

# Carbon Taxation in Sweden

January, 2021



# 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

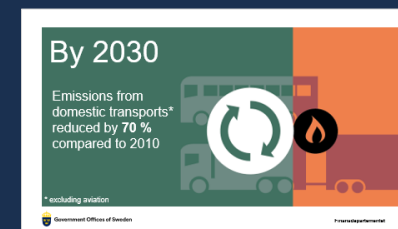
## Carbon Tax

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

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## 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



# Environmental Taxes in the 2019 January Agreement

After the 2018 Parliamentary election, an agreement was made in January 2019 between

- Social Democratic Party
- Green Party
- Centre Party
- The Liberals

Environmental taxes, for example:

- Tax measures, *in force from 1.8.2019*:
  - Increased chemicals tax
  - Abolished tax reduction for diesel in mining
  - Increased energy and carbon taxation on fuels in certain heat production
- Tax on single use plastic bags, *in force from 1.5.2020*
- "Green tax shift" (15 billion SEK = approx. 1.5 billion € during 4 years)
- "Comprehensive tax reform"

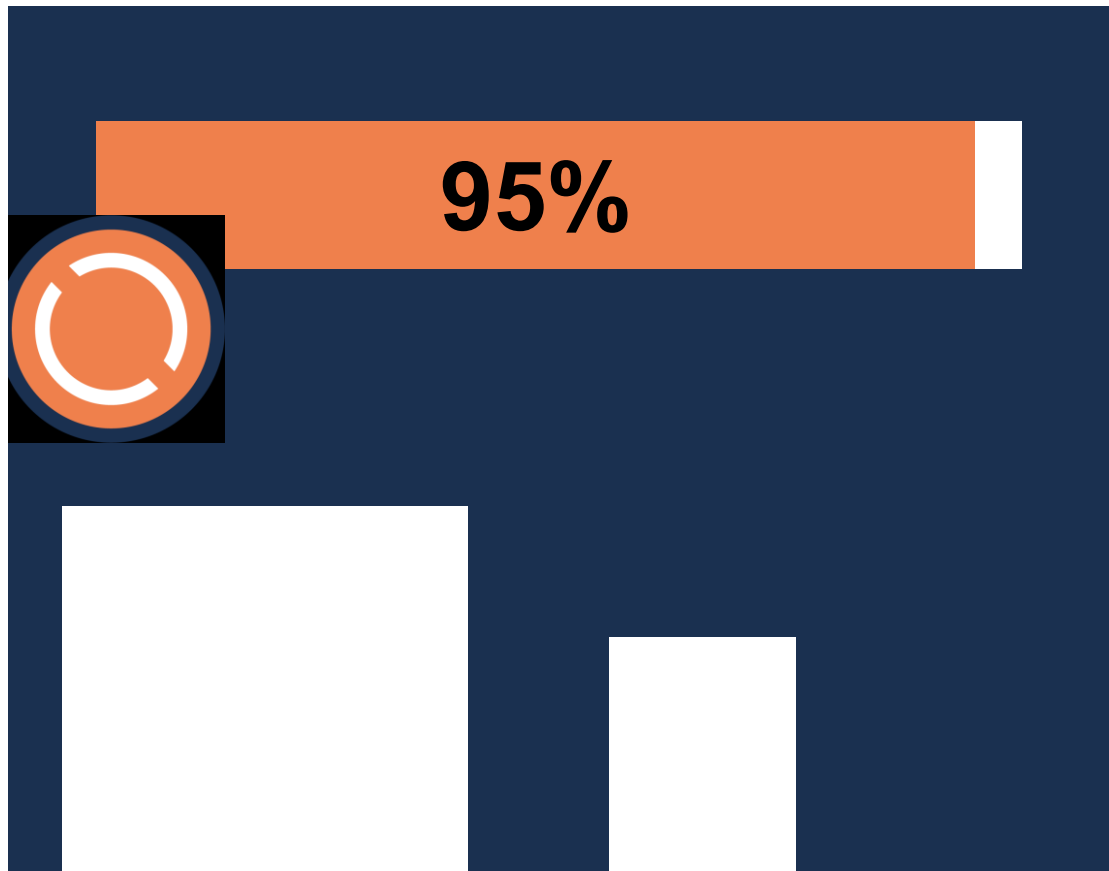




# Swedish Carbon Pricing



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



EU Emission Trading Scheme (EU ETS) since 2005

- Emissions of fossil CO<sub>2</sub> and other greenhouse gases.
- Large part of heavy industry

