

Regional Carbon Budgets

Rapid Pathways to Decarbonized Futures

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web: www.cemus.uu.se

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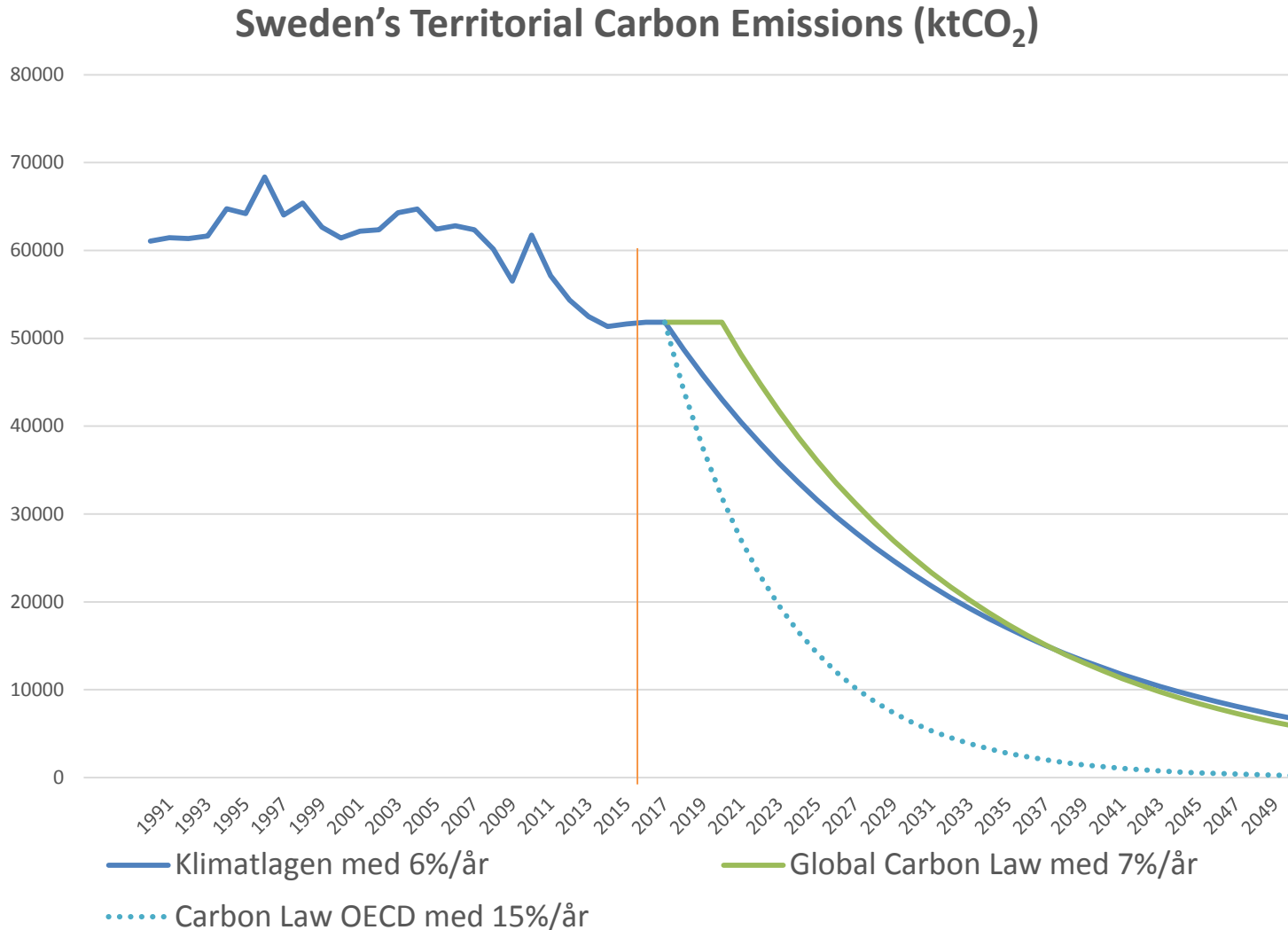
A commissioned report for Järfälla Municipality

- A Regional Carbon Budget for Järfälla
- Annual emissions reductions required
- Illustrative examples of pathways to a fossil-free future, in line with Paris Commitments



The report can be downloaded at: www.cemus.uu.se

Climate Change Leadership in Sweden?



Sweden's Climate Law

- No CO₂ budget or annual emissions reductions in current form
- Does not include international transport emissions
- Includes other GHGs

A 'Carbon Law' for OECD?

