

Pellet market driven by carbon pricing

- Our Swedish choice

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Speaker:

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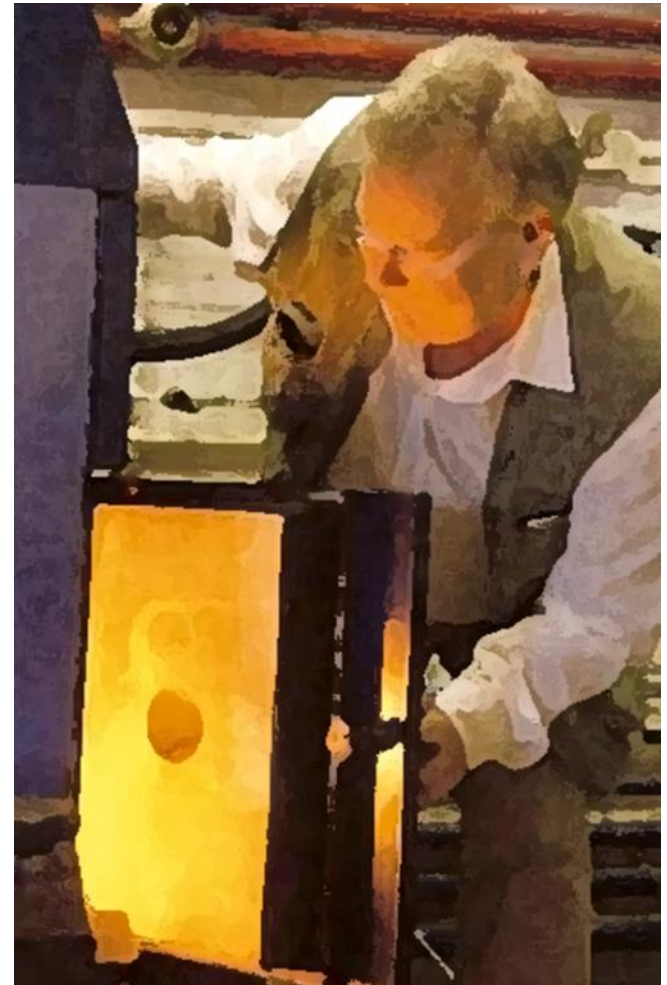
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Let me first briefly introduce Sweden....



- Our population has just passed 10.0 million....
- About 85% of the population live in urban areas...
- GDP per capita* is about \$46 702 (OECD \$40 084)
- We have no oil, gas, or coal resources of our own.....
- ..and we are at the forefront of environmental thinking....

* source: OECD (2016)



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Why a carbon tax - back in 1990?

Seen through my Swedish eyes

- Higher oil prices have hardly hit our economy
- Timing with an “wake-up time era” in environmental questions
- Politicians in agreement that something has to be done
- Insight about the need of a future safe and local energy source
- Increased price of fossil energy will benefit local economy