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

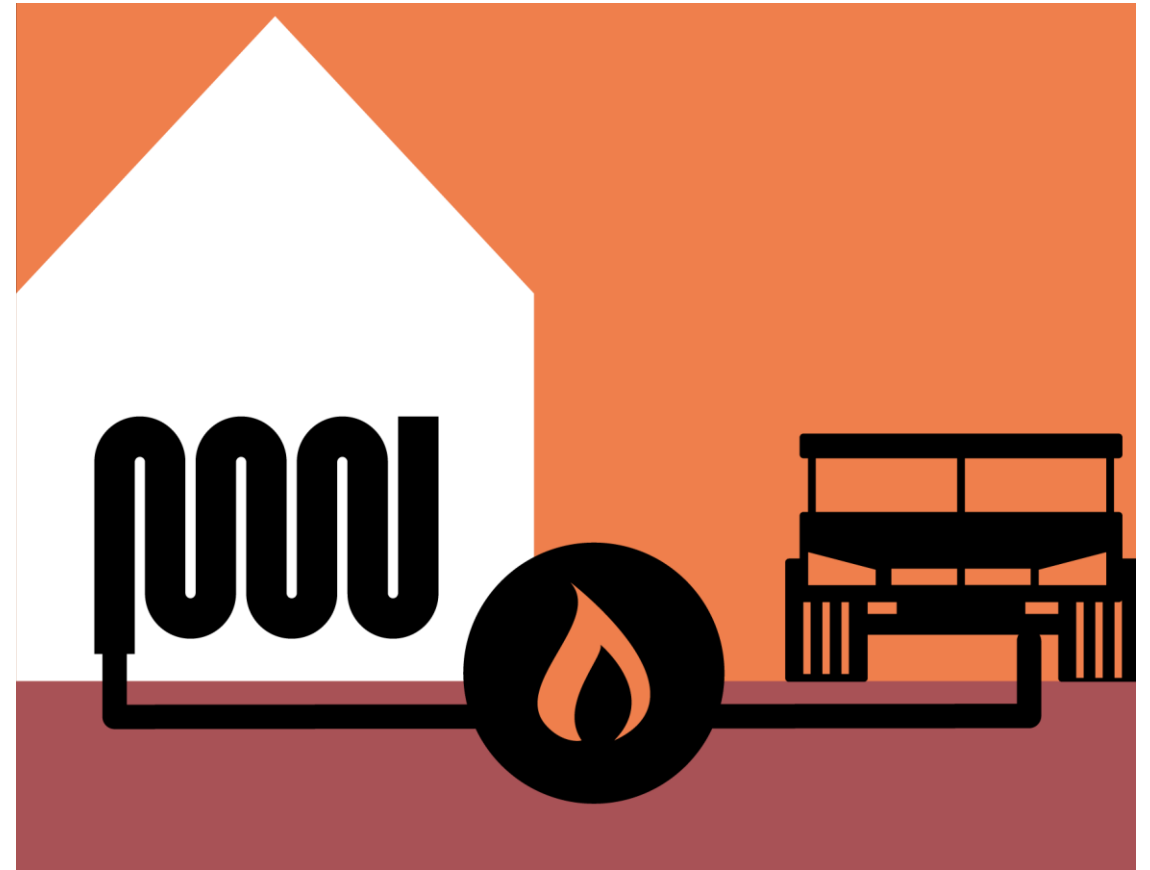
- No carbon tax on industry
- Reduced carbon tax on CHP and district heating

