

Carbon Taxation in Sweden

March 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

1990's and onwards

Environmental issues given high priority by Government and citizens

Until 1980's

Primarily fiscal purposes

generally low tax levels

- increased focus on environmental taxes
- increased tax levels, step-by-step
- focus on increased carbon tax share of taxation of energy (“carbon tax heavy”)

Now

Energy tax:
fiscal and energy efficiency

Carbon tax:
climate



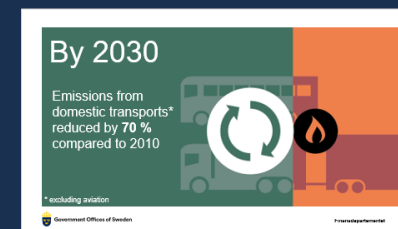
30 Years of Carbon Taxation Swedish Experiences

Carbon Tax

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

New national climate targets

- 2017** Decided by Parliament



The Swedish Carbon Tax in 1991

.... part of a major tax reform

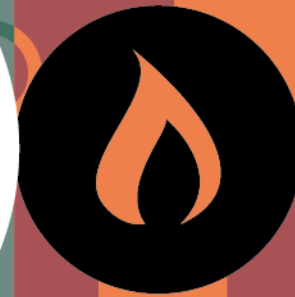
- Reduced and simplified labour taxes
 - ▼ - **6** billion \$
- Value Added Tax on energy
 - ▲ + **1.8** billion \$
- Carbon tax introduced at a low levels combined with approx. 50% cuts in energy tax rates
 - ▲ + **0.4** billion \$
- Certain investment state aid measures



