

# Towards Sustainable Travel in Stockholm's Public Transport



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# Oil dependency and CO<sub>2</sub> cause

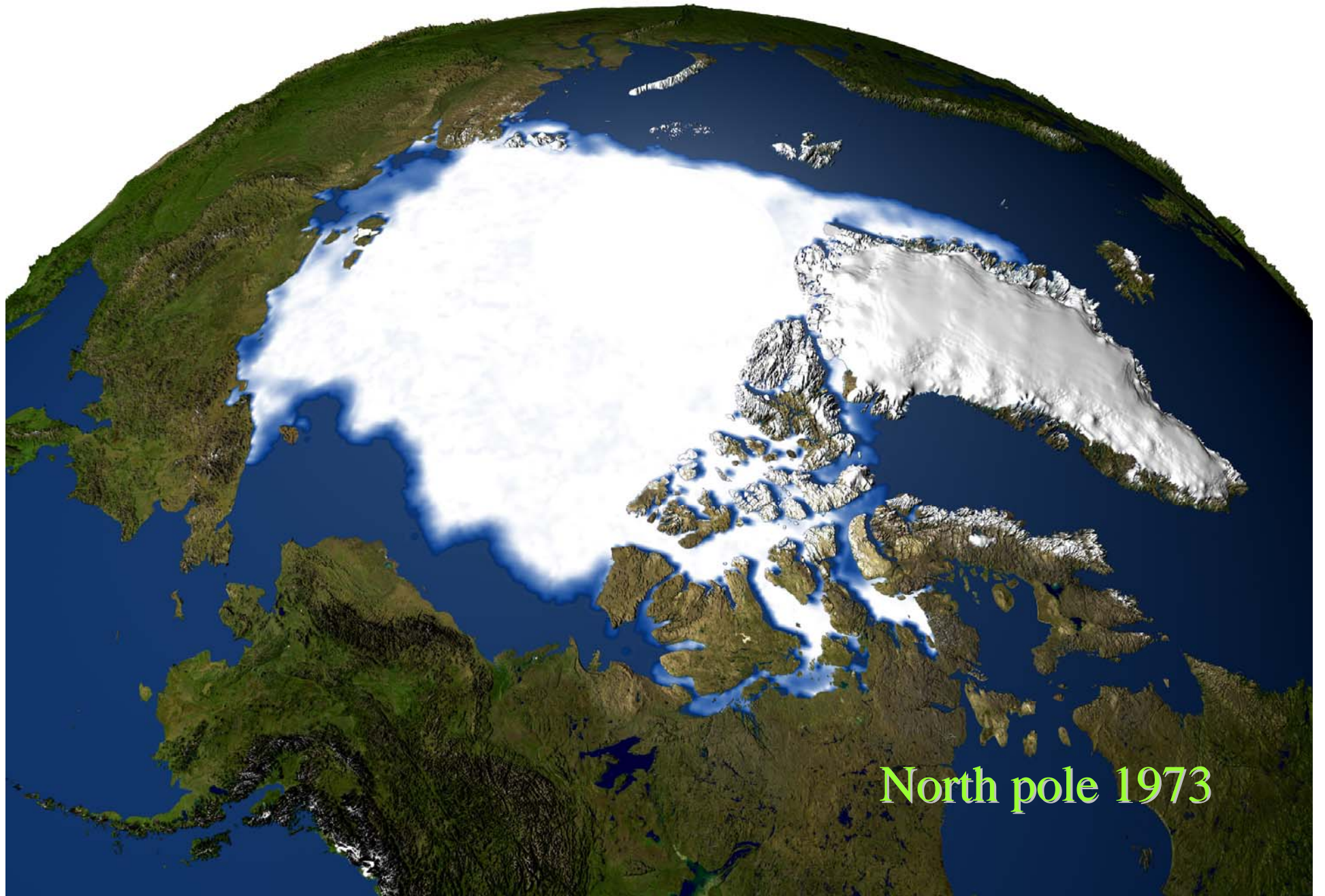
- Environmental problems!
- Security/supply problems!
- Financial problems!