**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

28 \$ (24 €) in **1991**

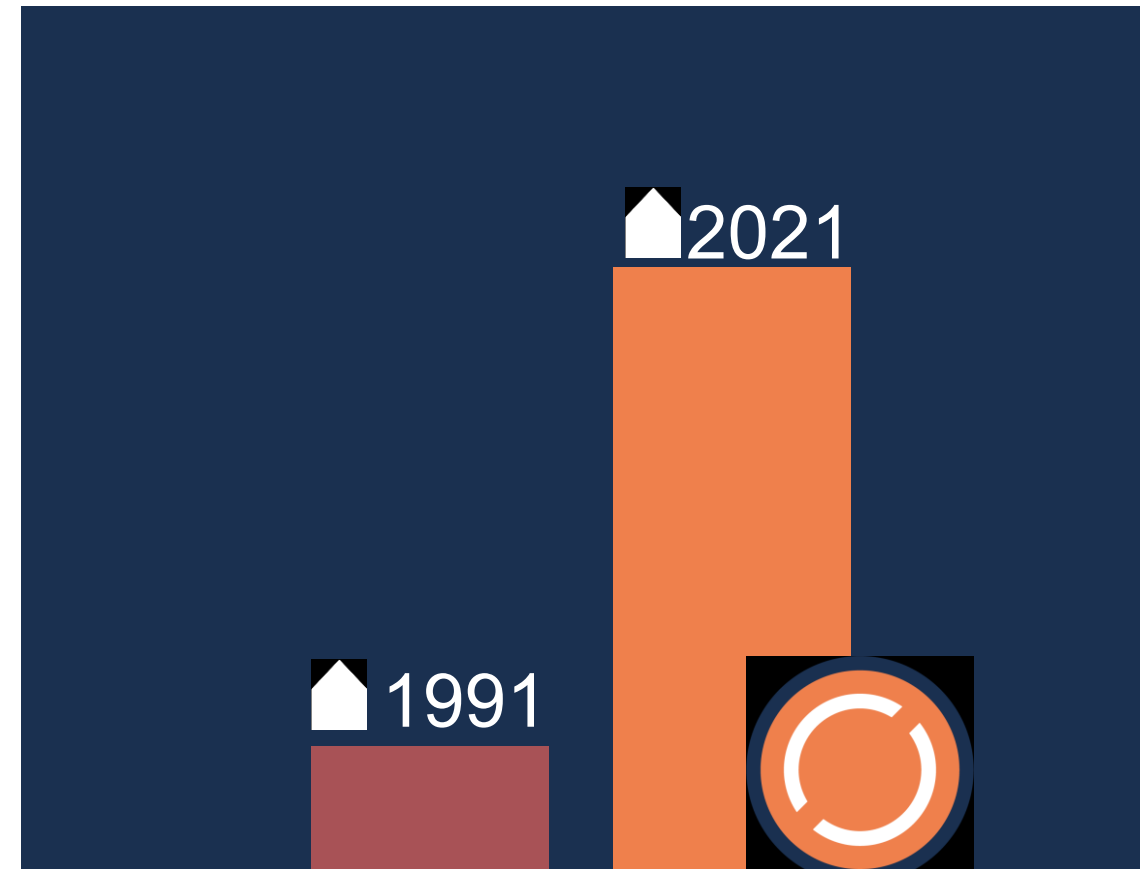
134 \$ (114 €) in **2021**<sup>1</sup>

<sup>1</sup> Exchange rate from 1 Oct 2020

1 USD = 8.9 SEK

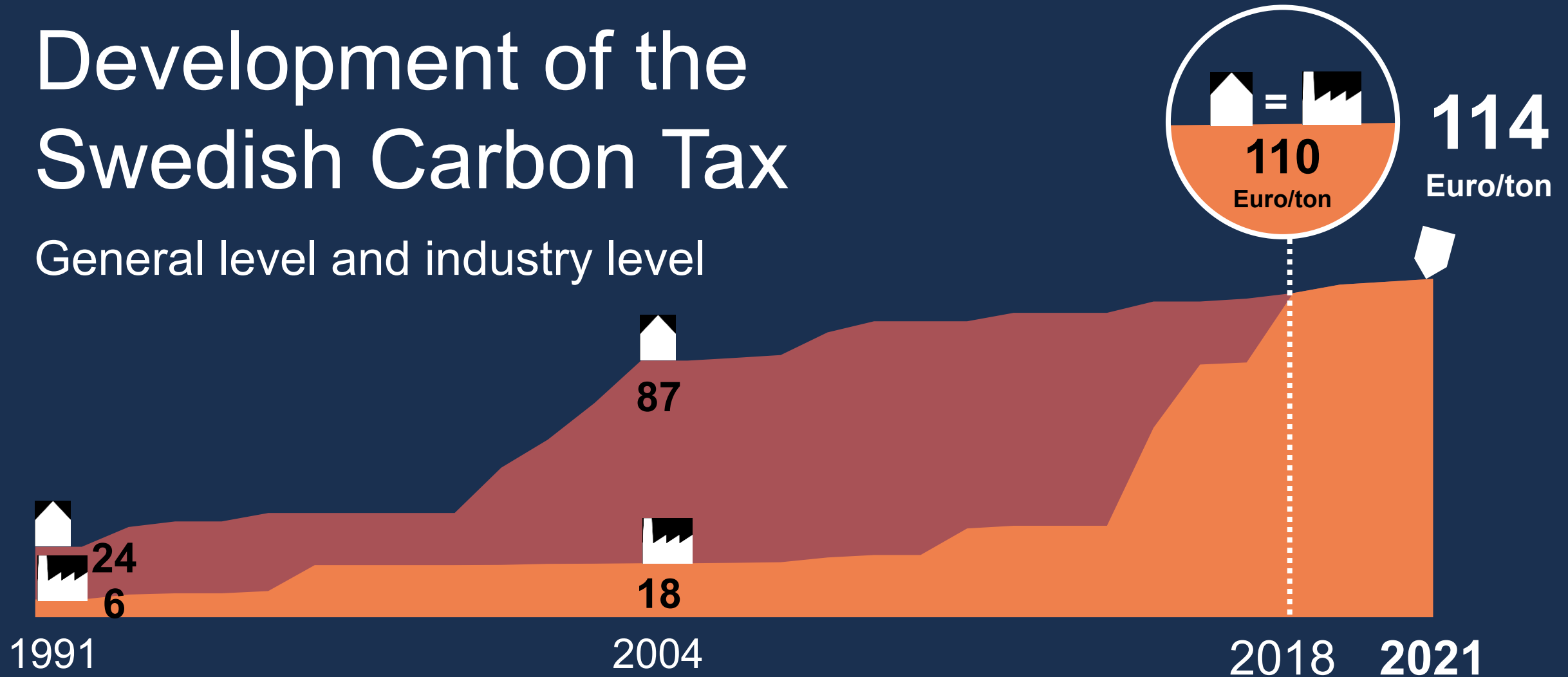
1 Euro = 10.49 SEK

