

# GHG Reduction Policy in Norway – how can the transport sector contribute?

## **Effects of potential measures in Norway**

Presentation from Tore Leite, Institute of Transport Economics

Meeting in the JTRC WG GHG Reduction Strategies in the Transport Sector – Paris, May 2007

# Presentation Norway

- Climate reduction targets for the transport sector?
- New purchase tax with CO<sub>2</sub>-component
- CO<sub>2</sub>-emissions in Norway – history and projections
- Possible measures and their contribution
- Main challenges

# Climate reduction targets for the transport sector?

- No specified reduction targets has been agreed on. Currently there is a vivid discussion on climate reduction targets in Norway (2006 and 2007)
- Drafts for climate action plans from the ministries has been made but not yet published (Spring 2007)
- Norwegian commission on low emission society 2050 (2006)
- Mitigation analyses from the Norwegian Pollution Control Authority (2005, currently updated)
- Prime minister has proposed, April 2007:
  - 30 percent reduction of GHG emission in 2020
  - 10 percent below Kyoto-commitment
  - 100 percent reduction within 2050
- Reduction targets include emission trading and project mechanisms

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# New purchase tax with CO<sub>2</sub>-component

New purchase tax is weighted according to:

- Weight (from 1.150 kg)
- Engine rating (from 650 kW)
- Cylinder capacity (from 1200 cm<sup>3</sup>)
- CO<sub>2</sub>-emission (from 120 g/km)

# New purchase tax with CO2-component

- Toyota Prius
  - 104 g CO2/km
  - 7439 Euro purchase tax
  - 2604 Euro tax reduction
- Toyota Auris 1.4 VVT-i D-4D
  - 132 g CO2/km
  - 8041 Euro purchase tax
  - 2124 Euro tax reduction
- Toyota Avensis 2.0 D
  - 153 g CO2/km
  - 13845 Euro purchase tax
  - 3897 Euro tax reduction

# New purchase tax with CO<sub>2</sub>-component – most bought cars January – August 2006

	Model	Type	CO <sub>2</sub> (g/k m)	New tax (NOK)	Change (NOK)
Volkswagen	Passat	1.9-105 D	157	99 689	-22 943
		2.2-136 D			
Toyota	RAV4	4WD	173	143 934	-35 410
Toyota	Corolla	1.4-90 D	128	58 102	-15 420
Volkswagen	Passat	2.0-140 D	162	129 414	-22 702
	Grand				
Suzuki	Vitara	1.9-129 D	205	177 433	26 450
Volkswagen	Touran	1.9-105 D	162	112 080	-20 400
		1.6-90 D			
Peugeot	307	SW	134	72 908	-19 672
Toyota	Avensis	1.8-129	172	101 066	-8 140
Volkswagen	Golf	1.6-102	178	84 226	-502
Ford	Mondeo	2.0-116 D	163	108 456	-26 642
Nissan	X-Trail	2.2-136 D	206	174 783	8 223
Volvo	V50	1.6-109 D	132	75 730	-20 134
		2.0-140 D			
Volkswagen	Passat	4M	184	160 729	-7 965
Toyota	Avensis	2.0-116 D	158	98 861	-28 985
Toyota	Corolla	1.6-110	168	78 747	-5 652
Toyota	Yaris		141	51 986	-10 414