By 2030

Emissions from
domestic transports*
reduced by 70 %
compared to 2010

* excluding aviation



By 2045

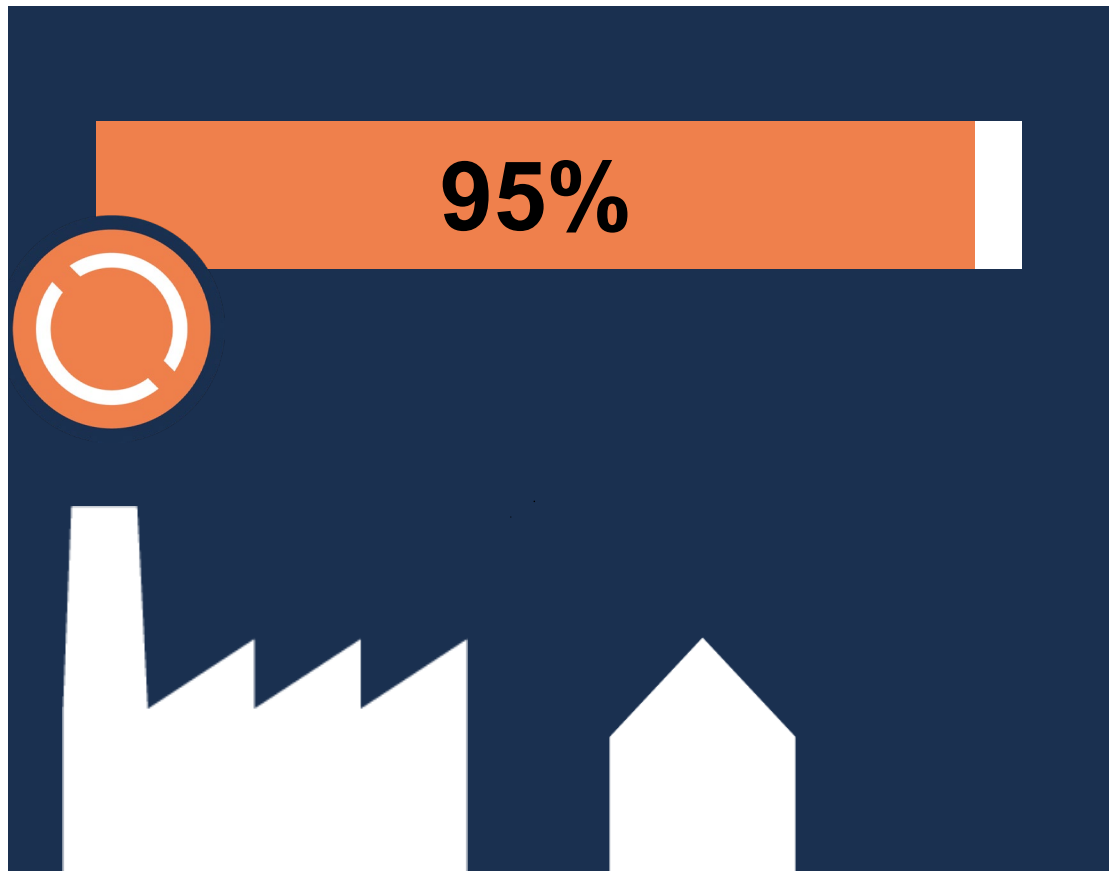
No net emissions
of greenhouse
gases



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 CO₂ and other greenhouse gases.
- Large part of heavy industry

Carbon tax on fossil fuels in installations covered by EU ETS:

- No carbon tax on industry, CHP and district heating

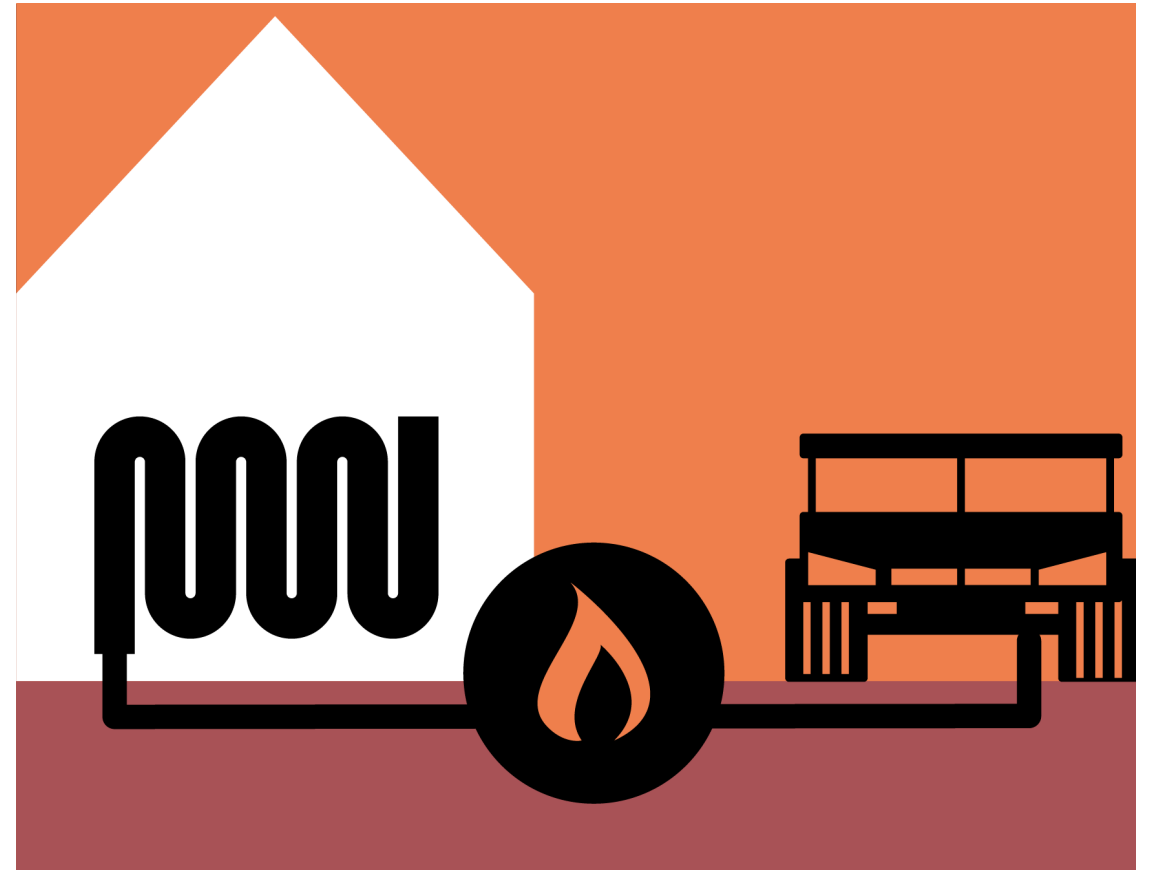
Approximately 95% of Swedish fossil carbon emissions are covered by carbon tax or EU ETS



Carbon Tax

on Motor Fuels and Heating Fuels

- Calculated on the basis of average fossil carbon content of fuels.
- Tax rates expressed in weight or volume units (tons, litres).



