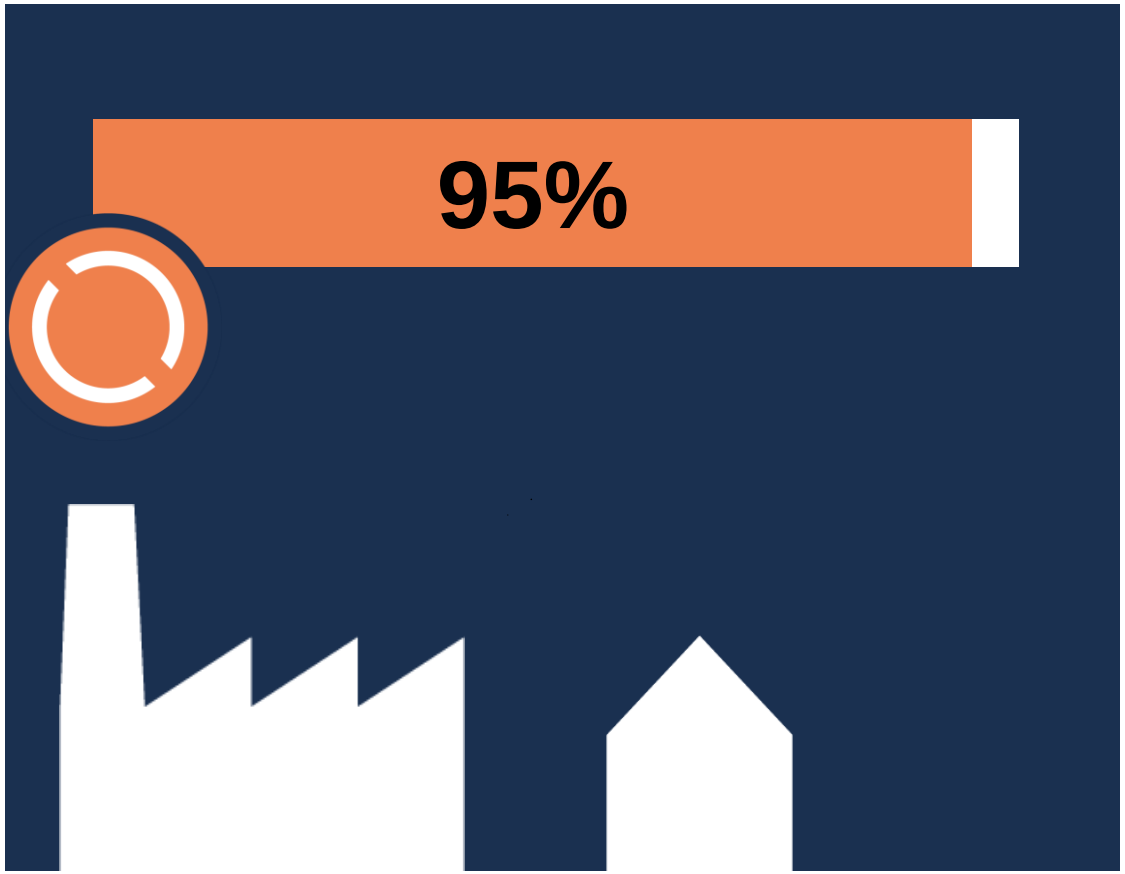


By 2045

No net emissions of greenhouse gases

Swedish Carbon Pricing

EU Emission Trading Scheme (EU ETS) and the Swedish Carbon Tax



EU Emission Trading Scheme (EU ETS) since 2005

- Emissions of fossil CO_2 and other greenhouse gases.
- Large part of heavy industry

