The Real Potential of Non-product Measures to Reduce CO₂ Emissions

Long Term Strategies for Reducing CO₂ Emissions from Transport

Henk van Hoorn
Ministry of Transport, the Netherlands
Summary
This paper focuses on the Dutch policy to reduce transport-related CO2-emissions, and the lessons learned in the past decade. For a number of reasons, the policy-targets set in 1990 with respect to CO2 reduction have not been realised. Therefore, a future policy has been formulated. The Netherlands have high expectations of new technology and pricing-instruments, e.g. electronic road pricing. Nevertheless, the Dutch policy includes a number of non-product related measures, like the raising of tire-pressure, the use of in car monitoring instruments and the enforcement of speed limits. These policy measures are very cost-effective. Moreover, for the longer term, a number of other measures are considered, like the reduction of short trips and the prevention of freight-transport.

Ladies and Gentlemen,

The subject of this session – “The real potential of non-product measures to reduce CO2 emissions” – is currently under discussion in the Netherlands. The discussion is about that little word “real”. Potentially, driving behaviour and reducing automobility can contribute significantly to reducing CO2 emissions. But can we realise these potentials in our present-day society, which is moving faster and becoming more mobile all the time?

Just at the moment I was preparing this contribution, a report from one of the advisory bodies of the Dutch government, the VROM (Housing, Regional Planning and the Environment) Council, was published. It is a comprehensive report. But the newspapers headlined only one of the conclusions. We read: the Dutch government’s “car pestering” is both unfair and a total failure to boot: it’s not possible to reduce traffic, and besides, it’s not necessary – because cars are becoming “cleaner” anyway.

All this was unfair: the newspapers plucked only a few sentences from the story. But the newspapers’ reactions are definitely relevant to the subject of this conference. What can we expect from non-technical solutions? And what public support do / will we have for those solutions?”

In this presentation I shall briefly discuss the old policy as it was formulated in the Second Traffic and Transport Structure Scheme (STTSS) of 1990. Secondly, I shall talk about what we have learned from it. Third, I will indicate the courses now being taken in the so-called Climate Policy Implementation Plan of 1999. And finally, I shall outline a few recent discussions. These are being conducted in preparing our New Environmental Policy Plan, to be published next year, and the new National Traffic and Transport Plan, which will appear this year.

I. Second Traffic and Transport Structure Scheme

To a large extent, the Second Traffic and Transport Structure Scheme signified a revolution in traffic and transport policy in the Netherlands. For the first time, besides accessibility, quality of life was added as an objective. What’s more: in government policy, accessibility and quality of life were largely considered to
be two sides of the same problem. There is too much traffic. This means congestion and a burden on the environment. So the idea was: let’s try to limit the growth of traffic.

And CO2 was approached from that angle as well. A goal was set: in 2010, 10% less CO2 emissions from traffic than in 1986. Then three types of measures were set up:

Pollution control at source: ensure that vehicles are as clean and fuel-efficient as possible. This largely international track has been very successful for NOx.
Volume policy: ensure that fewer pollutive kilometres are made.
Driving behaviour: ensure that kilometres are made which are driven in the least pollutive manner possible.

The so-called volume policy was approached from two angles. First it was examined whether the need for movement could be reduced. Examples include teleworking and spatial planning.
Second, it was examined how movement could be rendered as non-pollutive as possible. Examples include stimulating use of public transport (PT) and the bicycle, transport management and carpooling. Car use was also discouraged through price measures and parking policy, for example.
The third track, driving policy, was approached via the enforcement of driving speeds and public campaigns.

II. Lessons learned

In implementing the policy, we faced a number of issues:

First we were confronted with one hard fact: the emission of CO2 has not diminished. The policy goals are not being met. Quite the contrary: no reduction was achieved; emissions have risen and will continue to rise, even with the proposed measures in response to the Kyoto agreement.

