Why Carbon Taxation is a Good Idea

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Why is a Carbon Tax Important Now?

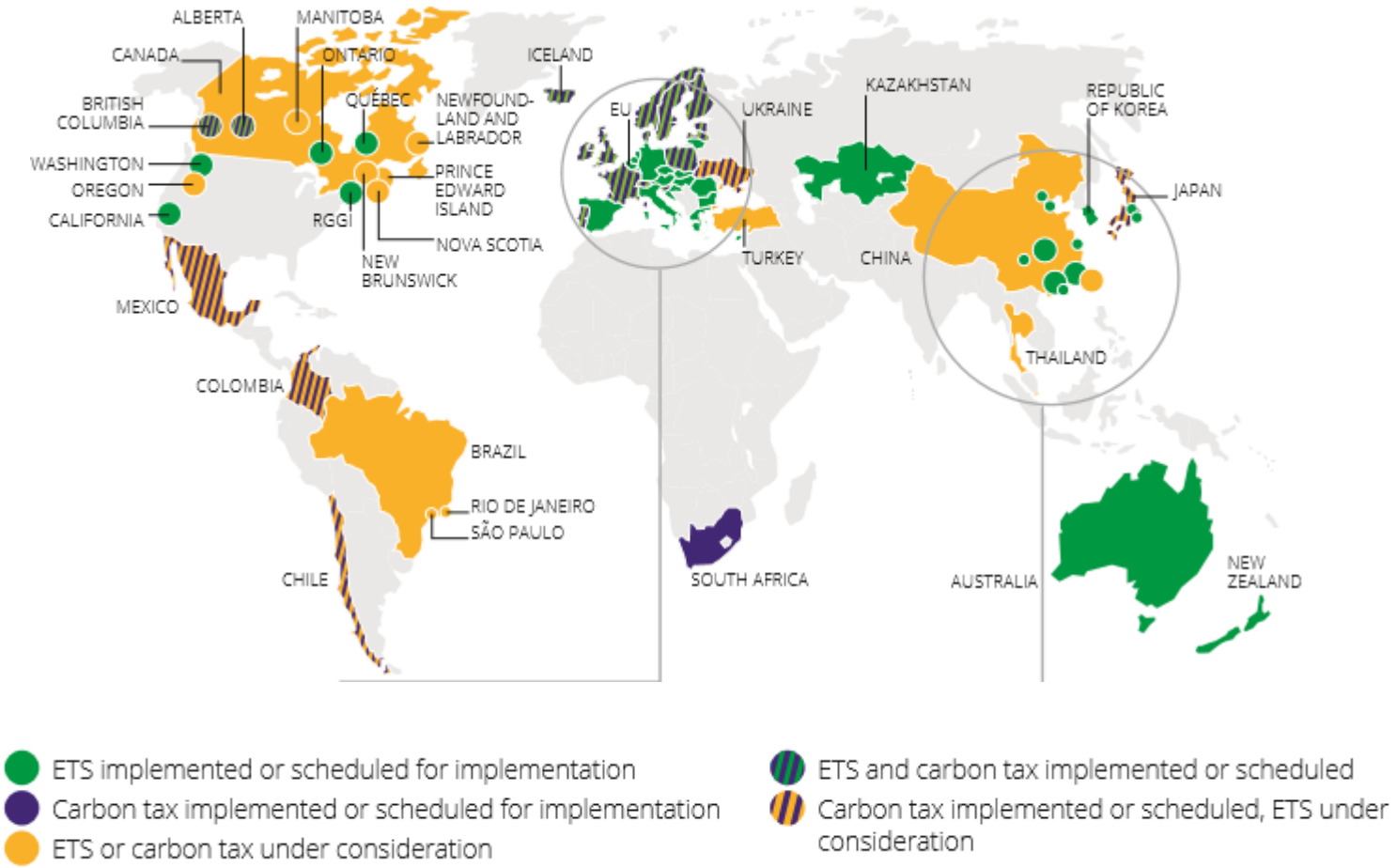
The Paris Climate Agreement

- Cost-effective tools are needed to deliver …. by all countries
- Put a price on carbon – strong signal to households and firms
- A carbon tax has low administrative costs vs emission trading

Global Outlook

- How can a carbon tax help drive **the sustainable growth necessary** to deliver on the Paris Agreement?
- **More and more jurisdictions** across the globe are introducing a **carbon tax**
  - Sweden has had a carbon tax since 1991.
  - What lessons can be learned?
- **The Road Forward …..**

FIGURE 1 | Summary map of regional, national and subnational carbon pricing initiatives implemented, scheduled for implementation and under consideration (ETS and carbon tax)



Source: “World Bank; Ecofys. 2017. Carbon Pricing Watch 2017. Washington, DC: World Bank.