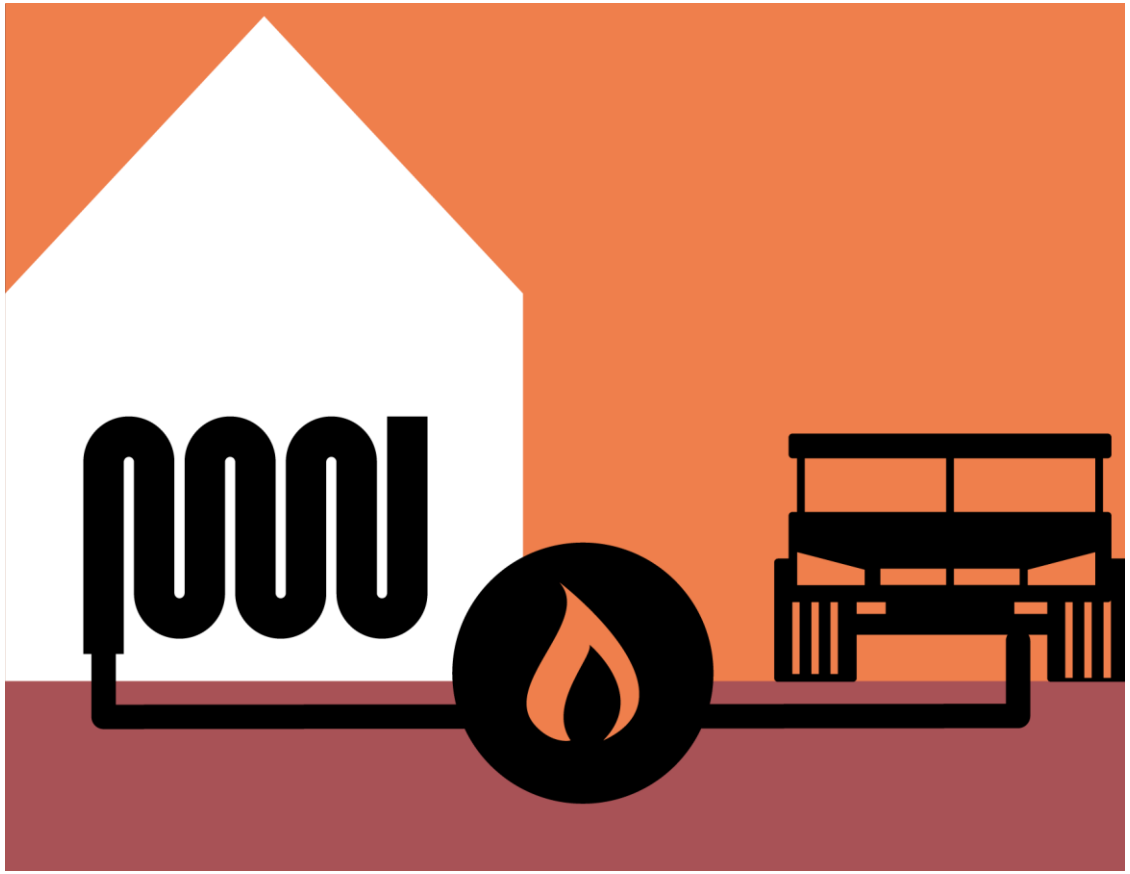
No carbon tax on fossil fuels in installations covered by EU ETS

Approximately 95% of Swedish fossil CO_2 emissions are covered by either a carbon tax or EU ETS

Carbon Tax

on Motor Fuels and Heating Fuels

- Calculated on the basis of average fossil carbon content of fuels.
- Combined with an energy tax (excise duty) on fuels and electricity
- All tax rates expressed in weight or volume units (tons, litres).