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 level and industry level

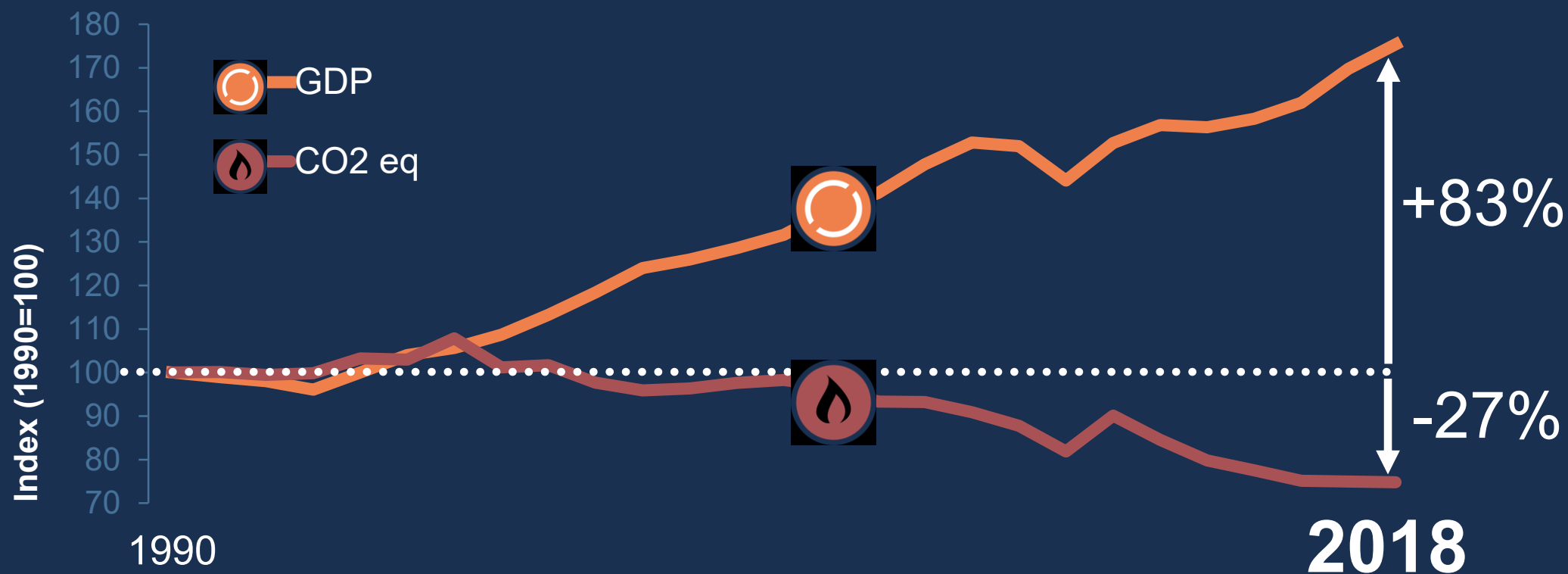


NOTE: from 2008 industry outside EU Emissions Trading Scheme (EU ETS)



# Real GDP and Domestic CO<sub>2</sub>eq Emissions<sup>1</sup> in Sweden, 1990–2018

<sup>1</sup> In accordance with Sweden's