Carbon Tax

on Motor Fuels and Heating Fuels

22 \$ (23 €) in **1991**

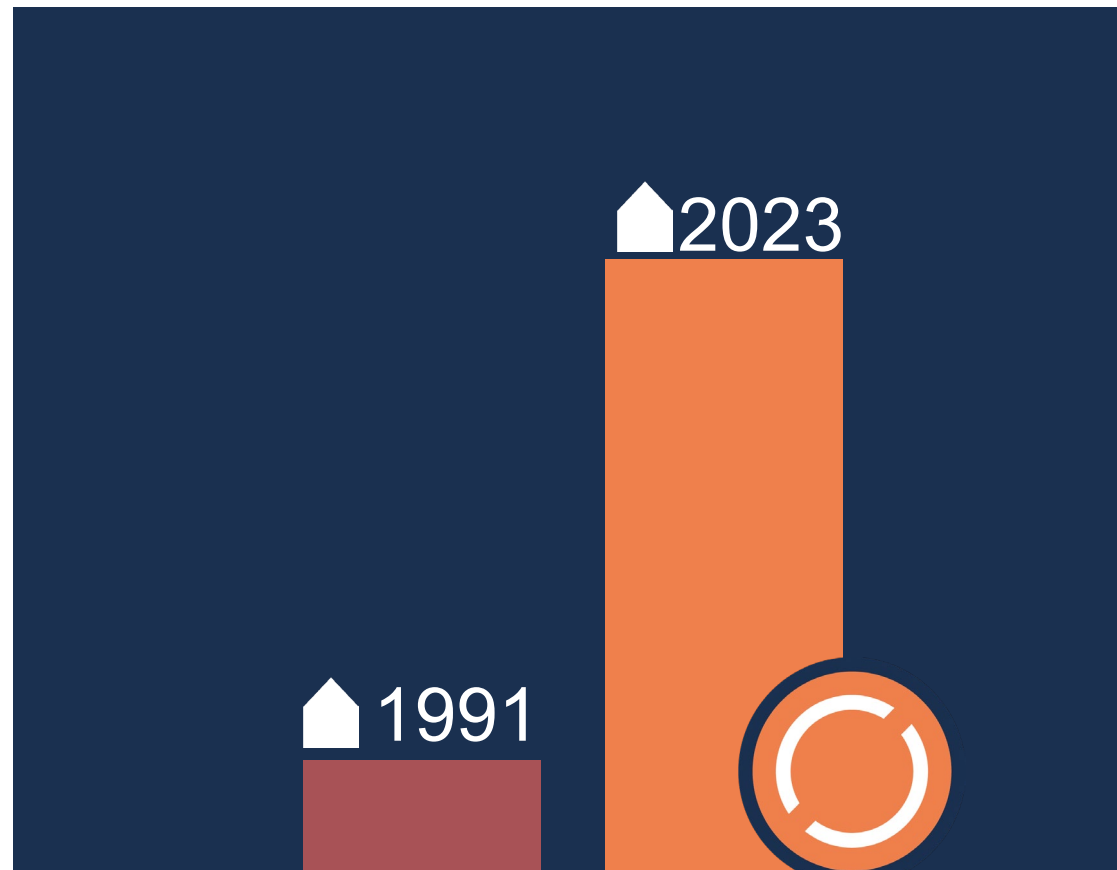
119 \$ (122 €) in **2023**¹

¹ Exchange rate from 3 Oct 2022

1 USD = 11.14 SEK

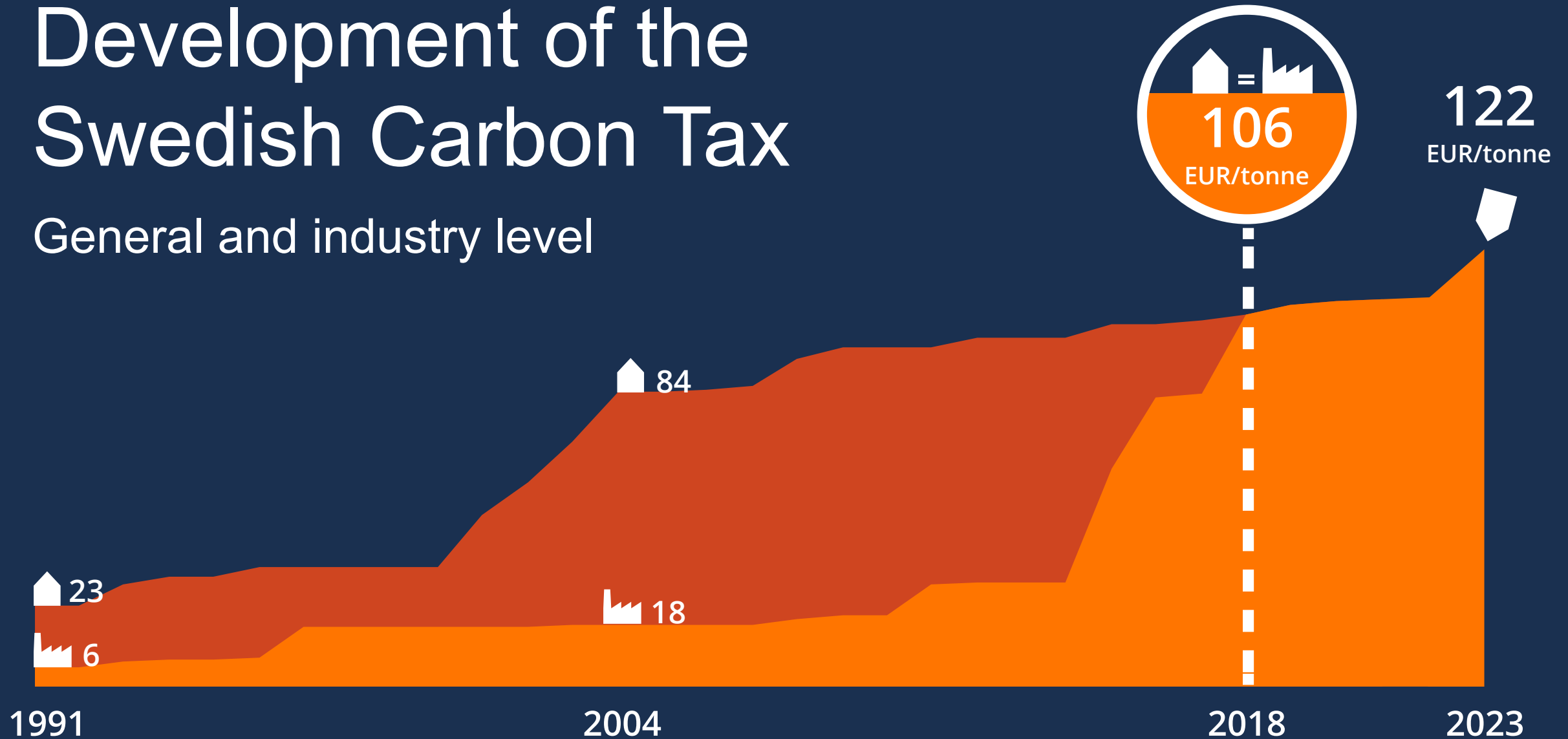
