

# Sweden – on the track to no net emissions

## Division for Climate

Director  
Jon Kahn

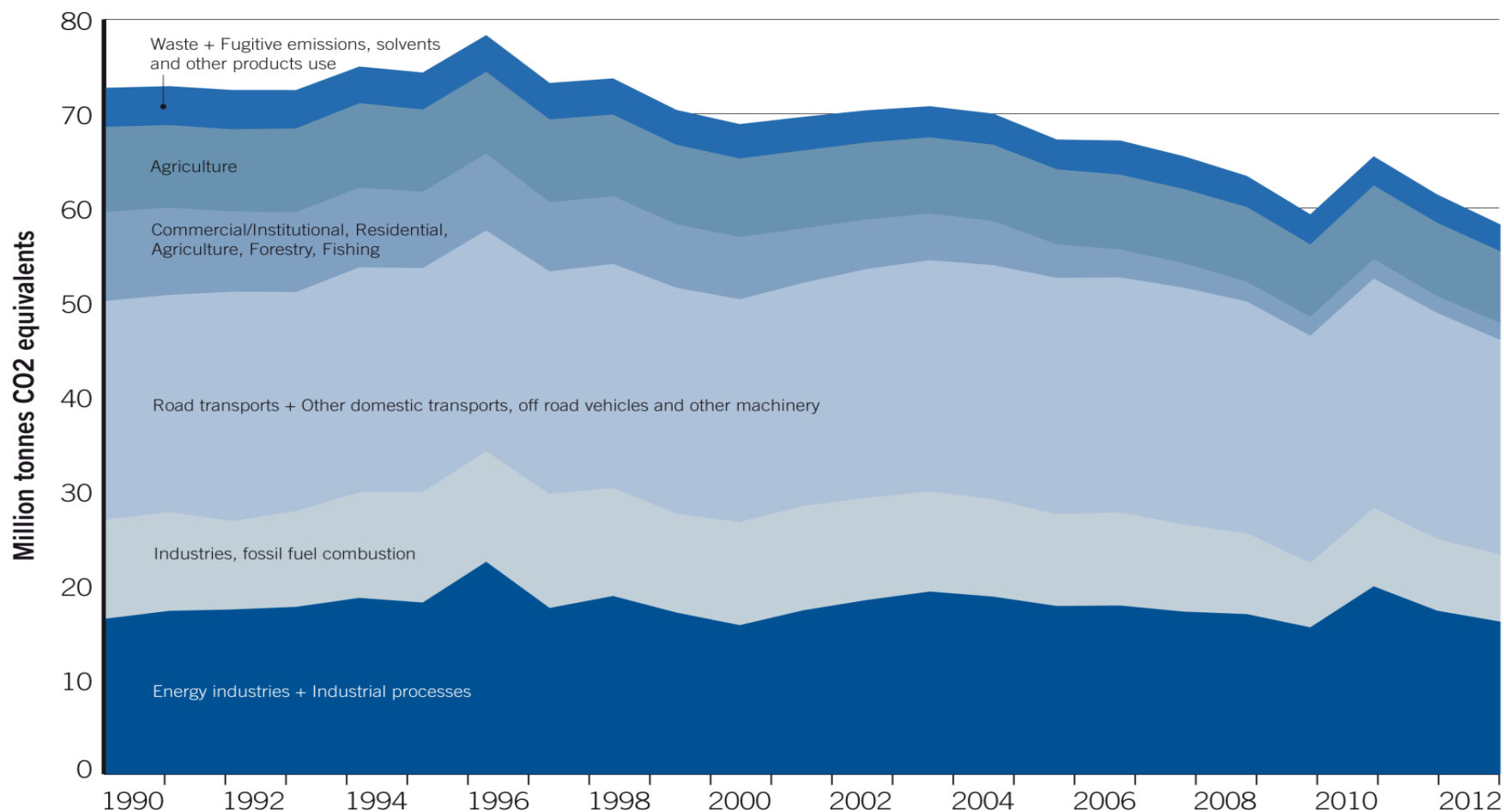
# This is Sweden

- **Cold climate, long distances, energy intensive industry, old vehicles**
- **GDP has been growing while carbon emissions have decreased**