Carbon Tax

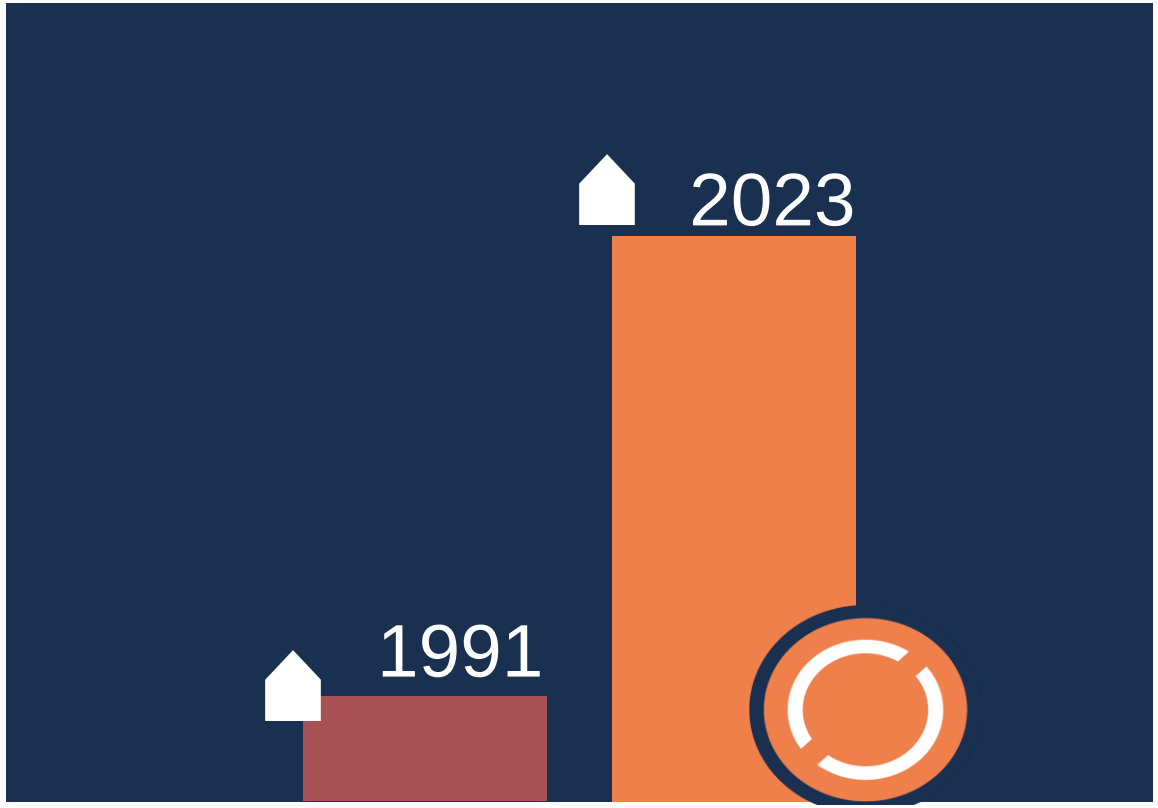
on Motor Fuels and Heating Fuels

23 €/tonne in **1991**[1]