*Flooding, Assam, India, July 2004*

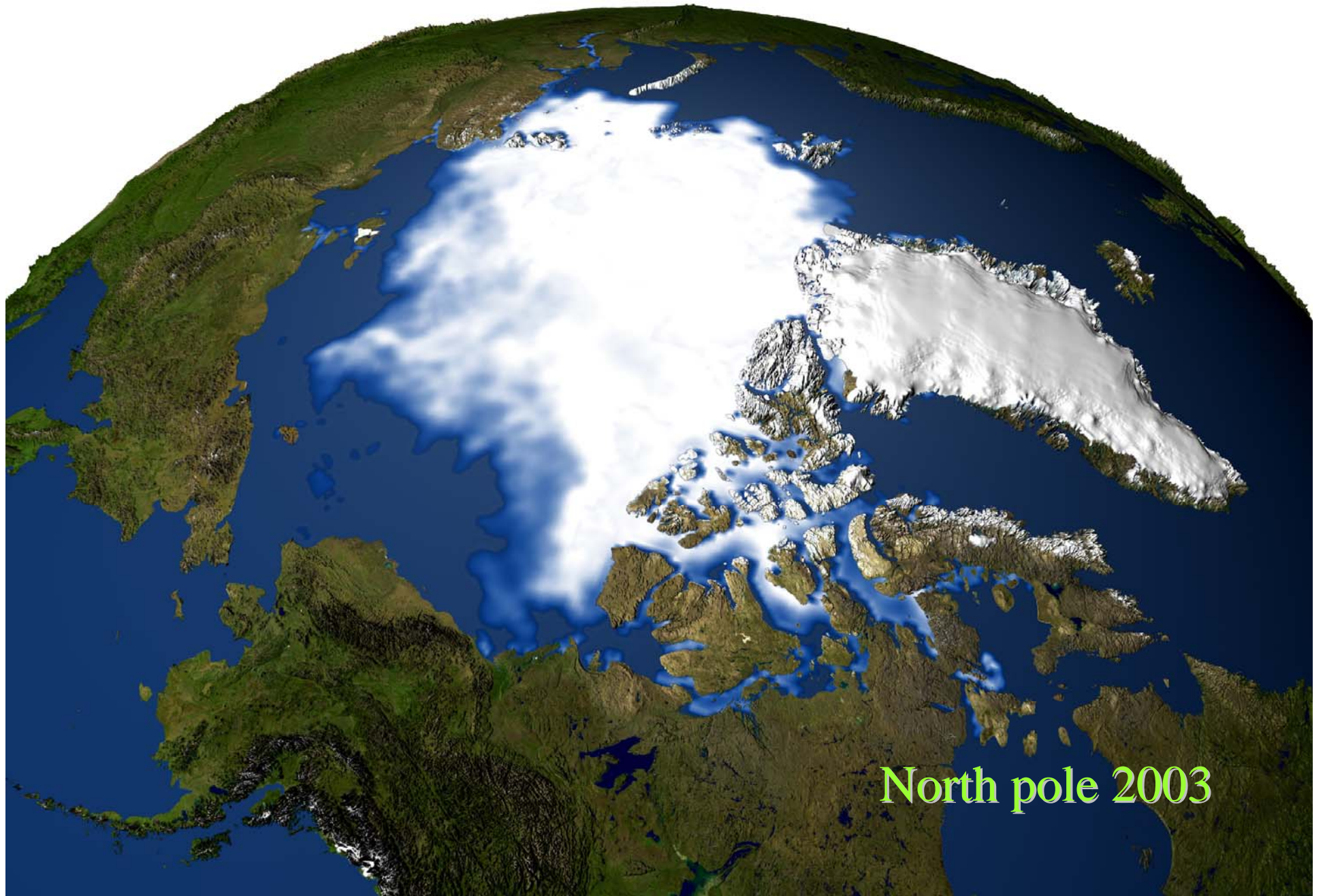






North pole 1973





North pole 2003

# Renewable Fuels... ...but which one?





## How to get there - Sustainability Philosophy



- 1.** Apply today's environmentally friendly standard solutions on a large scale! (Ethanol and biogas, etc.)
- 2.** Support what you believe to be future solutions for a sustainable transport system! (Fuel Cells, Intermodality, etc)