National Inventory Report, submitted under the UNFCCC and the Kyoto Protocol. CO<sub>2</sub> = approx. 80 % of total CO<sub>2</sub>eq emissions.



Sources: Swedish Environmental Protection Agency, Statistics Sweden



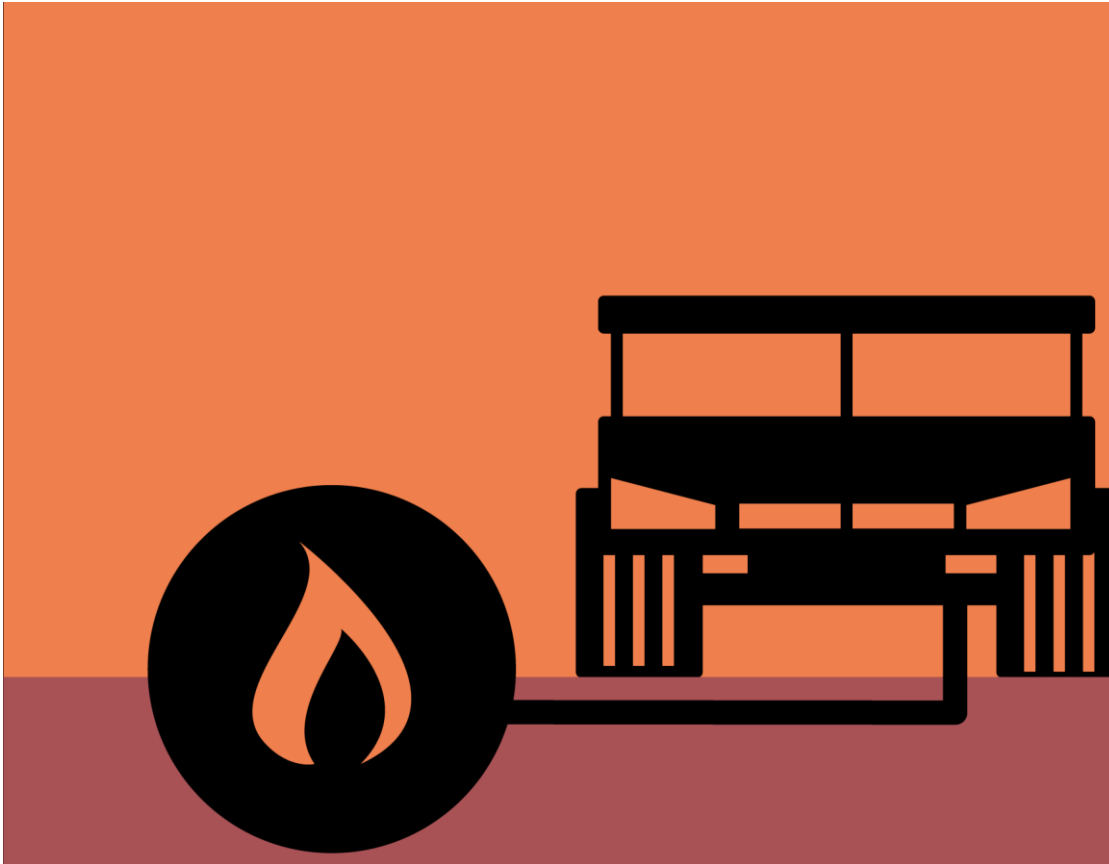
# Distributional Effects Households 1(3)