122 €/tonne in **2023**[1]

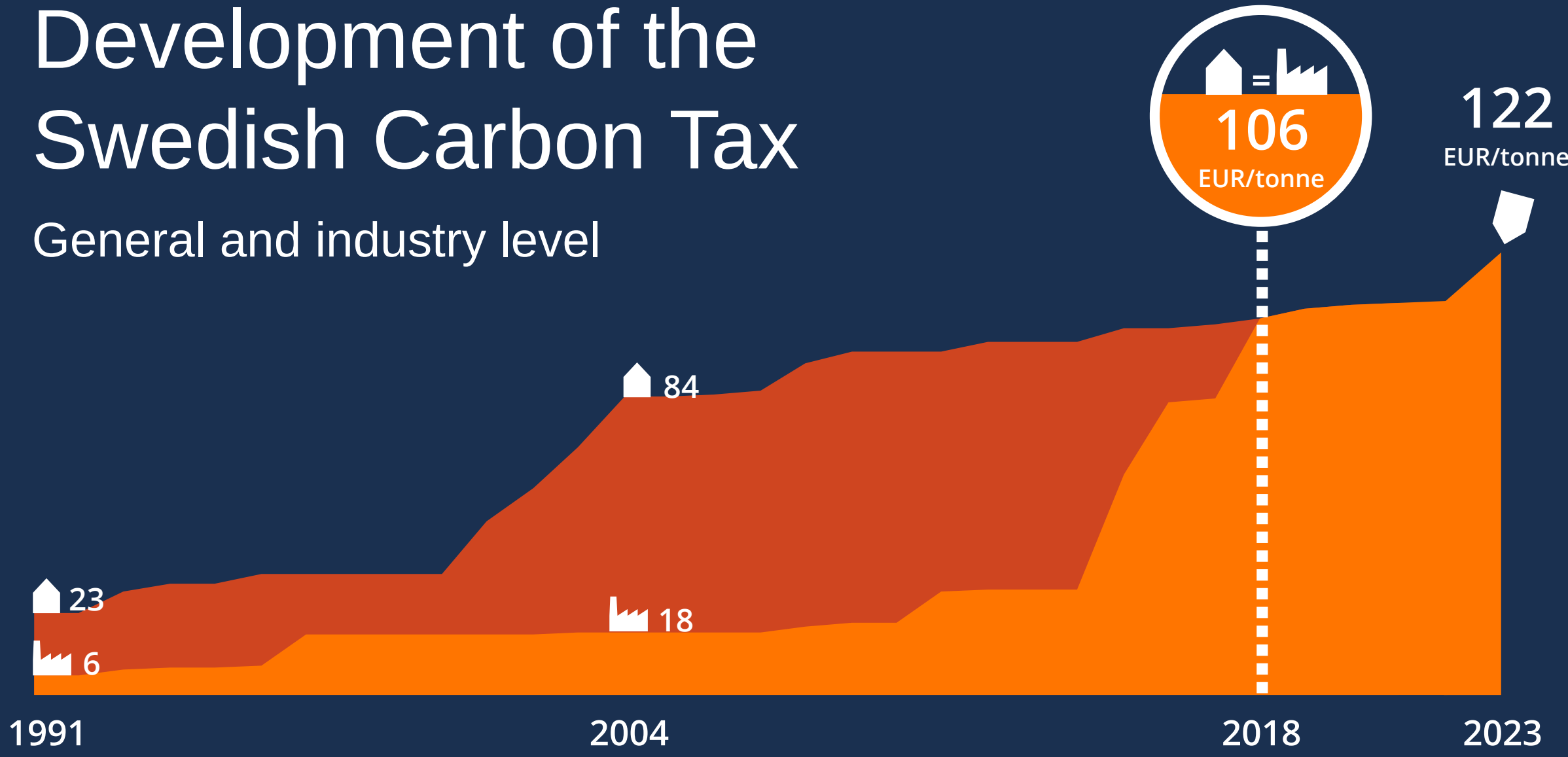
[1] Exchange rate from 3 Oct 2022, nominal rates
1 € = 10.87 SEK