**Battery Bus 1984**



**Electric Hybrid 1996-00**



**Flywheel 1984**



**Multiflex 1993**



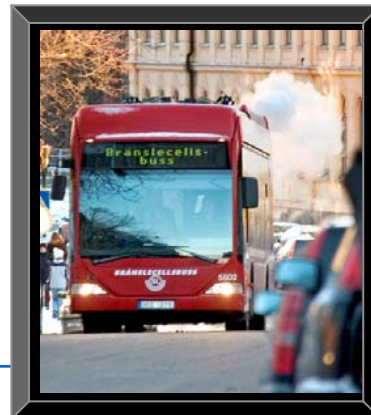
**Gas 1984**



**Biogas 2003-**



**Accumulator 1989**

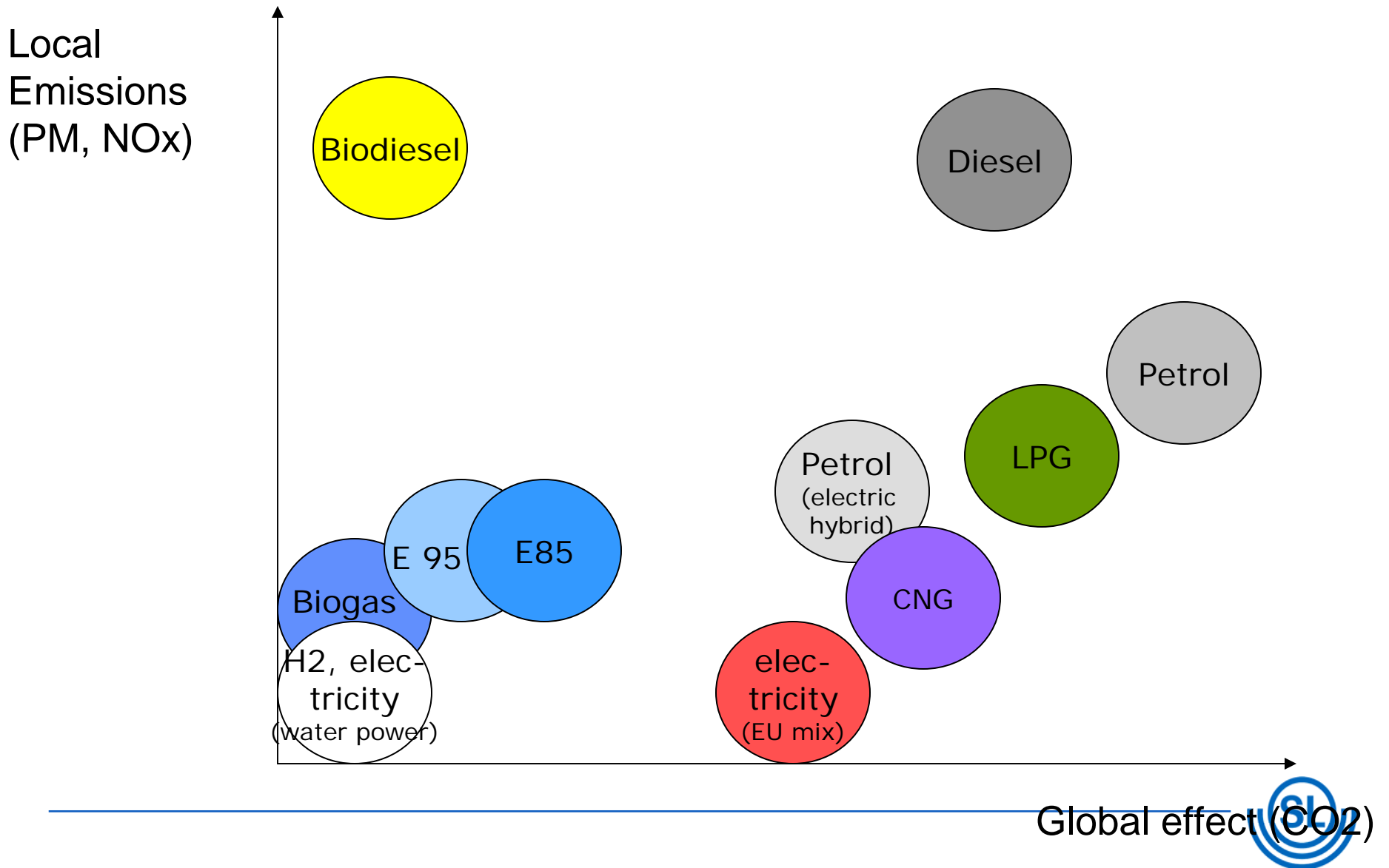


**Fuel Cell 2004-**



**Ethanol, 1990-**

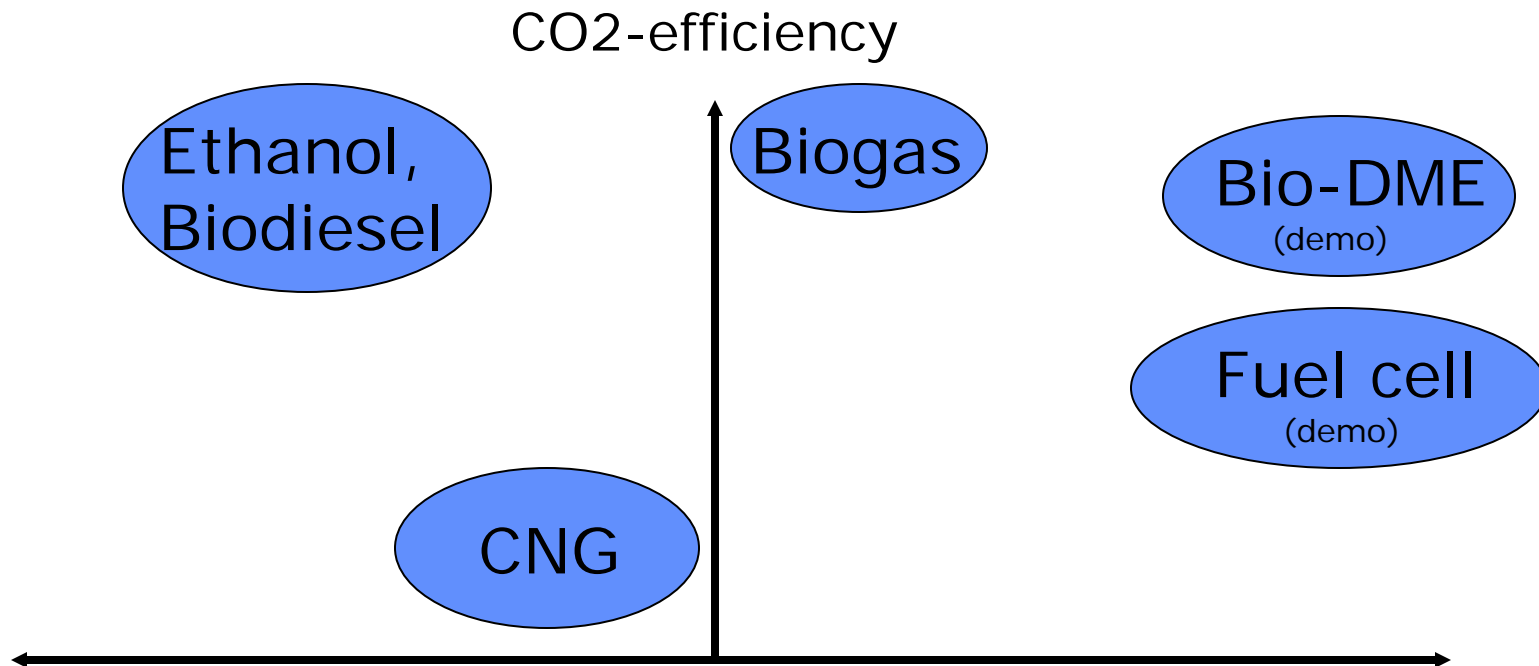






# Alternatively fuelled buses

- easy or difficult?



Easy:

- available fuel
- available vehicles
- operation cost competitive with diesel

Difficult:

- low availability of fuel
- low availability of vehicles
- high investments for infrastructure



# Conclusion: Two possible renewable fuels available.

→ ETHANOL = Volume and infrastructure!

Liquid fuel simplify infrastructure issues.

Large volumes internationally.

Energy used in production process mainly from renewable sources.

We know it works.

→ BIOGAS = Good niche fuel for heavy vehicles!

Lack of volume.

Low local emissions.

Expensive maintenance.

Expensive infrastructure.

Depot traffic only.

It works.





# SL's goals

## Rail Traffic

SL only uses electricity  
made from renewable  
sources  
(wind, water, biomass)



## Bus Traffic

- 25 % 2006
- 50 % 2011
- 100 % 2025



# How to get there

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One of Europe's largest  
Biogas Bus Fleets to be  
built up from 2004 and  
onwards

- ▶▶ *51 buses in 2006*
- ▶▶ *Approximately 120 - 130 buses  
in 2009*
- ▶▶ *Long term co-operation with Stockholm  
Water Cmp's waste plants*
- ▶▶ *Looking into new possibilities for biogas*
- ▶▶ *During 2005 decrease of 1 700 ton CO<sub>2</sub>*