# This is Sweden

- **Early introduction of carbon tax**
- **Almost no fossil fuels in electricity generation**
  - Hydro, Nuclear. CHP
- **Rapidly falling average emissions from cars**
- **Rapidly growing electricity generation from wind**
- **Relatively large share of emissions from industrial processes**
- **District heating dominates and is mainly fossil free**

# Swedish emissions of GHG decreased 20 percent since 1990 (preliminary data for 2012)



# Swedish domestic climate/energy objectives

## - defines domestic climate policy

### Domestic objectives:

- 40% reduction of GHG emissions by 2020 (non ETS)
- 50% renewable energy, 20% higher energy efficiency
- no fossil fuels for heating by 2020

### Priority:

- Vehicle fleet independent of fossil fuels 2030

### Vision:

- By 2050 sustainable and resource efficient energy supply and no net emissions of greenhouse gases.

# Main drivers for cuts in GHG since 1990

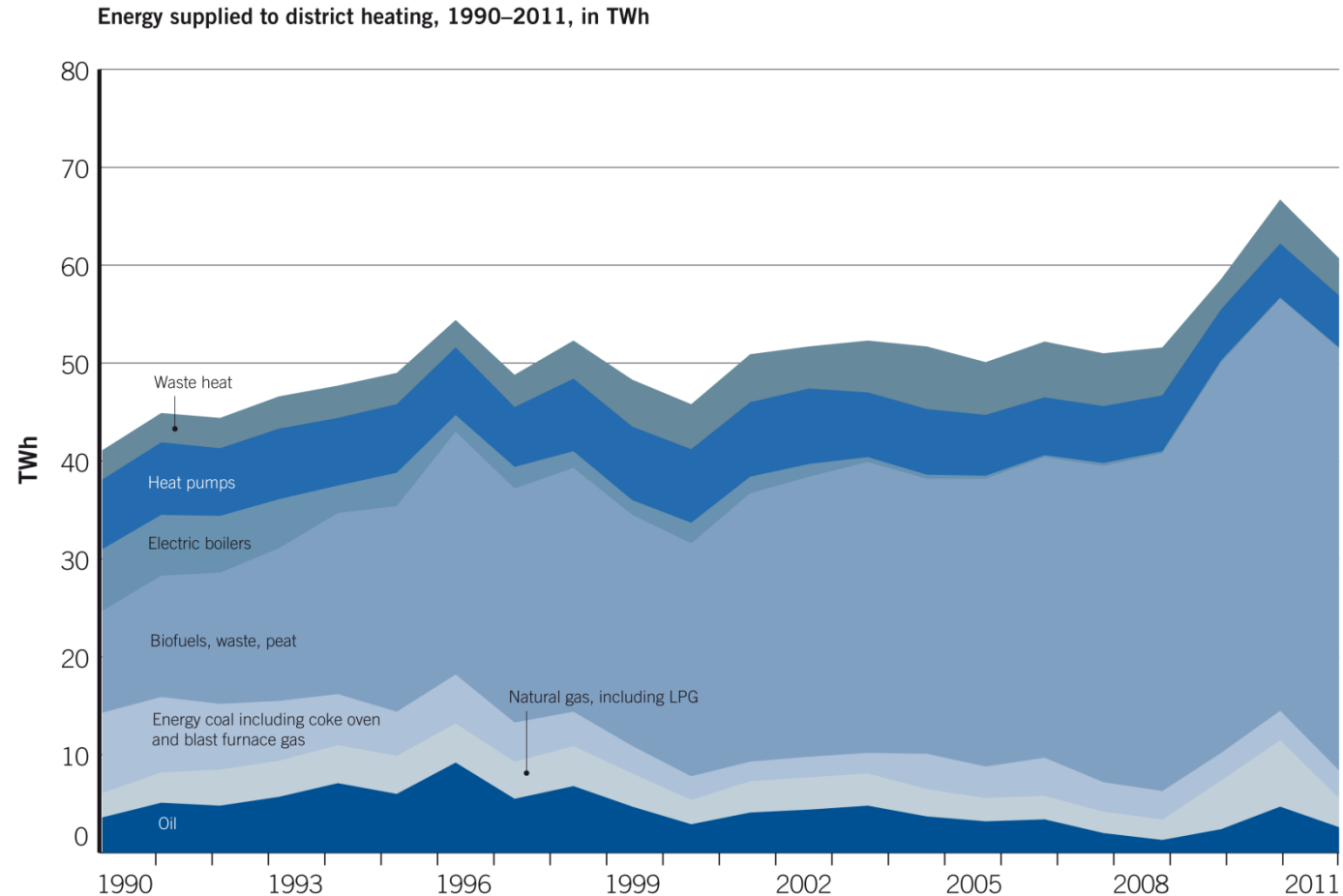
## At EU level

- Emissions trading scheme - covers 40% of Swedish emissions (energy production, heavy industries)
- Vehicles regulations (cars, light vehicles etc)