Introduced with a **high** level for motor fuels and heating fuels in households and service and a **low** for heating fuels in industry.

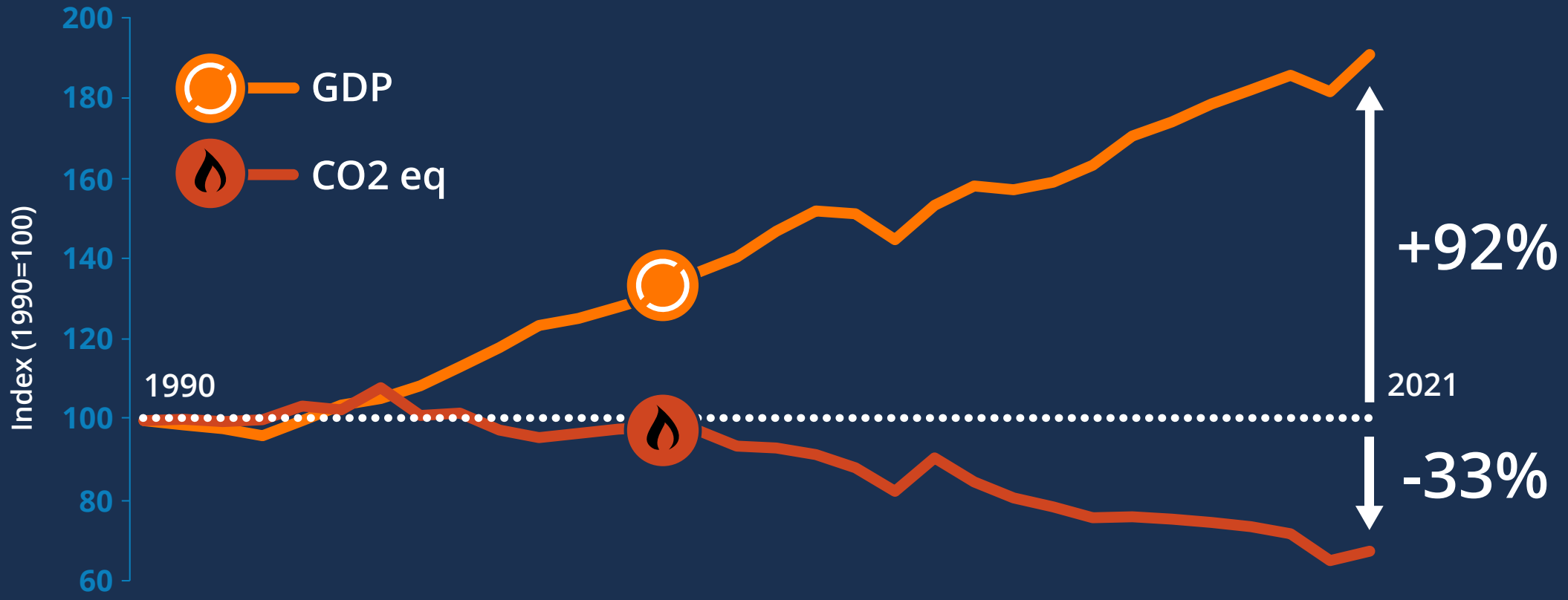


Development of the Swedish Carbon Tax

General and industry level



Real GDP and Domestic CO2eq Emissions in Sweden **1990–2021**



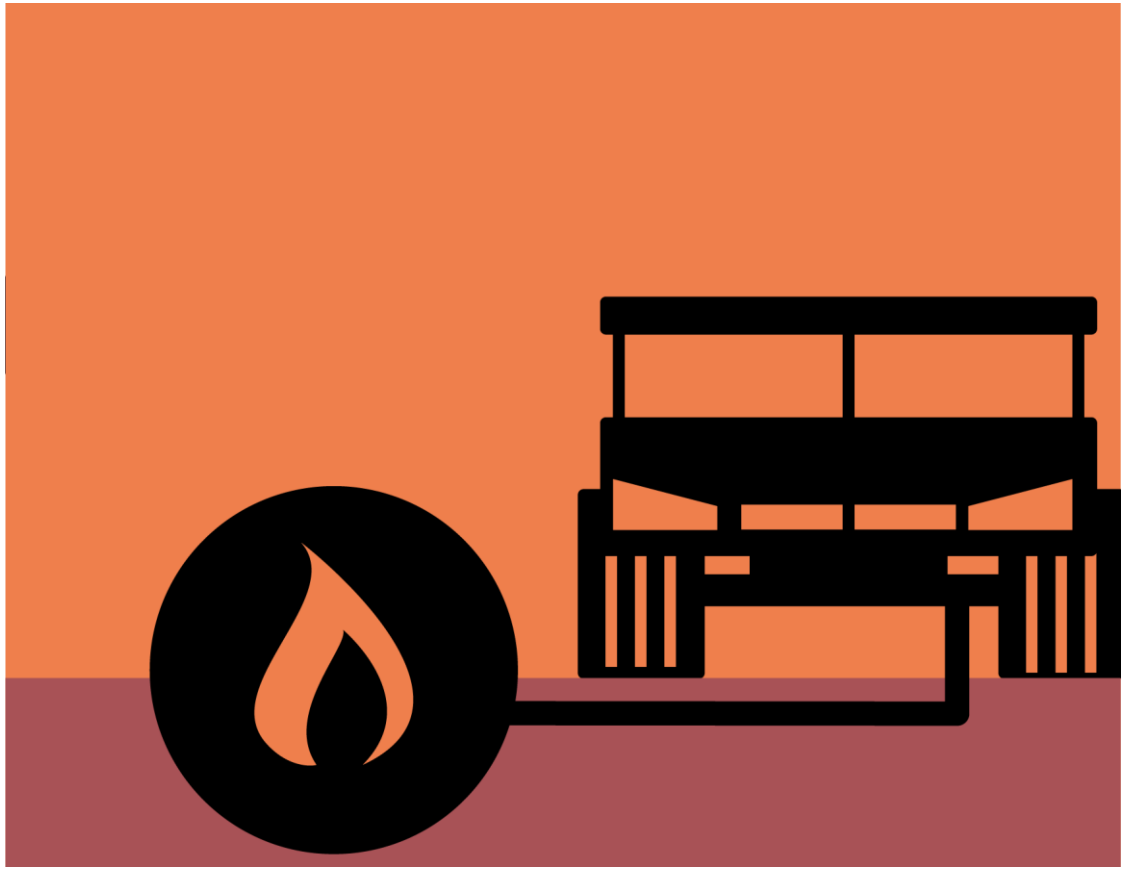
Sources: Swedish Environmental Protection Agency, Statistics Sweden

Distributional Effects Households 1(3)

Heating fuels: Fossil heating fuels have been phased out.