Second, it appeared that there was little support for some measures, particularly price measures. National increases in excise taxes on fuel were countered time and again with lengthy discussions concerning border issues, such as service station owners watching their customers go to Belgium or Germany. The business community also showed opposition from the point of view of competition. Higher excise taxes mean higher transport costs. Incidentally, for a long time we were also confronted with low oil prices, which have gone up only recently. The price at the pump doesn’t only depend on the government.

Third, there are measures that seem good in theory, but in practice they have all sorts of effects you don’t expect, and those are sometimes undesired effects. An example is stimulating public transport. You can only attract a small segment of motorists. There is a considerable move from bicycle to public transport, and there is a lot of new traffic. Ergo: the total number of motorised movements is increasing.

Fourth, the effort aimed at accessibility and the CO2 issue as two problems with basically the same origin – i.e. too much traffic – is not the right one. What is good for fighting congestion is not necessarily the most effective solution for CO2. What is good for local quality of life is not necessarily a cost-effective solution for CO2. CO2, after all, is not a local or even a national problem.
An example is the policy on public transport (PT).
On some routes, PT has a 50% share or even higher. These are the longer distances between the hearts of large cities in particular – where accessibility is difficult with a car. Also involved are the connections between satellite towns and the centre of a large city if there is congestion on the roads.
But on a national level, the transition from car to PT is extremely small. Compared to the investments we are now making in PT, it is not very cost-effective at all if you take the costs into consideration. For operation subsidies alone, we spend 2 billion guilders per year, and that doesn’t include investments in infrastructure.
The lesson to be learned here is not that we no longer need to stimulate PT. PT can be good for congestion and for the local environment. PT investments can then also reduce CO2 emissions, but do not do it for
that reason – and do not sell it as such. For that same reason it was decided in the Netherlands not to communicate road pricing as a CO2 measure. There is a CO2 effect, but the most important effect of road pricing is the reduction of congestion.

The same story is true for Regional Planning. In essence, Regional Planning has an effect on the number of travel kilometres. It involves the choice of new locations – near existing centres, or far away – but also the layout of new neighbourhoods. Significant reductions can potentially be realised. Figures of 30% less CO2 are mentioned in some neighbourhoods.

In reality, regional planning policy has not proven very effective. The distance between home and work is increasing, partly as a result of investments in infrastructure, which allows larger distances to be travelled in the same amount of time. The average speed of the car in commuter traffic has increased almost 1% during the last decade, despite growing congestion.

Here as well: this is not an argument against neighbourhoods with low car density. It can even lower CO2 emissions. But do not make Regional Planning the spearhead of your CO2 policy. There are other and more effective instruments for that.

### III. Recent policy: The Climate Policy Implementation Plan

The Climate Policy Implementation Plan was created partly on the basis of experiences since 1990. The Plan is a direct result of the Kyoto Protocol, where the Netherlands received the task of realising a 6% reduction for the period 2008-2012 compared to 1990.

It was decided in the Netherlands not to work with sector objectives, but to focus on cost-effectiveness: achieve reductions where you can obtain the greatest reduction for the least money. Public support was also taken into consideration.

The result was a set of traffic measures. With these measures, the emissions of the sector traffic and transport in 2010 will be roughly 36 Million tons. This is about one-fifth more than in 1990 (29 Million tons). So emissions are still growing – and in fact, the traffic and transport sector is even the fastest grower. But the measures do signify a limitation of the expected growth.

What are these measures?

**More efficient cars**
- the agreements between the EU and the ACEA on cleaner cars will result in a reduction of ca. 0.4 Mton CO2 in 2010;
- tax incentives: the purchase tax on relatively fuel efficient cars will be lowered, taxes on fuel inefficient cars will be raised.

**Driving behaviour**
- stepped-up enforcement of speed limits
- in car monitoring instruments
- raising tire pressure

**Traffic reduction**
- existing tax constructions will be changed in order to discourage commuter traffic and the personal use of company cars
- road pricing

All together, these measures should result in a reduction of 3 Million tons.