## At national level

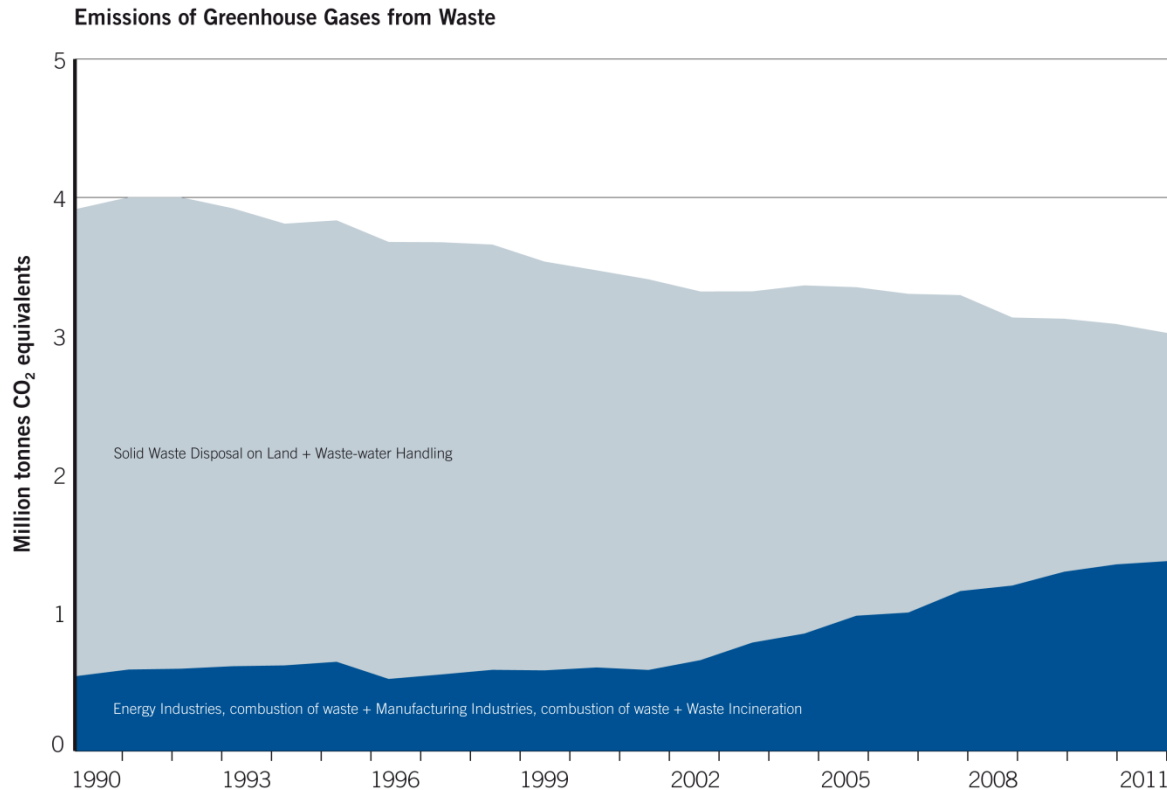
- CO2 tax (on non ETS CO2 emissions)
- Green certificates for electricity production from renewables – minimum quotas
- Several incentives for greener cars
- Waste regulations (methane)
- Restructuring of industry production and agriculture

# From fossil to low-carbon in district heating



**In the 1970's the share of fossil fuels in our total energy consumption was over 80 percent. Today that share is less than 35 percent while half of Sweden's energy comes from renewable energy sources.**