- Fossil heating fuel use has since 1990 dropped by more than 90%, now less than 2% of Sweden's total greenhouse gas emissions.
- Replaced by district heating (input basically household waste and wood scraps; more than 90 % of all flats), wood pellets burners and heat pumps (non-fossil electricity).
- Temporary aid schemes for conversion to renewable heating.

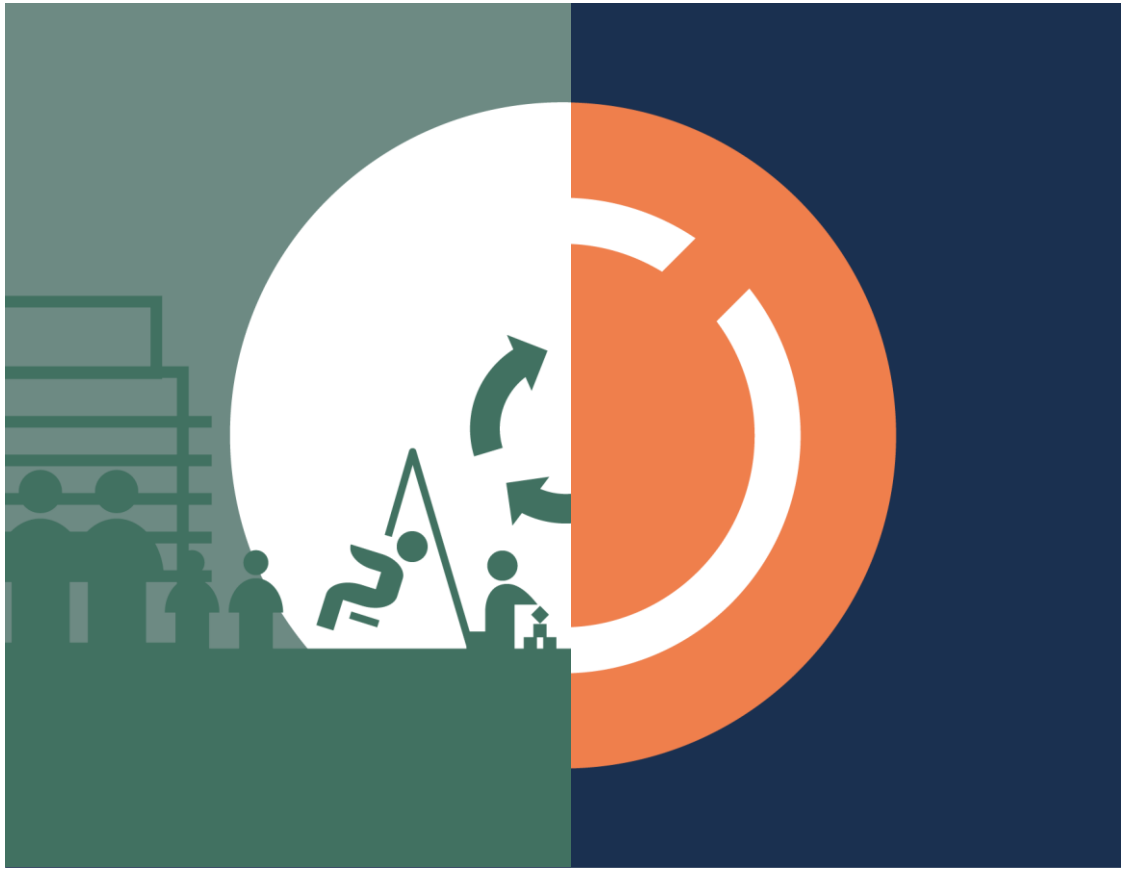
Distributional Effects Households 2(3)



Motor fuels

- Major challenge remains for a fossil free transport sector.
- Approximately 95 % of current carbon tax revenues from motor fuels.
- Reduction obligation scheme for fuel distributors; biofuel share considered when setting carbon tax rates for petrol and diesel.
- Food-based biofuels a problem or part of the solution?