Global Outlook

Why a carbon tax can work well across the globe ….

- Low administrative costs
  - is easy to administer, can be added to existing fuel tax system
  - no need to measure actual emissions
  - sets a price on fossil carbon – national conditions determine choices made by households and firms.
- Taxation point can be chosen up-stream – few tax payers
- Start with low tax rates; step-by-step approach
- Revenues can be used to
  - enable options to fossil fuel use (e.g. public transport, substitutes to fossil heating, such as district heating or cooling systems using household waste as a resource)
  - address distributional consequences (e.g. poor households)

Easy to Administer

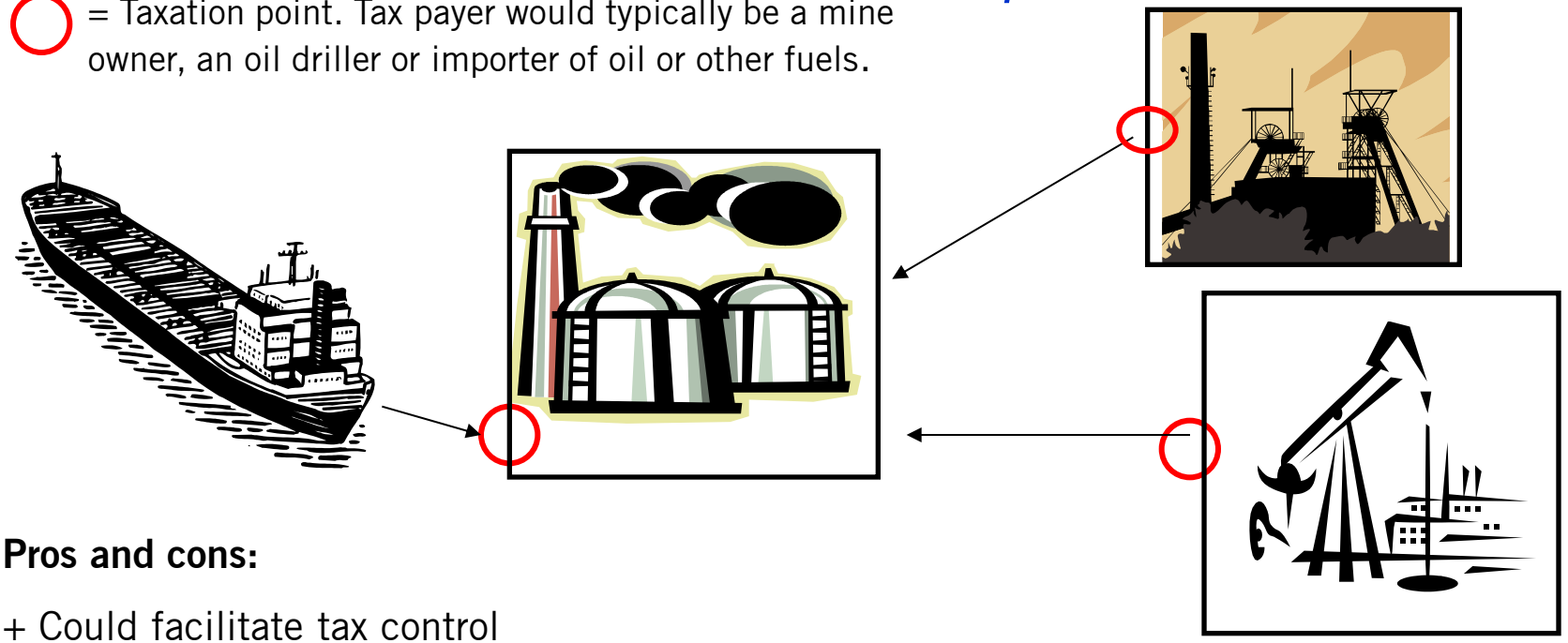
- In the tax law, carbon tax rates are expressed in normal trade units (**weight or volume**)
- Legislators use average **CO_2 emission factors** for different fuels to calculate tax rates
  - Internationally acknowledged emission factors
  - No need to measure at point of emissions to air
- Most countries already apply some kind of duties on fuels. A carbon tax can be paid by the same **tax payers** (e.g. distributors or large consumers, Sweden: pop. 10 million people, 300 tax payers for energy taxes)
- **Low administrative costs** for tax authorities and business
  - Administrative costs for Swedish Tax Administration is 0.1 % of total revenues for energy and carbon taxes.