CEMUS' Analysis:

- 1) Does not rely on highly speculative **Negative Emission Technologies – NETs**.
 - 2) Takes some account of **equity** – a slightly delayed timeframe for poorer nations and emissions from **cement & deforestation** not just their resp.
- 10-15% annual emissions reductions → ½ of emissions ~ every 5 years.

Negative Emissions Technologies (NETs)



NATURAL uptake $\sim 20\text{GtCO}_2/\text{year}$
.~1/2 of what we emit

+



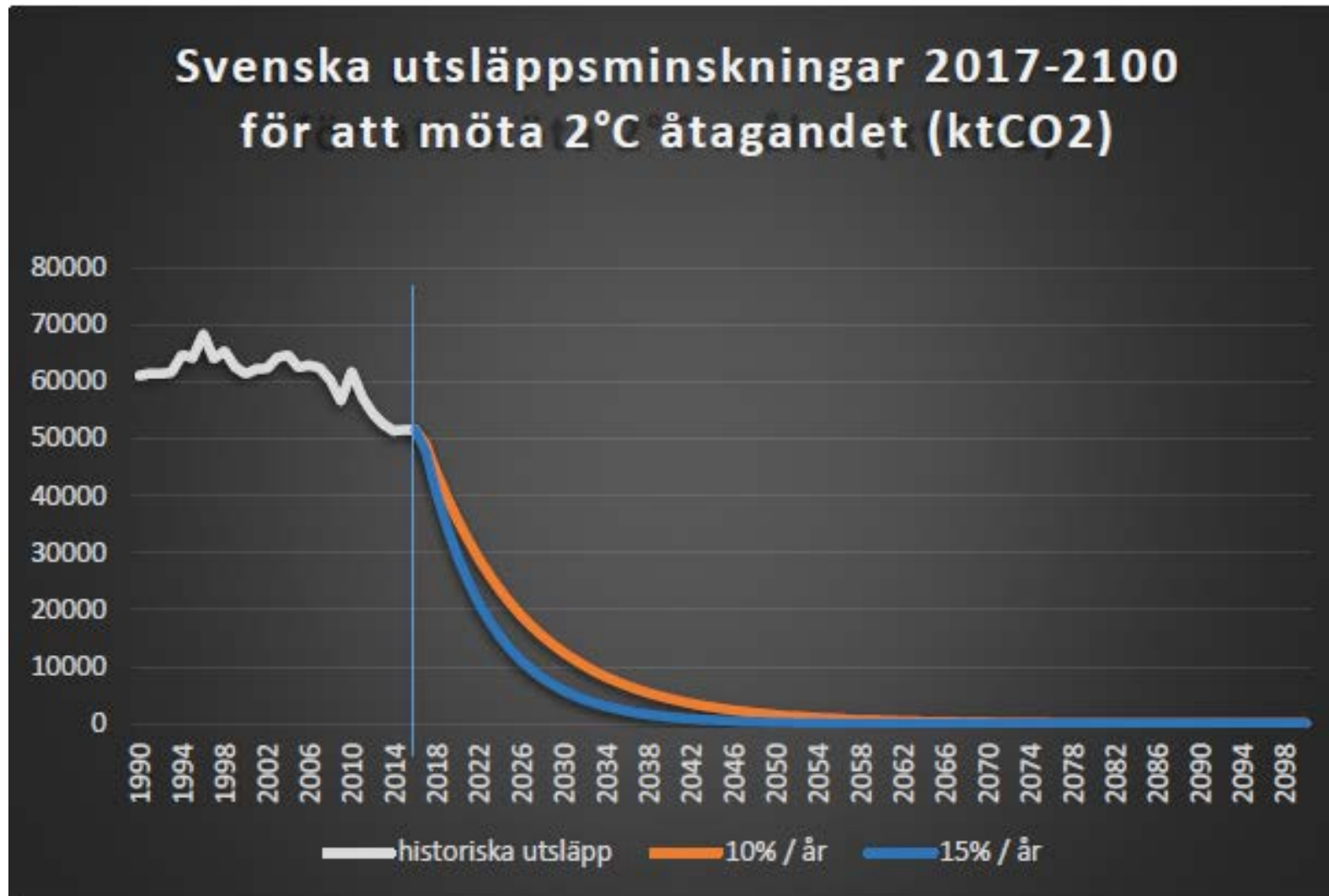
Assumed that NETs will suck up $10\text{-}20\text{GtCO}_2/\text{year}$
i.e. equivalent of up to another biosphere!