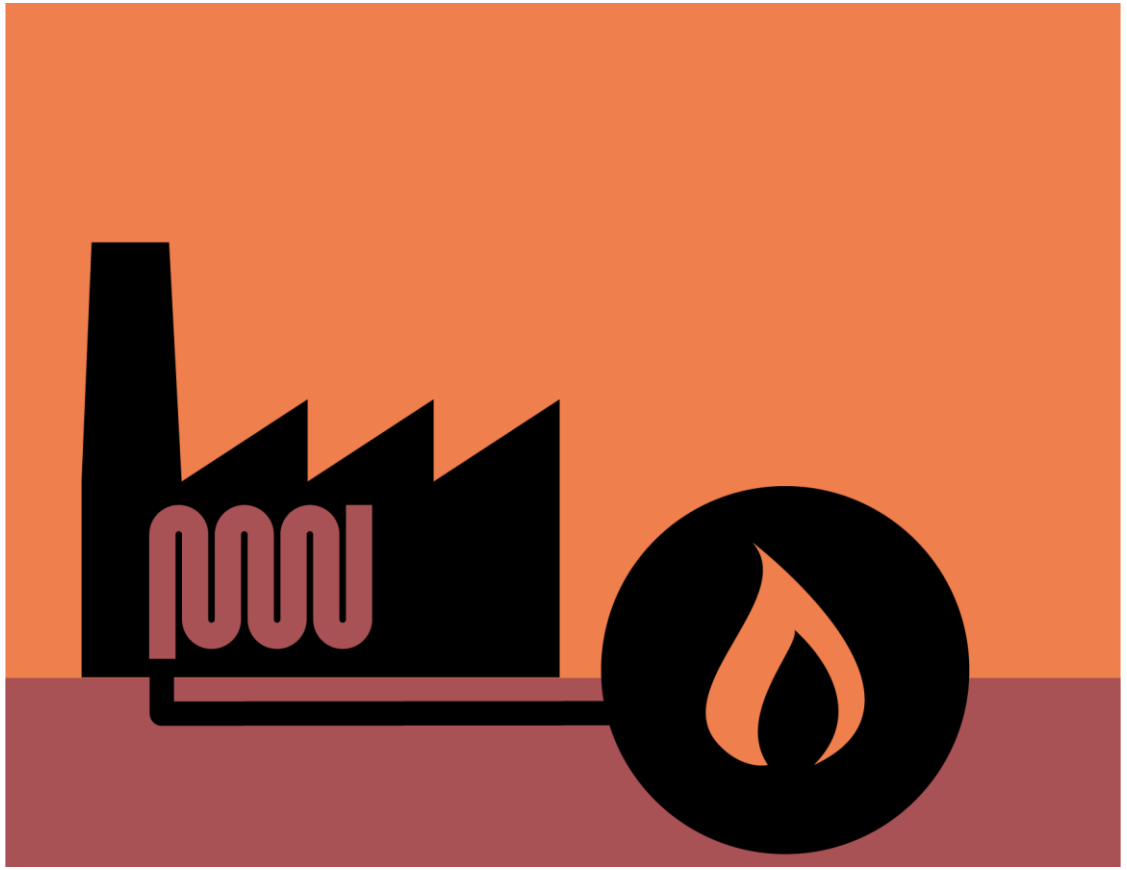
Distributional Effects Households 3(3)



Also addressed by other measures

- General welfare and social transfers.
- Increased basic income tax reductions for low- and middle-income households.
- No ear-marking of tax revenues

Distributional Effects Business 1(2)