Lots of criticism and fear!
-we will be thrown back to the 1800s

My first Conclusion

**Brave politicians
& wise consumers**

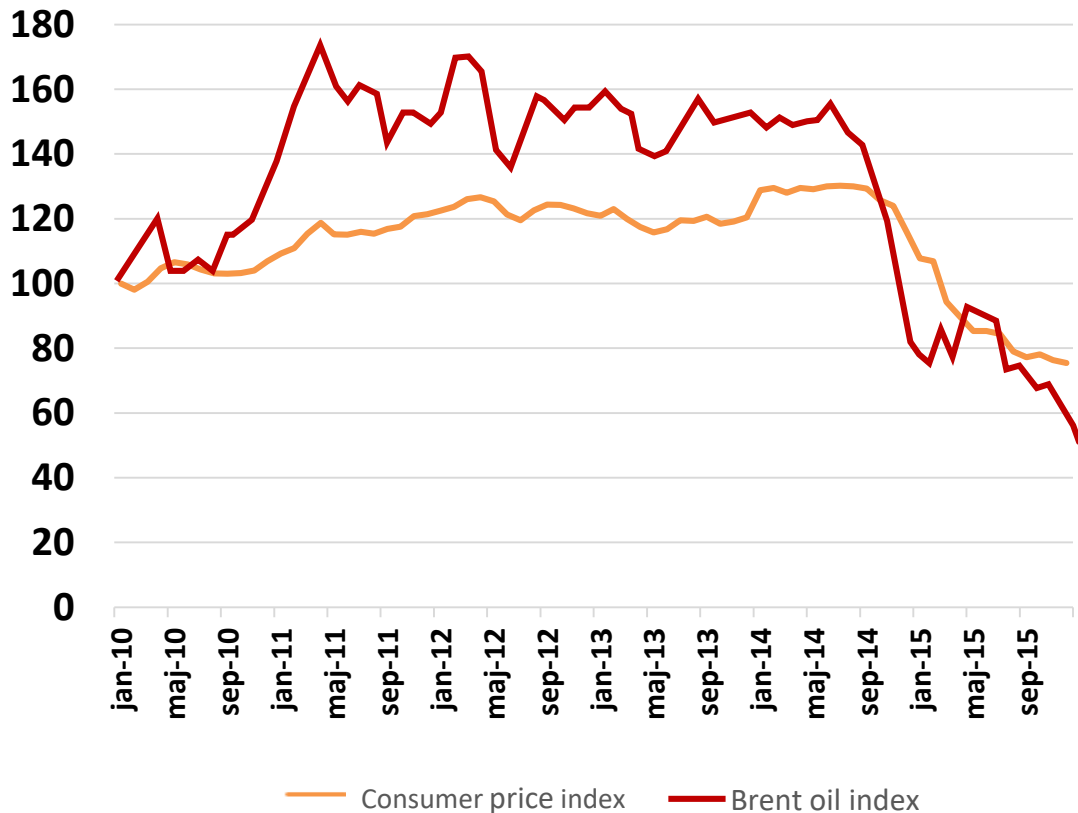


**Lack of understanding is
our greatest enemy**

High taxation will contribute to more stable oil prices...

Oilprice index

Consumer price SE and Brent price



- Taxes on fossil energy gives **cash flow in to the government** and stimulates the **development of all alternatives**
- **High total tax** on all fossil energy
 - Oil $\text{€}85 + \text{€}320 = \text{€}405$ per m^3
 - Natural gas $\text{€}90 + \text{€}240 = \text{€}330$ per 1000 kg
- Only carbon tax is **€115/ton CO₂**
 - 4 times higher than in any other country.
 - 25 times higher than the price of emissions in cap and trade.
- We have already tested the **carbon tax in full scale.**
 - Our economy has not collapsed
 - Jobs have not moved abroad.

Our carbon tax has boost all kind of renewables...

Our roadmap is simple and easy to understand



Replace fossil energy
with renewables
55,000 employees

Cut the losses – save energy
13,000 employees



Maximum RECYCLING
18,600 employees



Always focus upon *sustainable resources*
that are not "running out"

Streamline and
reduce energy demand

Avoid energy needs
Save energy

Use
renewables



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Not only woodpellets!

- We look upon all types of waste as a resource!



Branches and tops are an excellent fuel for heat and power.....

It's not at my topic today but...

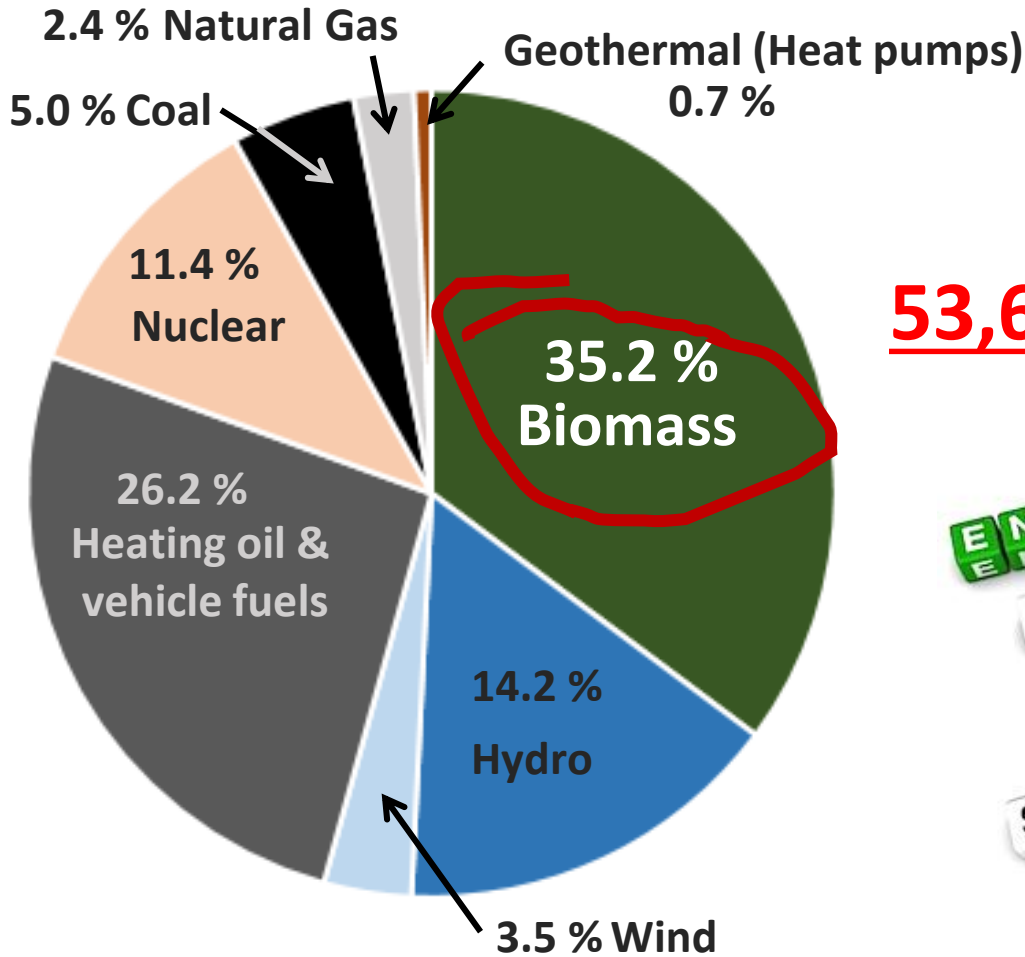
Responsible forestry is increasing the growth...