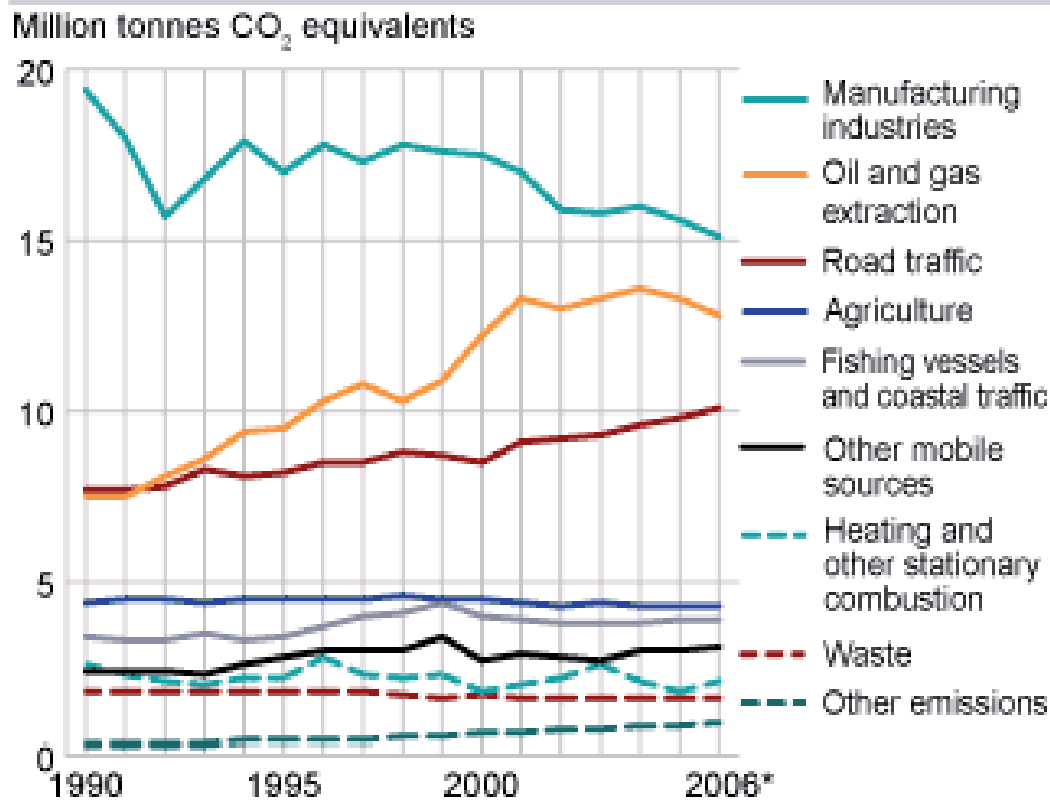
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# CO2-emissions in Norway – history and projections

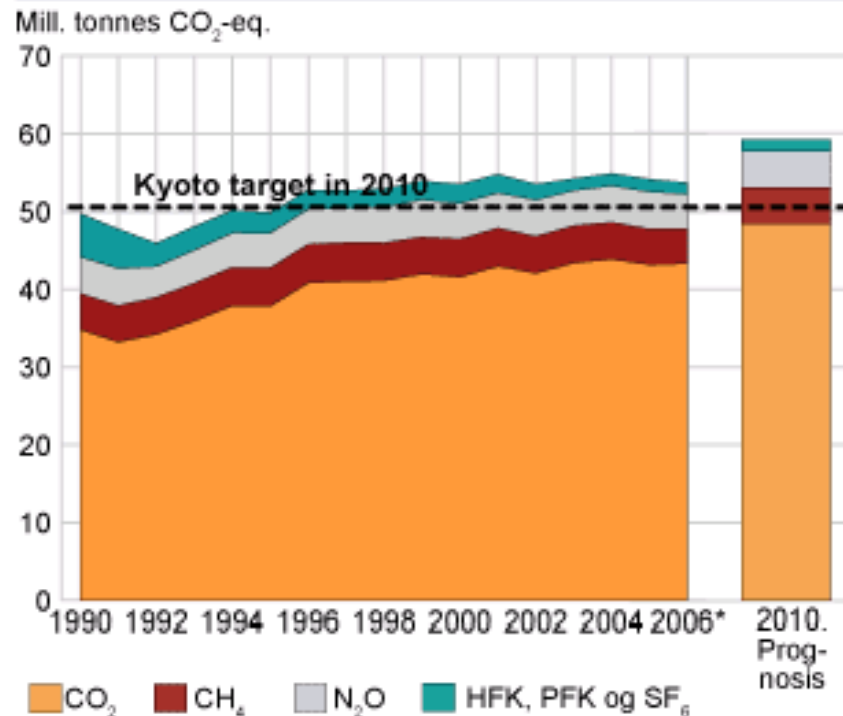
**Emissions of greenhouse gases by source. 1990-2006\*.**  
**Million tonnes CO<sub>2</sub> equivalents**