1 Euro = 10.87 SEK

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

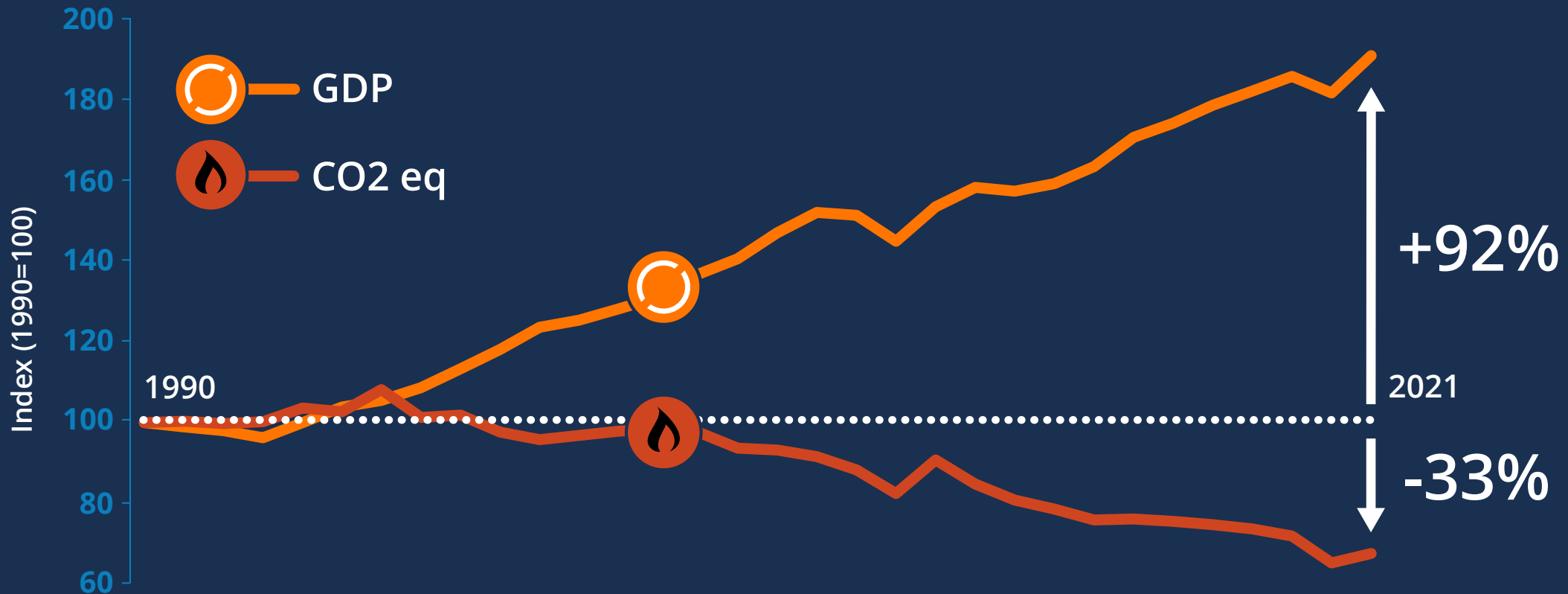


Development of the Swedish Carbon Tax

General and industry level



Real GDP and Domestic CO2eq Emissions in Sweden 1990–2021