- A well-managed forest is growing faster and binds more carbon dioxide as an old forest
- As long as the harvesting of biomass is lower than the growth of the forest is bioenergy almost carbon neutral
- Caring with thinning and harvesting at the right time increases the profitability of forest owners
- Byproducts provide extra income as bioenergy



Final Use of Energy 2015 (in Sweden)

By Type of Energy Source



53,6 % RENEWABLE



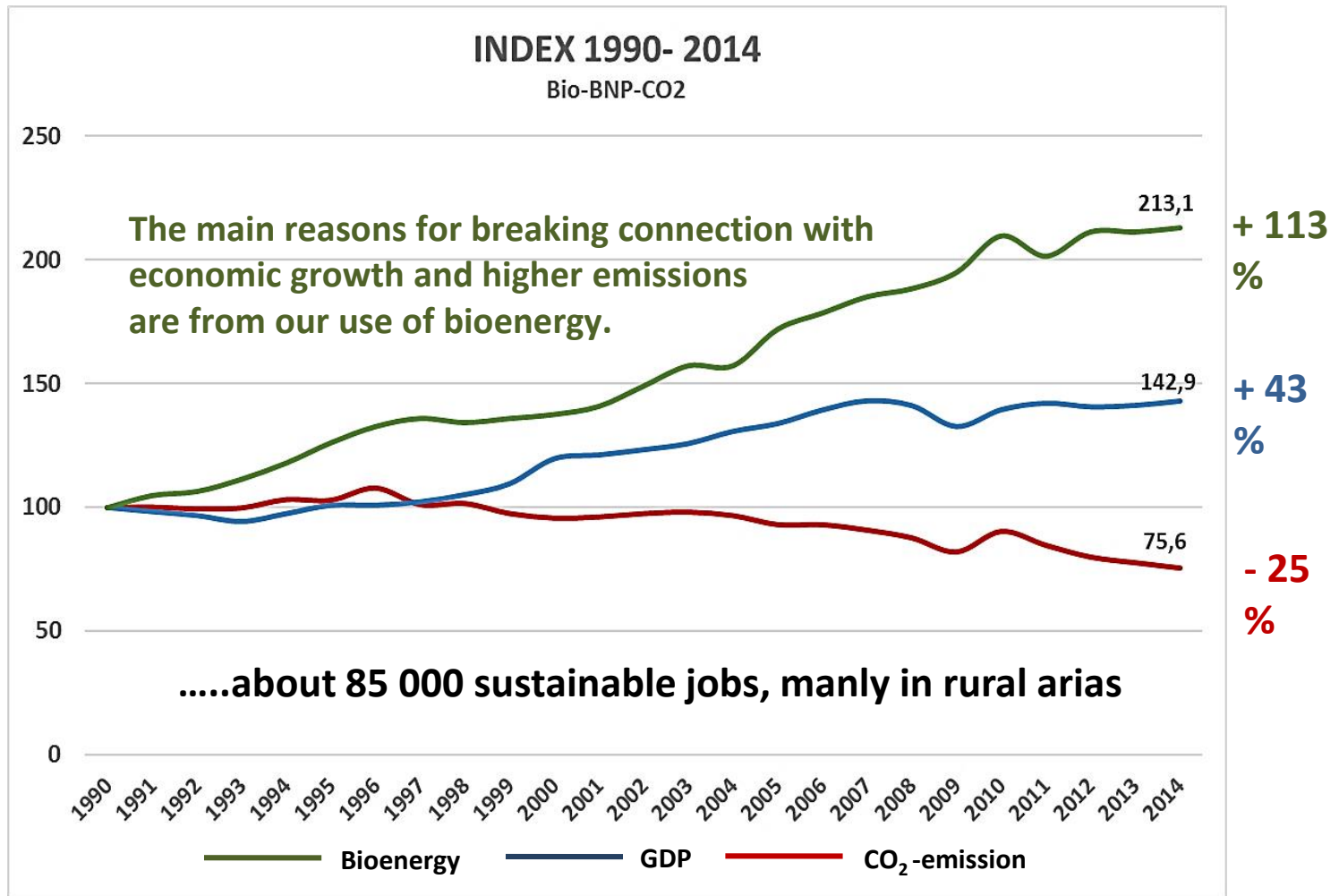


**So what have we in Sweden been
forced to sacrifice...**

Starvation and misery?