# Rapid cuts in greenhouse gas emissions from waste

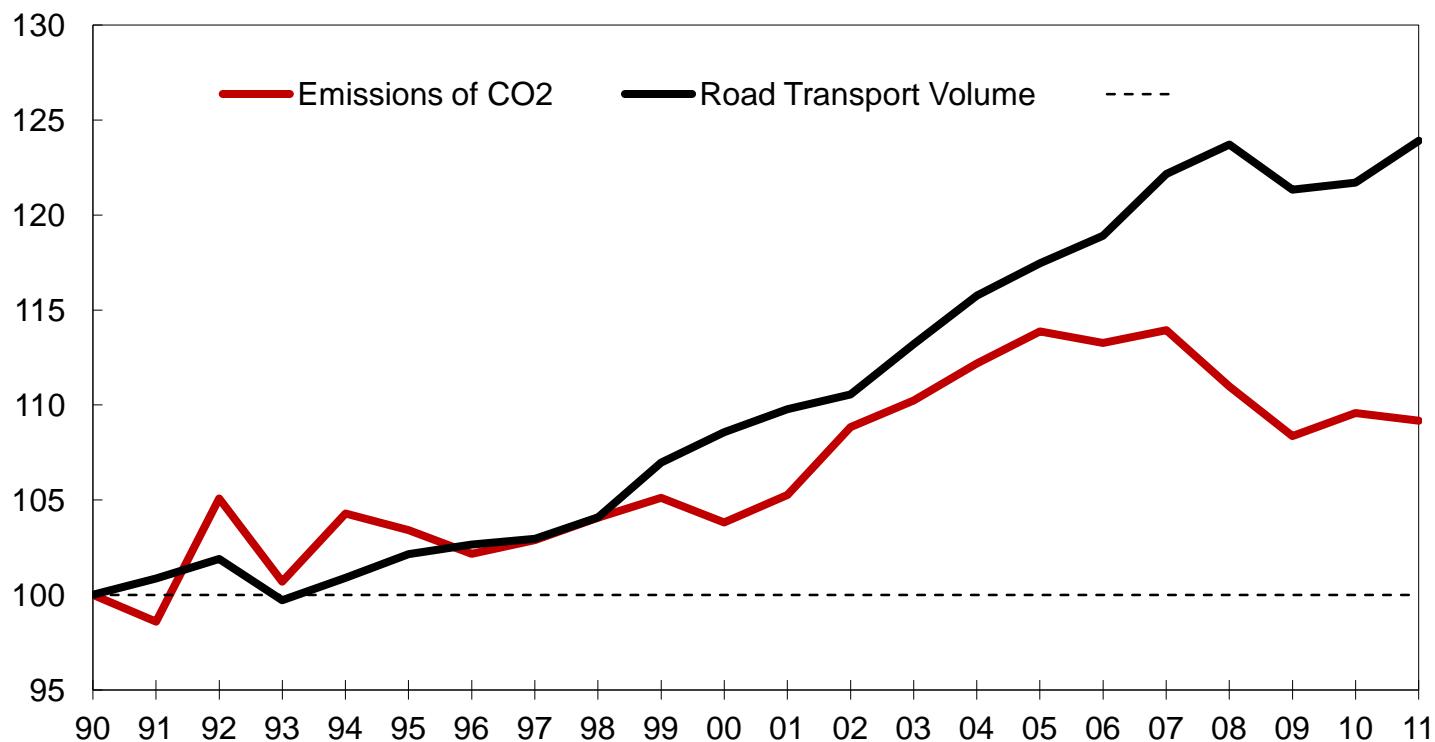


**Emissions from the waste sector have decreased by 23 percent 1990-2011.**

**The quantity of waste sent to landfill has decreased principally as a result of the ban on landfilling, combustible and organic material introduced in 2002 and 2005. Producer responsibility, municipal waste plans and waste tax have also minimized the quantity of waste.**



# Transport – steady emission increase reverted



Road Transport Volumes and Emissions of CO2 from Road Transport 1990-2011. Index: 1990=100.

