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

Until 1980’s
Primarily fiscal purposes

1990’s and onwards
Environmental issues given high priority by Government and citizens

Now

Energy tax:
fiscal and energy efficiency

Carbon tax:
climate

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

generally low tax levels
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
Environmental Taxes in the 2019 January Agreement

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"

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

- Social Democratic Party
- Green Party
- Centre Party
- The Liberals
Swedish Carbon Pricing
EU Emission Trading Scheme (EU ETS) since 2005

- Emissions of fossil CO\textsubscript{2} 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**¹

¹ 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$_2$eq Emissions$^1$ in Sweden, 1990–2018

$^1$ In accordance with Sweden’s National Inventory Report, submitted under the UNFCC and the Kyoto Protocol. CO$_2$ = approx. 80 % of total CO$_2$eq emissions.

Sources: Swedish Environmental Protection Agency, Statistics Sweden
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.
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?
Also addressed by other measures

- General welfare and social transfers.
- Increased basic income tax reductions for low and middle income households.
Industry and CHP \textit{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 \textit{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.
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
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More information on the Swedish carbon tax:
http://www.government.se/carbontax