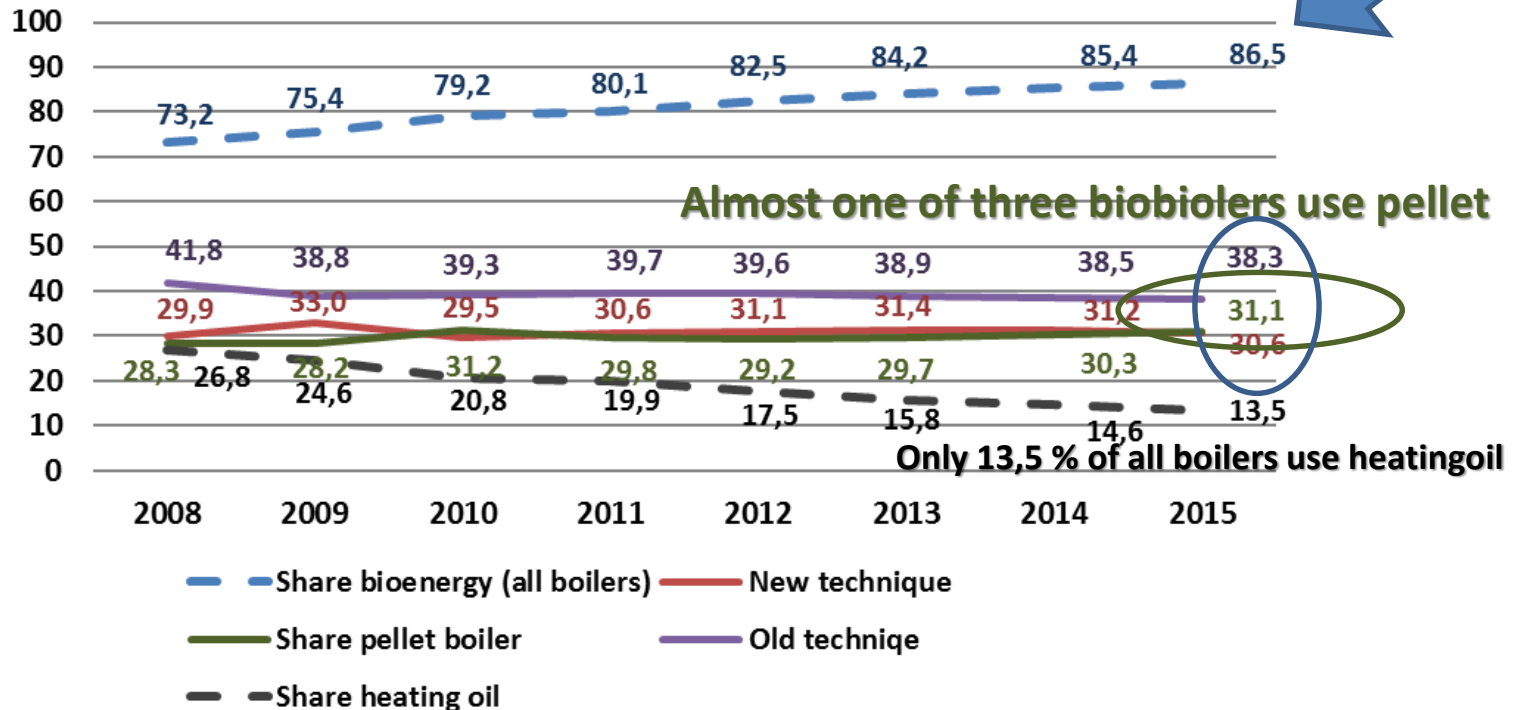
Swedish GDP increased while CO₂ emissions went down



86,5 % of all boilers in private homes are fired with biomass...

Broken down by technology (%)

Boilers in small houses



Final conclusions

High carbon pricing are better than grants

- **Our experience can be implemented in all countries**
- Active forestry management boosts forest growth
- Increased profitability for the forest industry
- Create sustainable jobs in rural areas
- Reduces the cost of heating
- More money stays in the local economy
- Reduces greenhouse gas emissions



Everything can not be solved with electricity from wind and sun.....



I would like to end up my presentation with a quote that feels just as relevant today - when we talk about pellet and renewable energy - as it was in back in 1969 - when Neil Armstrong called Houston and said.....

It's only one small step for a man,
but a giant leap for the mankind...

Thank you for listening!

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