## Heating fuels: Fossil heating fuels have been phased out.

- Fossil heating fuel use has since 1990 dropped by 85 % and now represents 2 % of Sweden's total greenhouse gas emissions.
- Replaced by district heating (in-put basically household waste and wood scraps; 92 % of all flats), wood pellets burners and heat pumps.
- Temporary aid schemes for conversion to renewable heating.

# Distributional Effects Households 2(3)

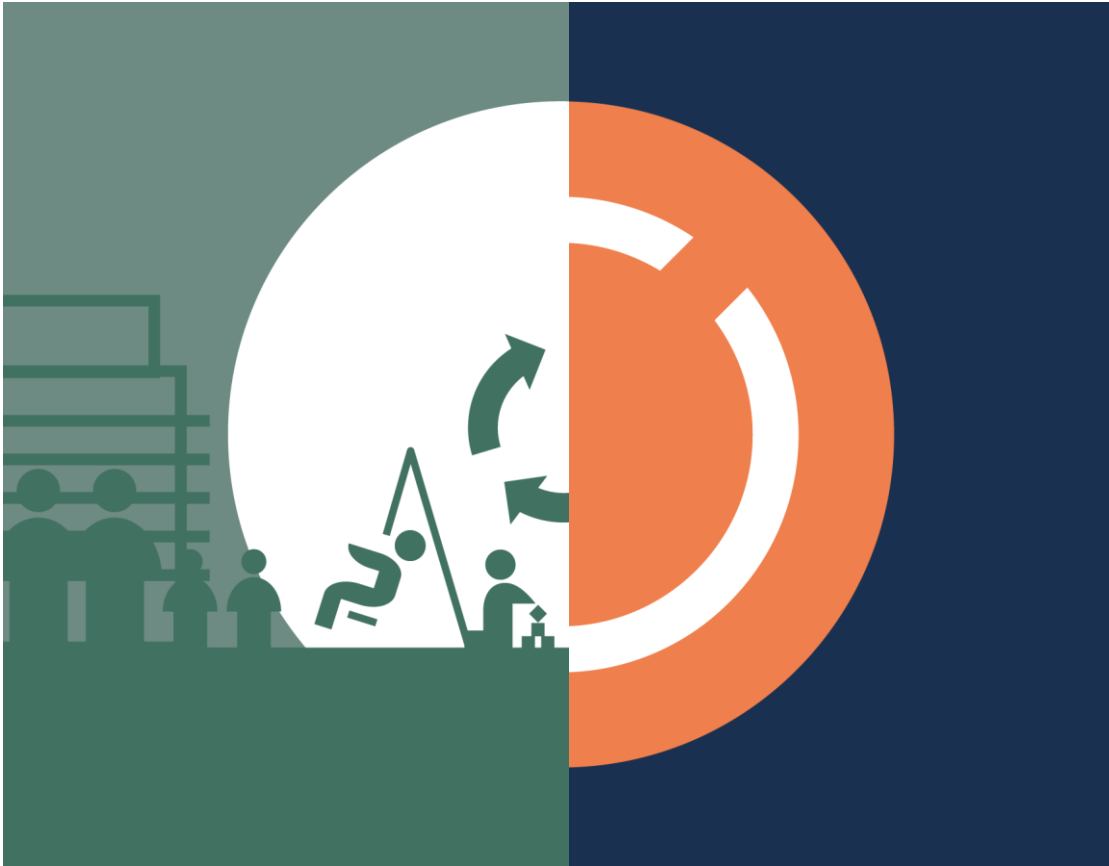


## Motor fuels

- Major challenge remains for a fossil free transport sector.
- 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)