In Short...

- **A Swedish Carbon budget in line with Paris (CEMUS' Carbon Law OECD):**
Very challenging emissions reductions for this generation
- **Sweden's Climate Law (in its current form):** Not equitable and very large risks are left for future generations

Which one would our children and grandchildren choose?

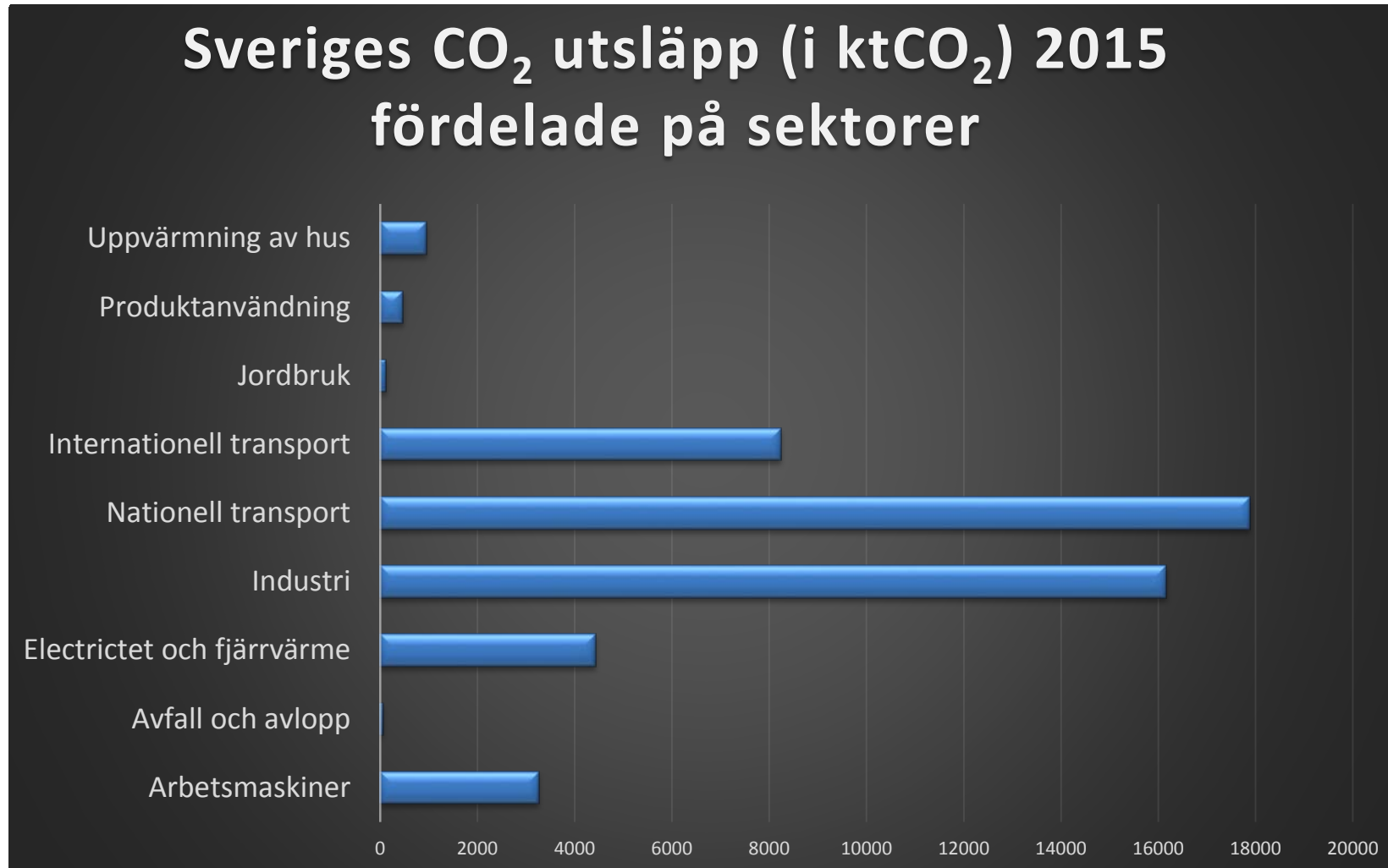
Carbon budget and emissions for Sweden



CO₂-Budget:
~ 300 to 600 MtCO₂

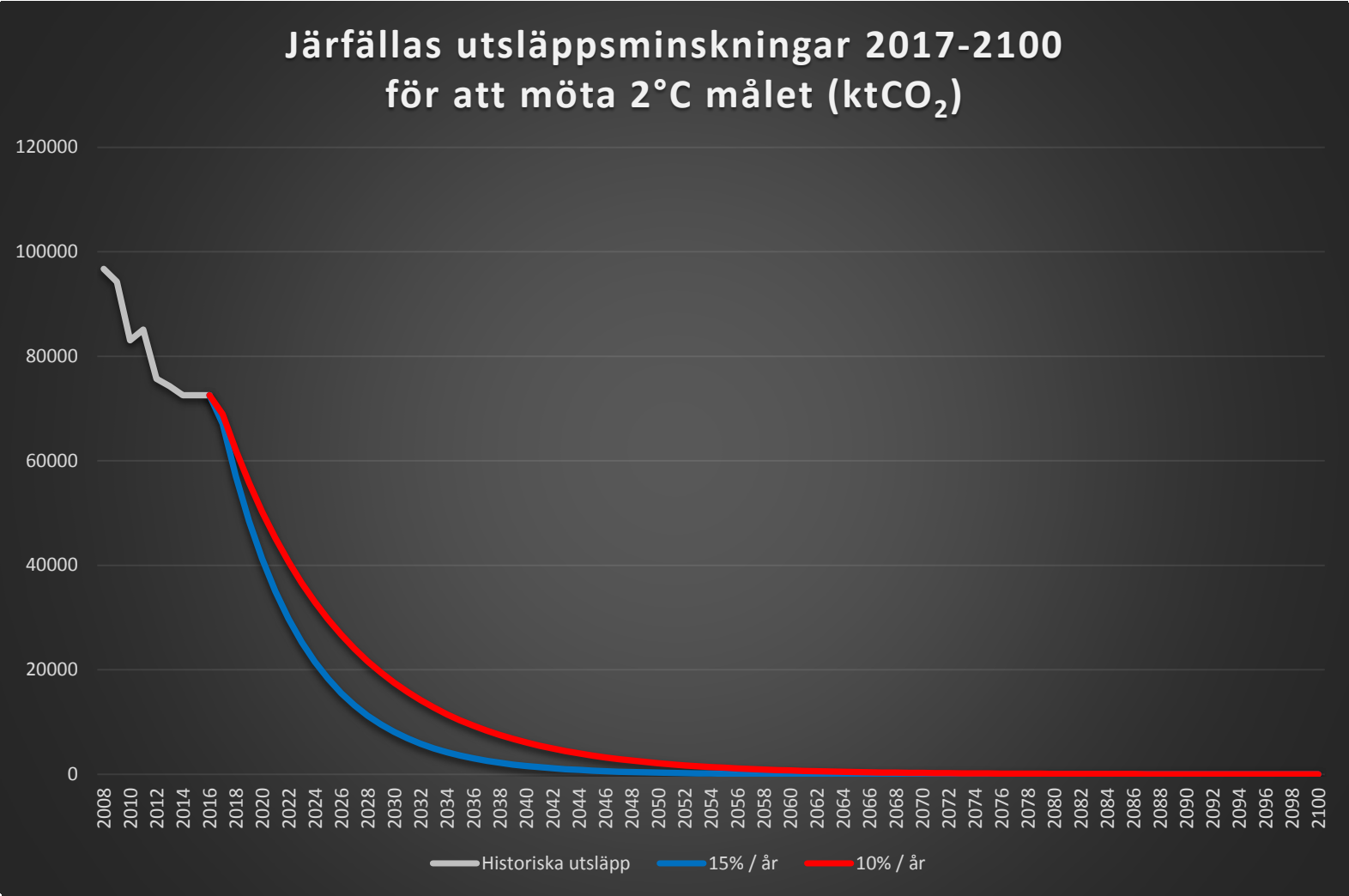
Ref: Historical emissions from miljöräkenskaperna (SCB).