Taxation Points for Taxes on Fossil Fuels

Extreme up-stream alternative[1]

General principle: Fuels taxed at the time of production (incl. extraction) or importation.

○ = Taxation point. Tax payer would typically be a mine owner, an oil driller or importer of oil or other fuels.



Pros and cons:

+ Could facilitate tax control

+ Less number of tax payers, easier tax administration

- Negative liquidity effects on business, due to that tax is to be paid before fuels are sold

- Difficult to differentiate tax between refined oil products

- Difficult to differentiate tax between areas of use

[1] For discussion; would not be possible in Sweden due to general EU provisions

Carbon Tax
1989 Report
1990 Gov. Bill

An Example

Sweden's 26 years of carbon taxation

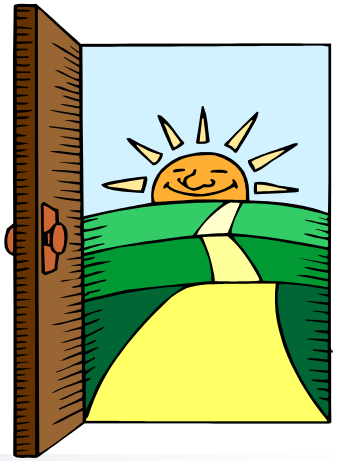
New national climate targets, decided by Parliament in 2017

- *By 2045* - no net emissions of greenhouse gases.
- *By 2030* - emissions from domestic transports (excl. aviation). reduced by 70 % compared to 2010

Reasons for Taxing Energy in Sweden

Increased focus on environmental taxes

- **Until 1980's**: Primarily fiscal purposes
  - generally low tax levels
- **1990's and onwards**: Environmental issues given high priority by Government and citizens
  - 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