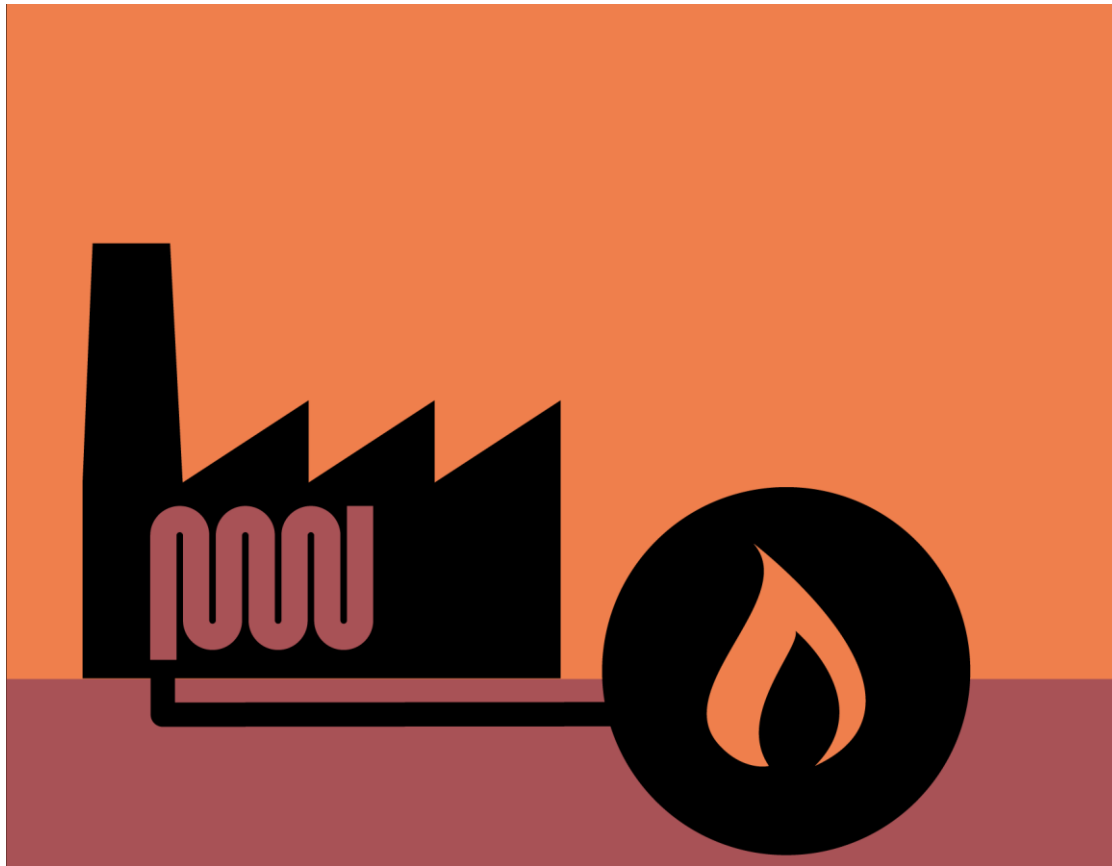


## Also addressed by other measures

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



# Distributional Effects Business 1(2)



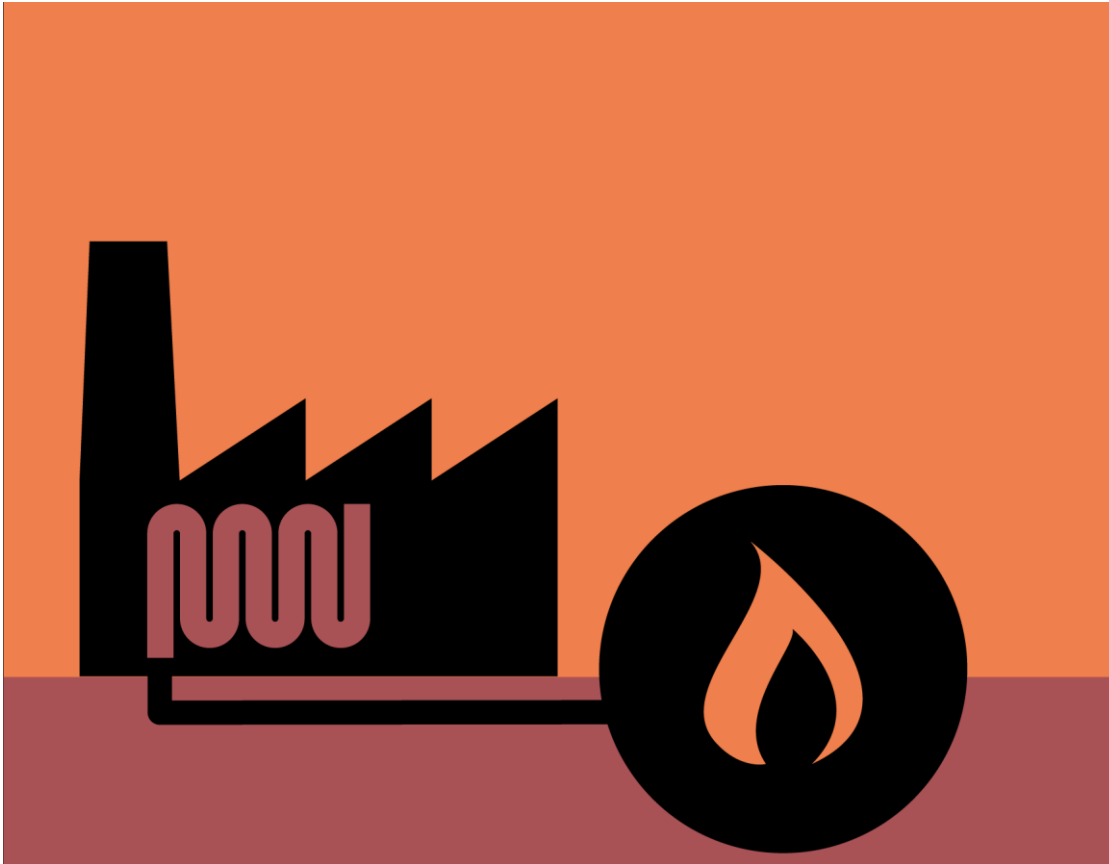
## Industry and CHP **within** EU ETS:

- 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.

## Industry and CHP **outside** EU ETS:

- 2011–2018 Step-wise increase to 100 % carbon tax ; lower energy tax.
- 2019 Energy tax 100 % for CHP
- 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 in-put taxed by 100 % energy tax, 91% carbon tax
  - major in-put renewable energy (household waste, wood scraps etc); fossil fuel in-put 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



# The European Green Deal

.... policy reforms to ensure effective carbon pricing

## EU Commission Roadmap of key proposals:

- Revision of Energy Taxation Directive June 2021
- Extension of the EU ETS to new sectors June 2021
- Carbon Border Adjust Mechanism 2021
- Review of relevant State Aid Guidelines 2021

Exchange of views on the best road forward



# Contact Information

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