Source: Emission inventories from Statistics Norway and Norwegian Pollution

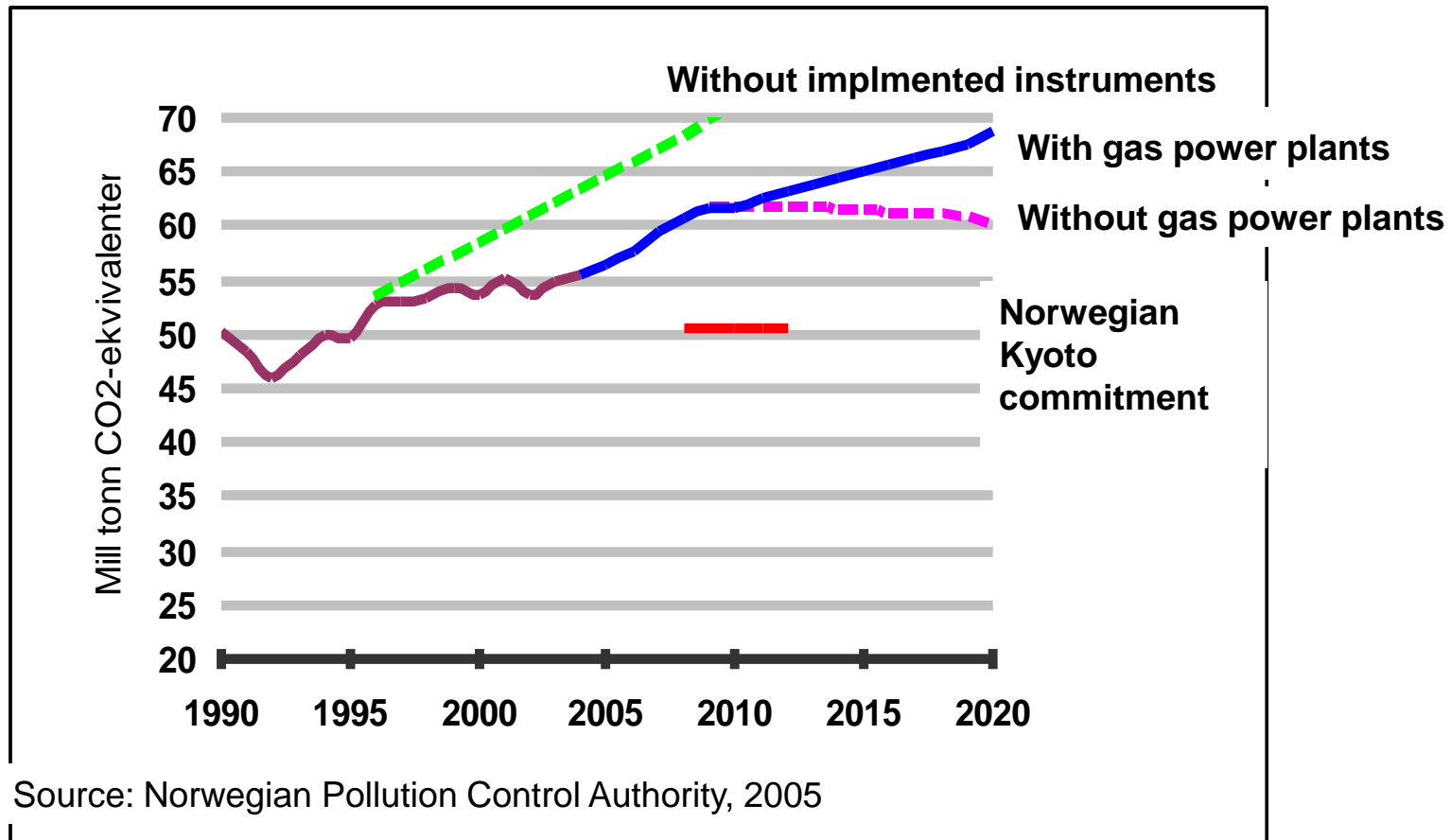
# CO<sub>2</sub>-emissions in Norway – history and projections