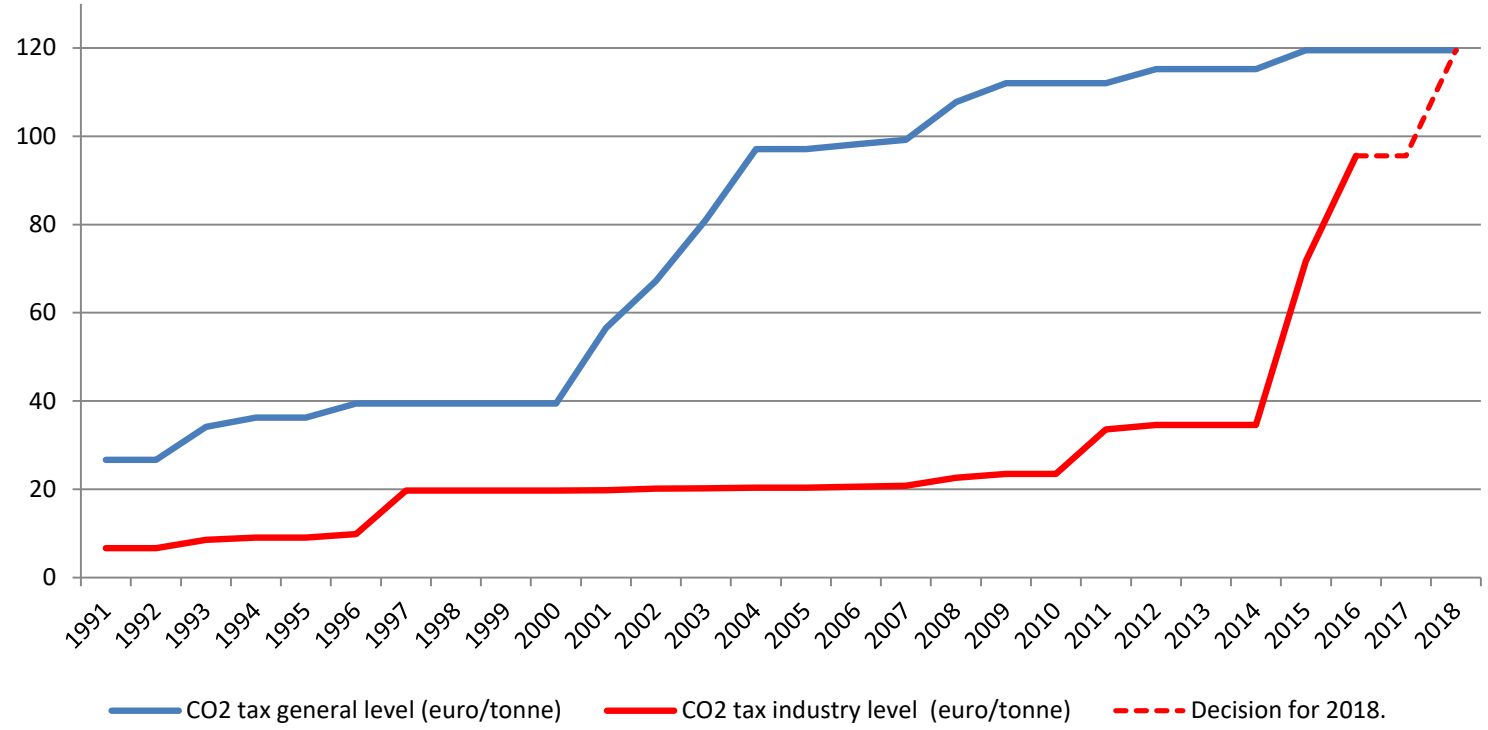
Swedish Carbon Pricing

- **Carbon tax on motor fuels and heating fuels**
  - Based on fossil carbon content of fuels.
  - *29 $ in 1991*; 132 $ in 2017; *135 $ in 2018*.
  - Introduced along with existing energy tax. Part of major general tax reform.
  - Two levels of carbon tax, per tonne fossil carbon, lower level for industry will be abolished in 2018.
- **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 industry covered by EU ETS**