Sweden's territorial emissions per sector



Ref: Naturvårdsverket (calculated by SMED)

Carbon budget and emissions for Järfälla Municipality

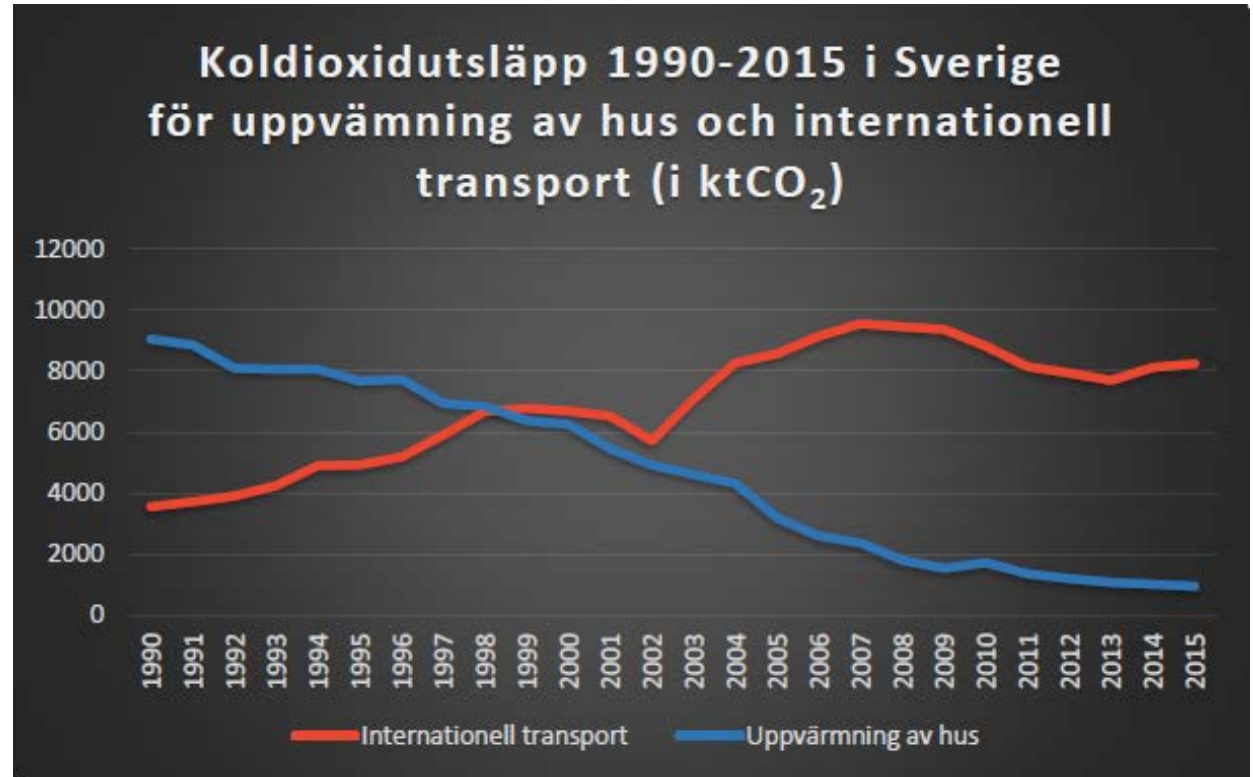


CO₂-Budget:
~ 423 to 900 ktCO₂

Ref: Historical emissions from emmissionsdatabasen (RUS).

Pathways to fossil free futures

1. Energy Demand
2. Energy Supply
3. Other policy measures



Ref: Naturvårdsverket (calculated by SMED)

Järfälla Municipality Energy and Climate Strategy 2017

*Järfälla kan visa vägen och möjliggöra för andra regioner eller kommuner i både Sverige och andra länder att tidigarelägga och påskynda en snabb omställning till en fossilfri och hållbar framtid. För detta krävs konkreta åtgärder inom kommunens egen verksamhet och inom kommunens gränser. Miljöplanen presenterar olika förslag till åtgärder. **I den kommande energi- och klimatplanen bör Järfälla konkretisera vilka åtgärder som ska prioriteras för att minska utsläppen med 10-15 procent per år, så att kommunen kan bidra med sin del, så att två graders-målet kan nås.***

(from Järfälla municipal board minutes 2017-08-16)

Main Results

- With current CO₂ emissions Paris 2°C will be surpassed ~17 years
- Sweden and Järfälla need ~15% CO₂ reductions p.a. for a fair chance of 2°C
- ... and support poorer countries in their development towards fossil free societies.
- Järfälla and Sweden can – and should - lead the rapid transition to a fossil free future.



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Regions as catalysts for rapid decarbonisation?

A growing amount of municipalities, countries and multi-state organisations are calculating CO2-budgets.

- Can regional policies, frameworks and strategies catalyse more ambitious national counterparts?
- How to engage citizens, organisations and businesses in the transition and also take consumption-based emissions into account?
- Mechanisms to support poorer countries and regions to develop fossil free societies?



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Tack för uppmärksamheten!

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