Sources: Swedish Environmental Protection Agency, Statistics Sweden



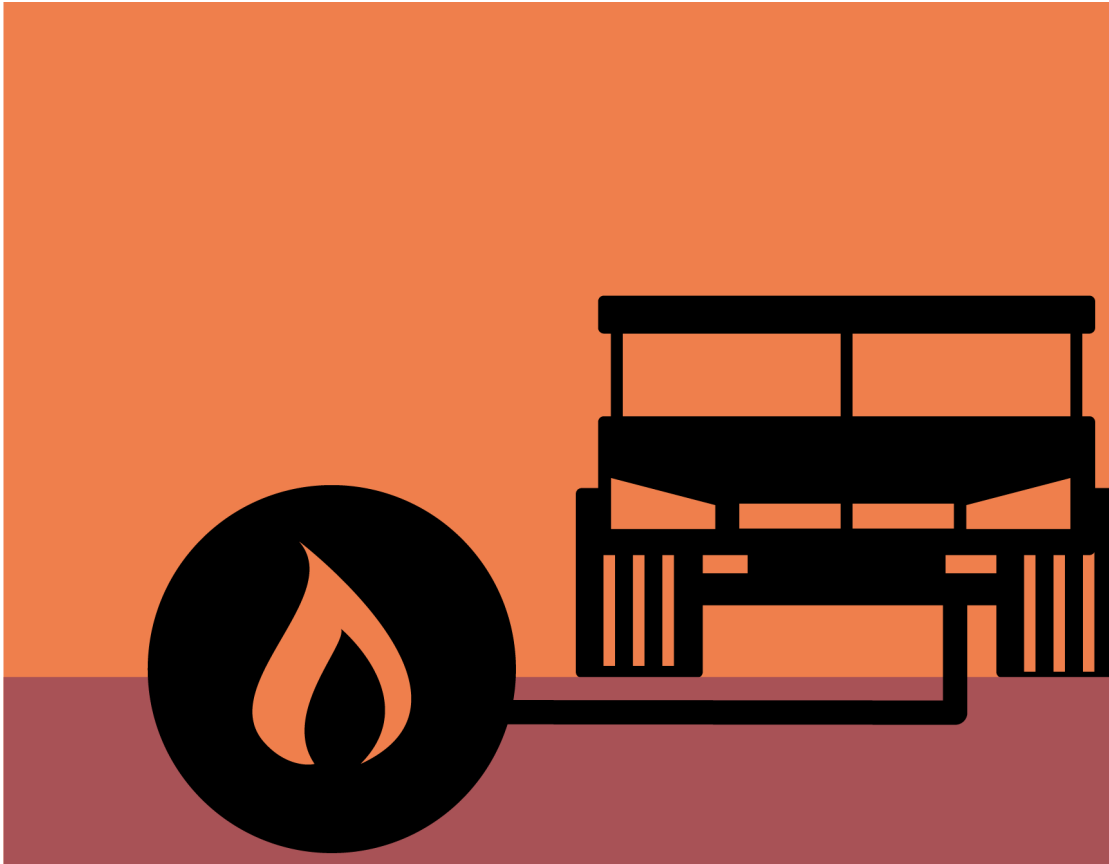
Distributional Effects Households 1(3)



Heating fuels: Fossil heating fuels have been phased out.

- Fossil heating fuel use has since 