Development of the Swedish Carbon Tax

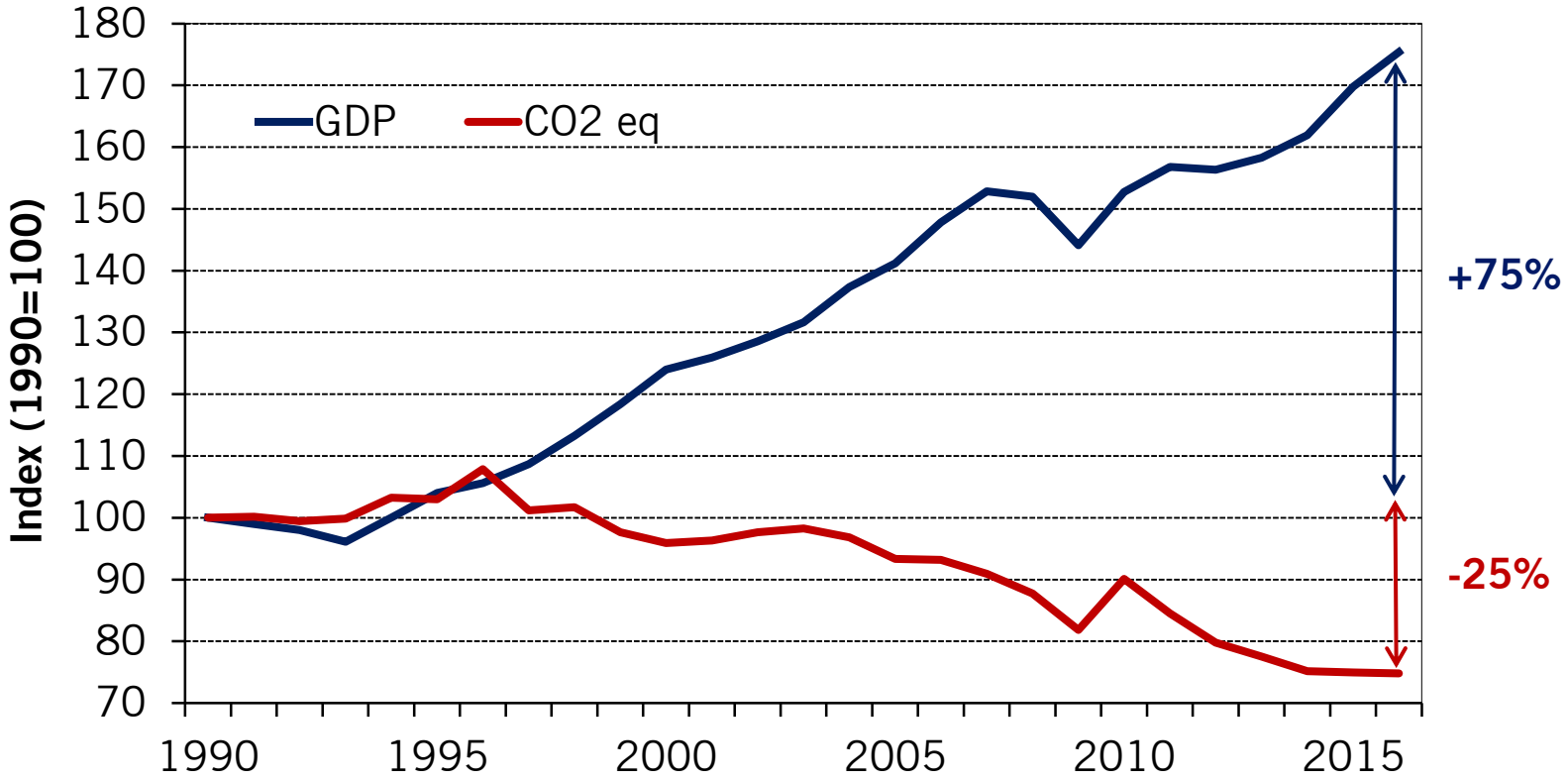
General level and industry level

Carbon tax levels
€ per tonne



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

Real GDP and Domestic CO_2eq Emissions[1] in Sweden, 1990–2016



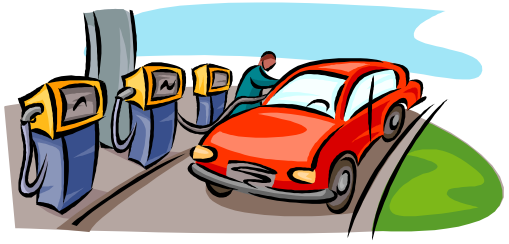
[1] In accordance with Sweden's National Inventory Report, submitted under the UNFCC and the Kyoto Protocol. CO_2 = approx. 80 % of total CO_2eq emissions. Preliminary data for 2016.

Sources: Swedish Environmental Protection Agency, Statistics Sweden

Distributional Effects

Households

- **Heating fuels:** Fossil heating fuels has 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 scrap; 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
  - Redesigning carbon tax on gasoline and diesel (*see my presentation in Parallel Session 3 tomorrow*)
- **General welfare state**
  - Social transfers
  - Increased basic income tax reductions for low and middle income households.



Distributional Effects

Business

- **Industry within EU Emission Trading Scheme (ETS):** Generally energy intensive.
  - No carbon tax from 2011, lower energy tax.
  - Proposal to reintroduce carbon tax for heat production in combined heat and power plants covered by the EU ETS on January 1, 2018 at a rate of 11 % of the general level.
- **Industry outside EU ETS:** Generally less energy intensive.
  - Step-wise increase to general tax level 2011–2018.
  - In general low costs for energy and high costs for labor and capital.
- Large shares of the Swedish industry's use of energy consist of **bio fuels** (36 %, mainly paper and pulp) and **electricity** (32 %) in 2014.
  - No tax on solid bio fuels and residues ; low energy tax on electricity for industry.
  - Steady decline in specific energy use (amount of energy used per monetary unit of value added).
- **District heating** provides 80 % of **space heating for service sector** (offices, shops etc.)