Emissions of greenhouse gases, 1990-2006\* and prognosis 2010. Mill. tonnes CO<sub>2</sub> equivalents



Source: Historical data: Emission inventory from Statistics Norway and Norwegian Pollution Control Authority; Prognosis: Report No. 1 (2006-2007) to the Storting; The National Budget 2007.

# CO<sub>2</sub>-emissions in Norway – history and projections



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# Possible measures and their contribution

If all measures are implemented:

- Contribution of 8 to 9 per cent reduction of the projected GHG emissions from the transport sector in 2020
- The growth will then be almost 30 per cent from 1990 until 2020, i.e. growth of 3 percent from 2005 - 2020
- Measures will reduce the emission with 550 000 in 2010 (no significant contribution)

# Possible measures and their contribution

<b>Technical measures for reducing GHG emission from road transport</b>	<b>Weighted emission reduction in 2020</b>
More fuel efficient cars – level 1	660 000
More fuel efficient cars – level 2	500 000
Zero emission vehicle	235 000
4 % bio fuel	395 000
Further 6 % bio fuel	260 000
4 % bio diesel, non road	45 000
Further 6 % bio diesel, non road	35 000
E85 or B50-100 in 10 % of vehicle fleet	390 000
Further 10 per cent bio fuels (second generation)	1 000 000
More fuel efficient LDV (hybrid)	24 000
<b>Totalt (skalert)</b>	<b>3 500 000</b>

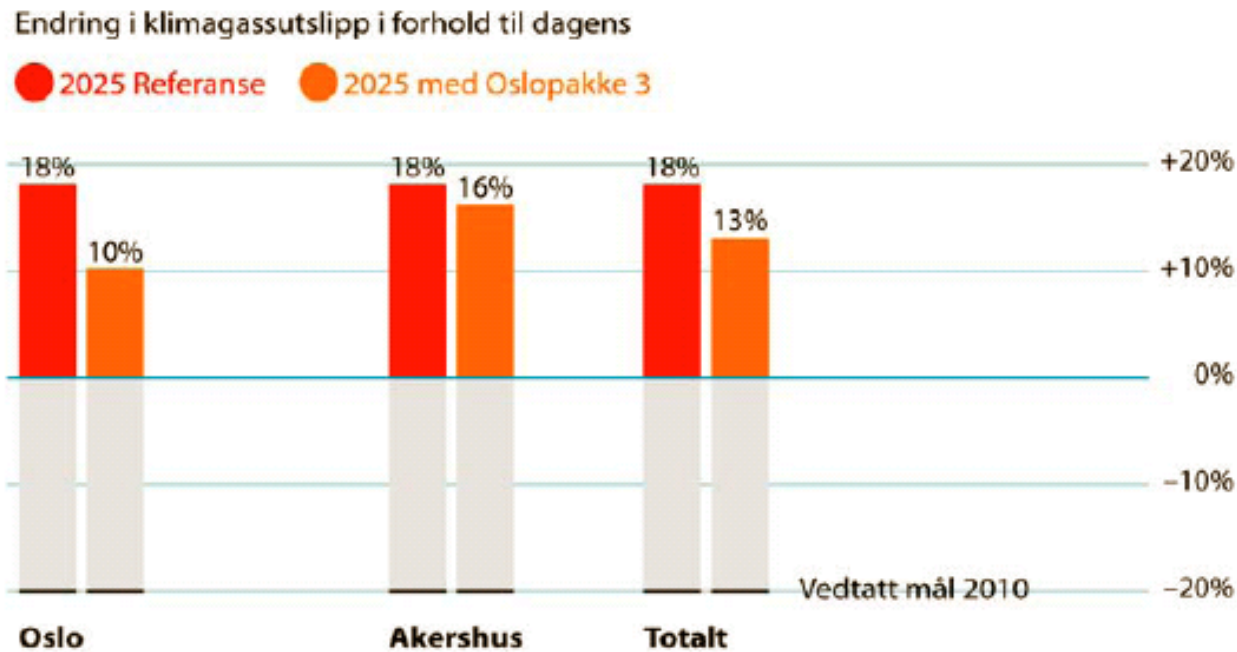
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“ We cannot innovate our way out of the emissions problem from transport. ”