1990 dropped by more than 90 % and represents 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.
- Temporary aid schemes for conversion to renewable heating.

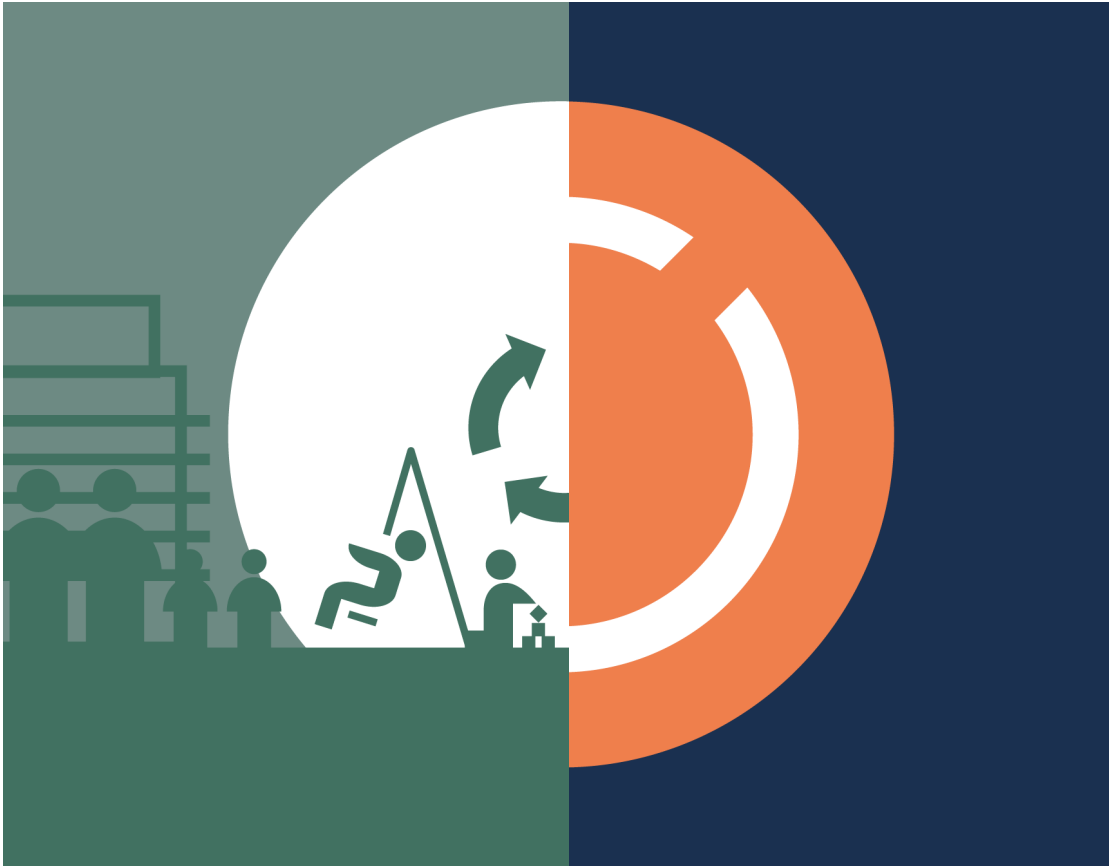
Distributional Effects Households 2(3)