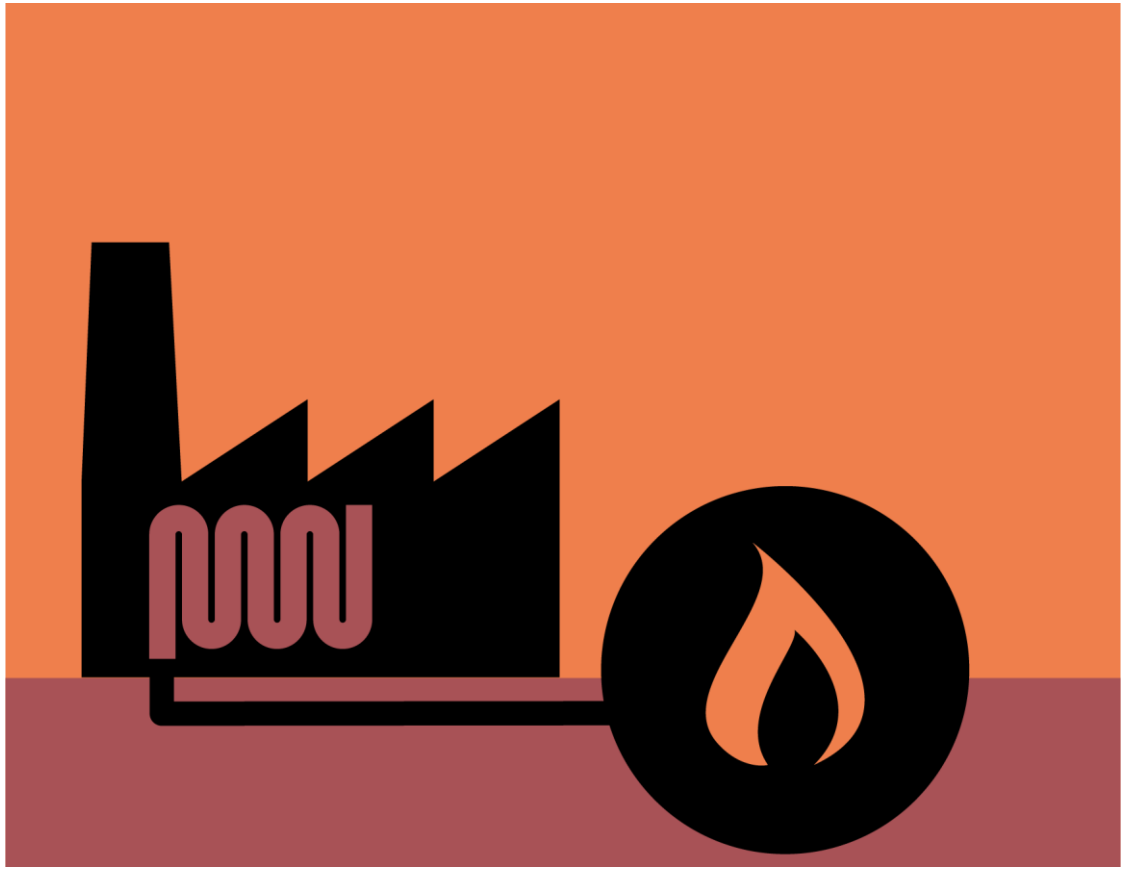
Industry and CHP **within** EU ETS:

- No carbon tax, 100% energy tax.

Industry and CHP **outside** EU ETS:

- 100 % carbon tax; 100% energy tax.
- In general, low costs for energy, high costs for labor and capital.
- No tax on non-heating fuels, but EU ETS covers emissions from heating as well as non-heating in covered installations

Distributional Effects Business 2(2)



Service sector (e.g. offices, shops)

- Fossil fuels: 100 % energy tax, 100 % carbon tax
- District heating
  - provides 77 % of service sector space heating
  - fossil fuel input taxed by 100 % energy tax, 0 % carbon tax within EU ETS
  - major input renewable energy (household waste, wood scraps etc); fossil fuel input less than 5 %

Why is Carbon Taxation a Good Idea?

- Reduced emissions can be combined with long-term economic development and prosperity
- Low administrative costs, ETS more complicated and costly
- Raises revenues, which can be used to make options available

What Make Households and Firms Adapt?

- General environmental concerns, both from households and firms
- Broad political consensus
- Ensure that feasible options are available
  (bio fuels, district heating, public transport, housing insulation etc.)
- Step-by-step approach combined with limited tax exemptions or reductions for certain areas of the economy

Carbon Taxation is NOT Rocket Science

Make it happen – now!

- We know how to price carbon by a carbon tax
  - Economic theory is solid
  - More and more jurisdictions can share experiences
  - Ongoing discussions in many global fora
- Political courage …. not easy but necessary … and gives revenues
- Policy packages …. make options available, step-by-step approach, targeted aid schemes, R&D etc.
- Cooperation between Governments, academia and stakeholders

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More information
on the Swedish carbon tax:
http://www.government.se/carbontax