Professor Jacqueline  
McGlade, Executive Director  
of the EEA

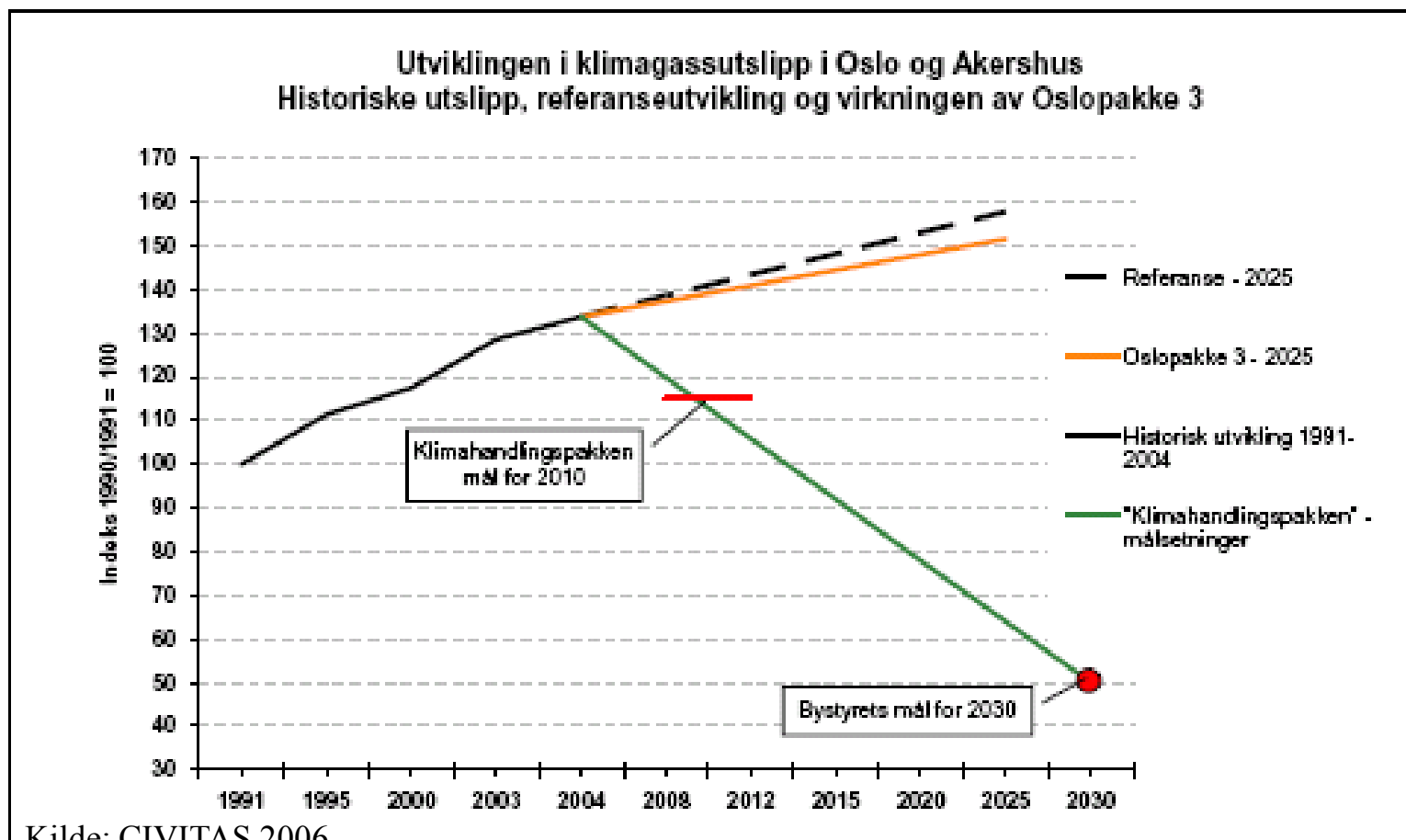
# GHG emission and road investments program - Oslo