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; taking biofuel share into account when setting carbon tax rates for petrol and diesel.
- Food-based biofuels a problem or part of the solution?

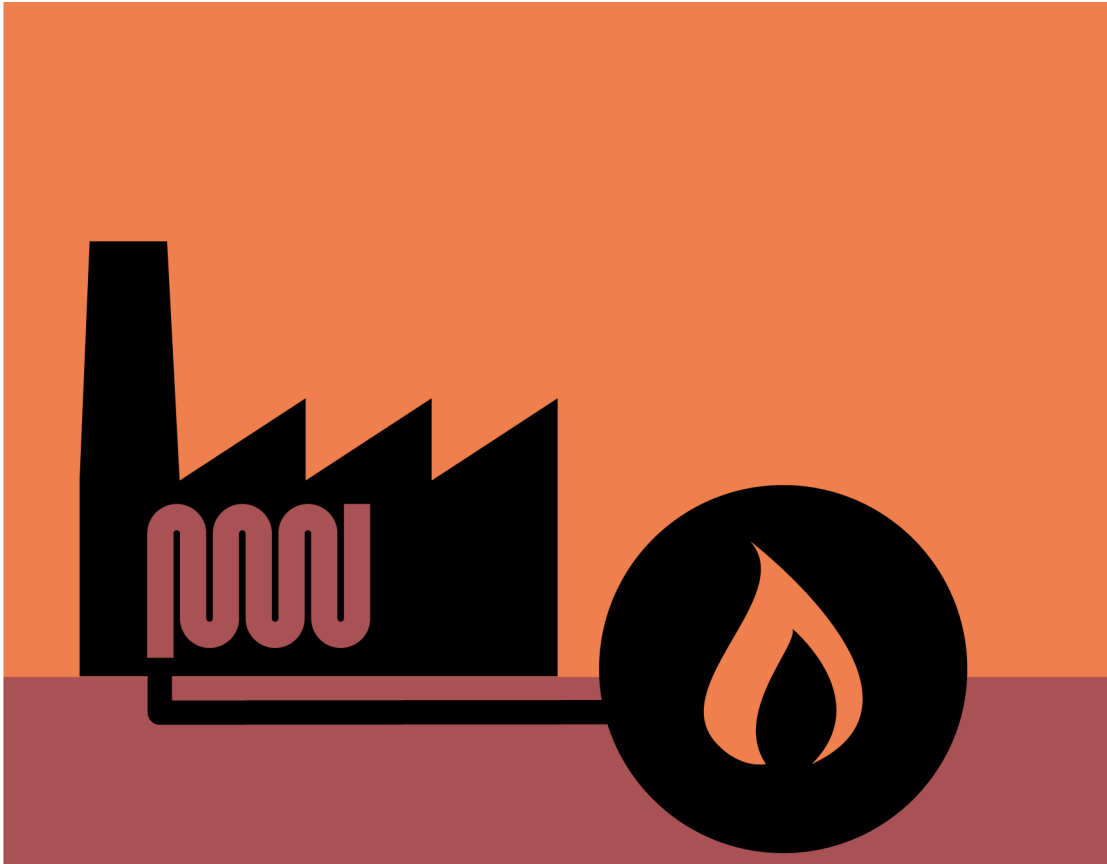
Distributional Effects Households 3(3)



Also addressed by other measures

- General welfare and social transfers.
- Increased basic income tax reductions for low and middle income households.