What Does the Public Think?

- **What make households and firms adapt?**

  Swedes do not love to pay tax, but ……

  – General environmental concerns, both from households and firms

  – Ensure that feasible options are available (bio fuels, district heating, public transport, housing insulation etc.)

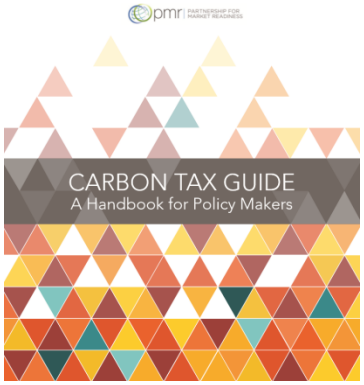
  – "Polluter Pays" = "Money Talks"

  – 26 years of carbon taxation show good environmental effects = pollution from fossil fuels is not essential to economic success.

  ….. *the carbon tax is generally accepted.*

The Road Forward ……

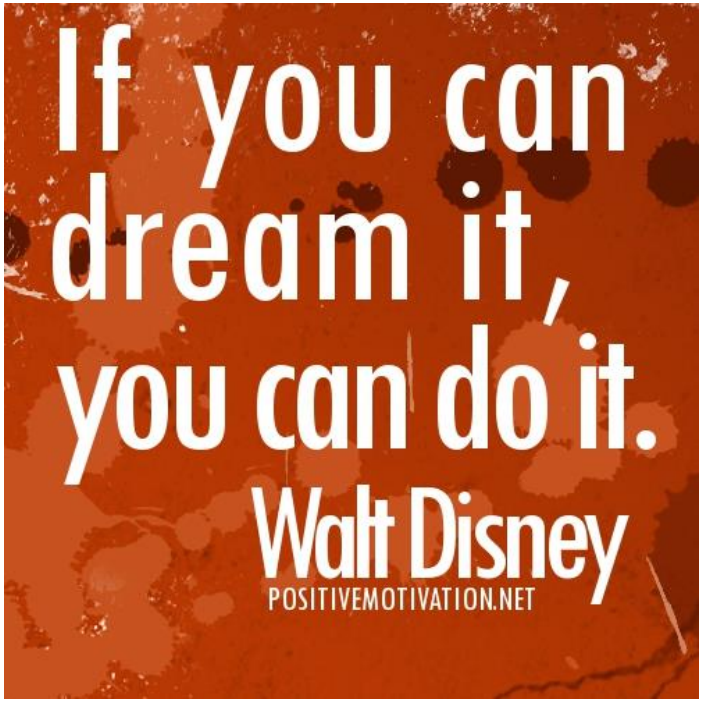
- **…. yes, a carbon tax is a good idea!**
  - reduced emissions can be combined with long-term economic development and prosperity
  - low administrative costs; emission trading schemes more complicated and costly
  - raises revenues, which can be used to make options available
  - step-by-step approach give time for households and firms to adapt
  - involve stake holders and academia in discussions; cooperation within Government offices
  - Sweden and others can share experiences, but exact design needs to take account of national conditions



How to Make it Happen .....

- **We know how to price carbon by a carbon tax**
  - Economic theory is solid
  - More and more countries can share experiences. See e.g. *"Partnership for Market Readiness. 2017. Carbon Tax Guide : A Handbook for Policy Makers. World Bank, Washington, DC.* https://openknowledge.worldbank.org/handle/10986/26300
  - Ongoing discussions in OECD, Carbon Pricing Leadership Coalition (CPLC), COP conferences, UN Tax Committee, IMF, World Bank, GCET etc etc
- **Political courage is needed** .... not easy but necessary
- **Cooperation between Governments, academia and stakeholders**
  - research on policy experience, economical effects on society – as a whole, different groups
  - step-by-step solutions, time limited aid programmes, technical research etc
  - hands-on, practical solutions


The Economist
Yesterday's fuel
Why demand for oil will fall


If you can dream it, you can do it.
Walt Disney
POSITIVEMOTIVATION.NET

Thank you for your attention!

Questions?