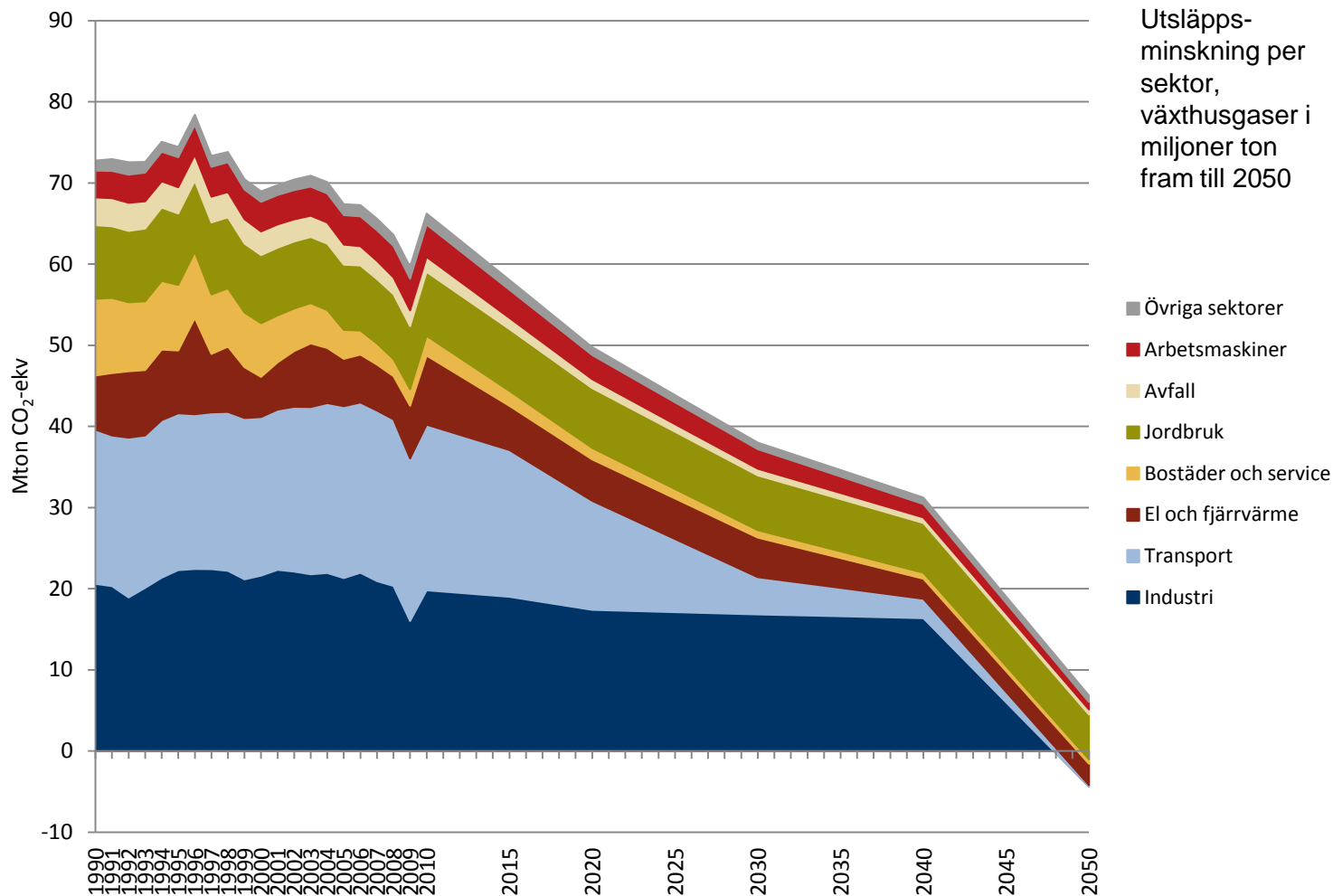


SVERIGE  
UTAN KLIMAT-  
UTSLÄPP  
2050

# No net emissions 2050

**We are working on making this vision a more concrete target that many in society work together to fulfill...**

# Roqad map2050: EPA scenario to reach no net emissions



# Roads to success 1

- **Innovative solutions for heavy industry**
- **Action in all fields**
- **Economic instruments – ETS needs to be successful**
- **Planning is important and to keep up with fossile independent vehicle fleet**
- **Realize that the possibility for market mechanisms and carbon sink will change over time**

# Roads to success 2

- **See the advantages for economy**
- **Look at effects also for health and biodiversity**
- **See possibilities – plastics as example**
- **Everybody should take part**
  - counties and municipalities
  - road maps for branches of industry