Distributional Effects Business 1(2)



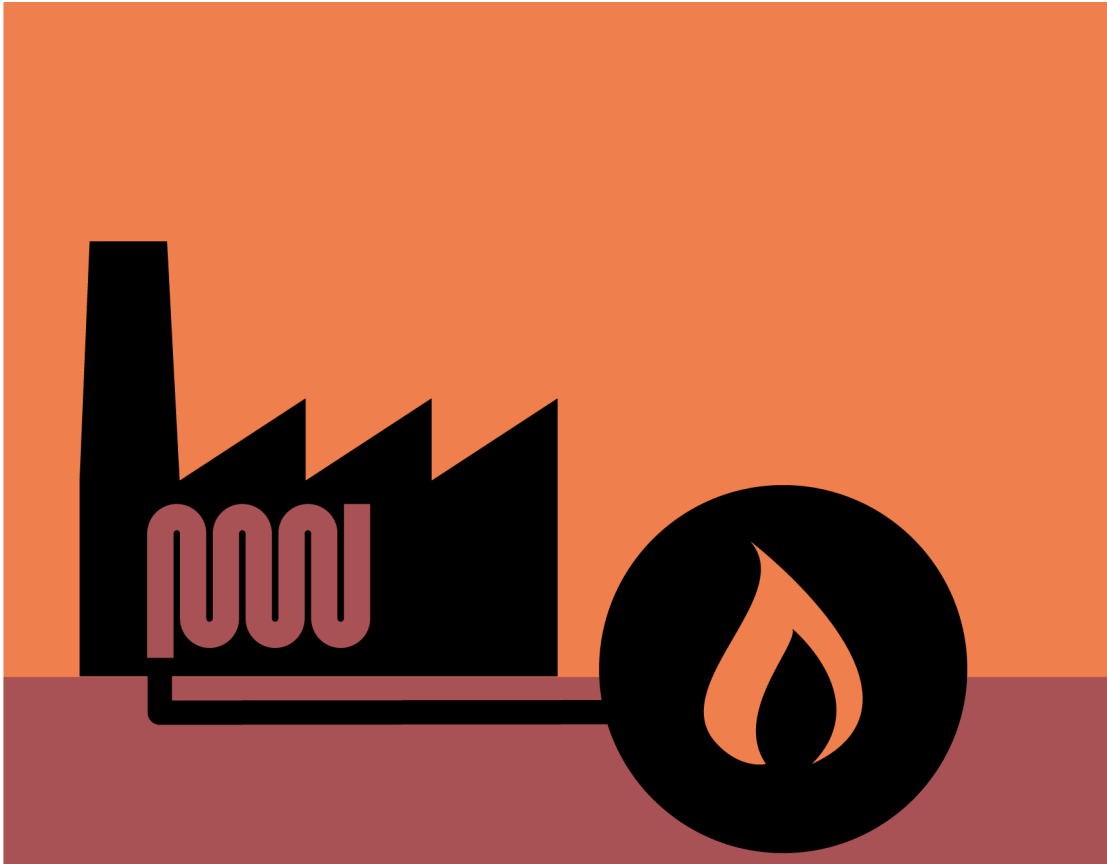
Industry and CHP **within** EU ETS:

- 2011 No carbon tax, lower energy tax.
- 2018 Carbon tax 11 % reintroduced for heat production in combined heat and power plants (CHP).
- 2019 Carbon tax for CHP plants raised to 91 %, 100 % energy tax.
- 2023 No carbon tax for CHP, 100% energy tax.

Industry and CHP **outside** EU ETS:

- 2011–2018 Step-wise increase to 100 % carbon tax; lower energy tax.
- 2019 Energy tax 100 % for CHP plants
- In general low costs for energy, high costs for labor and capital.

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>