**Figur 11.1** Endring i klimagassutslipp fra transport fra dagens situasjon til 2025, sammenlignet med vedtatt mål for 2010.

Kilde: Statens vegvesen





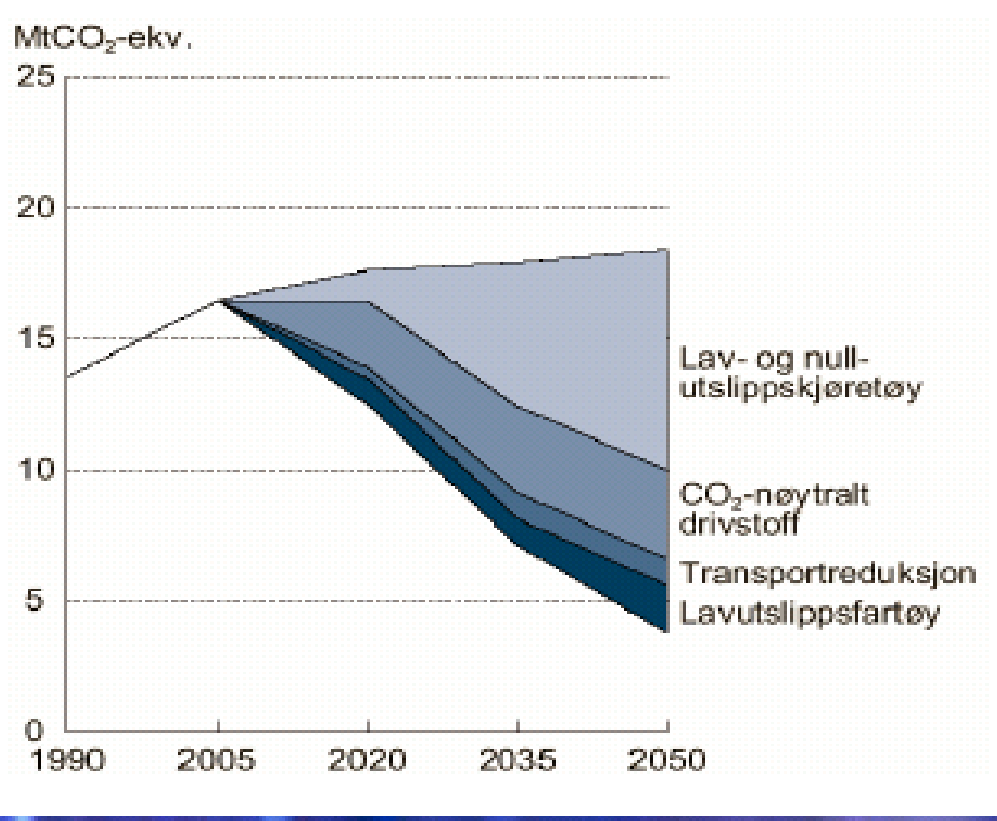
Figur 15: Utvikling i klimagassutslipp fra veitrafikk historisk og ved ulike scenarier fram til 2025. Miljøpolitiske målsetninger er angitt, vedtatt av Oslo bystyre og Akershus fylkesting i 2005.

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# Some methodical challenges

- Methodology
  - Transport demand projection crucial for output – and thus our recommendations
  - How do we estimate average emission from vehicle fleet in the projections in the different countries?
  - How to estimate the effectiveness of policy instruments?
- Structural/policy
  - Are there a mismatch between political commitment, actual road investment plans and possible measures?
  - How can we address need for more structural changes that reduce transport?



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