# How to get there

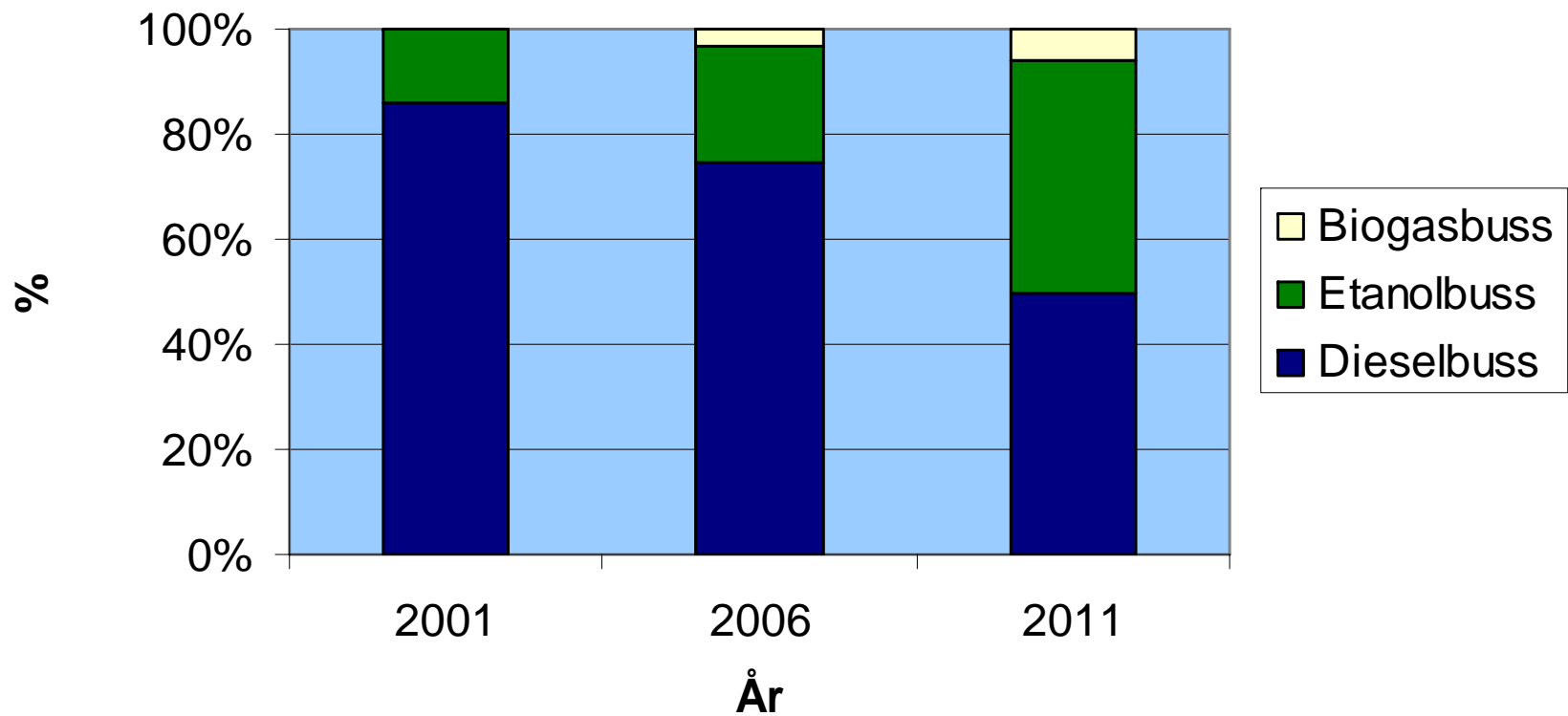
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## SL - World Leadership on Renewable Fuels

- ➔ The World's largest Ethanol Bus Fleet. All Inner City lines runs on ethanol.
- ▶▶ Since 1989
- ▶▶ *388 buses*
- ▶▶ *Renewable fuel with a large volume potential*



## Andelen bussar i SL-trafiken fördelat på drivmedel





Welcome to join us!



[www.ETHANOLBUS.com](http://www.ETHANOLBUS.com)

ETHANOL BUS BUYERS' CONSORTIUM

# SL's conclusions

- Necessary to secure the supply of fuel.
- Biogas and ethanol only functional and renewable fuels in the near future.
- Ethanol is the only renewable fuel with a large volume potential in the near future
- Ethanol is the financially most viable way to handle both global and local emissions
- Why wait? Sustainable Public Transport is already here. EEV standard with today's technology. Join the Ethanol Bus Buyers' Consortium.





End of  
Presentation



Thank You!

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