As you see, a great deal is expected of driving behaviour. I shall discuss a number of points in greater detail.
The speed limit policy is very sensitive on the point of public support. Possible CO2 reductions are considerable, and the costs in terms of money and safety are positive. In the Option Document several variations were presented, including a general reduction of the maximum speed from 120 km to 100 km/hour. That turned out to be a bridge too far in the political arena. The choice fell on strict enforcement of existing limits, which also results in a reduction of roughly 0.5 Million tons. Accordingly, we doubled the effort in terms of manpower and money in order to bring about a better compliance with speed limits.

Labelling the fuel consumption and CO2 emissions. There is a European guideline on this issue. The Netherlands has decided not only to give the absolute figures, but also the relative ones. They are shown here [Sheet]
The C shows that this car is in the upper middle bracket of its class. The advantage is that the consumer can compare the fuel consumption of a car to similar cars. 7.6 litres is fuel-efficient for a large car, but fuel-inefficient for a small car.

There are also a number of measures that we can place under the heading “The New Driving Force”. This is first and foremost an organisational whole. Under this umbrella, not only the government but a large network of organisations – consumers, producers, social organisations – work toward realising objectives. New Driving means: driving more slowly, in a constant speed in the highest possible gear, lower revolutions per minute, braking less, using as much as possible the rolling power of the vehicle. This method could save up to 40% of energy consumption; the average is about 10 to 12%.

The New Driving Force has various themes:

**Tire pressure**
The tire pressure of roughly 45% of cars is too low. This means extra resistance, and therefore higher fuel consumption and higher CO2 emissions. Raising tire pressure is a measure that costs just about nothing, saves money for the individual, reduces damage to the tires, promotes road safety and can mean a reduction of CO2 emissions in the Netherlands of approx. 0.3 Mtons. The most important activities the government can undertake include: making agreements with the automobile branch, auto repair centres and petrol stations to advise customers on optimum tyre pressure levels, to check tire pressure during inspections – e.g. during the APK inspection – and to stimulate onboard systems that keep a check on tyre pressure. Here, the automobile branch can play a major role by introducing in all countries standard a higher tire pressure.

**In Car Monitoring Instruments**
With in car instruments such as cruise control, the econometer and the onboard computer, it is possible to reduce fuel consumption and CO2 emissions by an average of 5 to 10 percent. Here as well, there are clear advantages for the road user: lower costs, increased safety.

In the Climate Policy Implementation Plan the Dutch government decided to eliminate the BPM, the purchase tax on these in-car instruments. It would be even better if the automobile industry were to install these instruments as standard features with purchase, like it did with air bags. This would save costs. The Dutch government is making efforts to arrange a covenant to that regard which will be fully operational as of 2005.

**Driver training**
Driver training. Student drivers are currently taught to use an easy-going, sporty driving style. The government is trying together with the branch to retrain instructors in this matter. As to drivers who already possess a driving-licence, the government sets up a pilot with 10,000 people in order to investigate the best means to retrain their driving habits.

In a certain sense, courses within companies - including transport-companies - form a separate group, because besides individual benefits, there is also a relatively clear advantage for the company. Driving more carefully/slowly means lower fuel costs and damage prevention. Especially for companies with...
many cars on the road, it can really make a difference. Many businesses install black boxes in their company cars so that the driving style of the driver can be monitored and corrected. Experiments have also been conducted with speed limiters for delivery vans. These are usually transport companies, but also companies with many of its own cars, such as the Postal Services. In the background, the insurance companies play an important role here: the insurance premiums go down.

In 2002 and 2005 the progress of the Climate Policy Implementation Plan will be evaluated. If necessary, a reserve package will be adopted. This package also includes an increase in excise taxes for the traffic and transport sector.

**IV. The Future**

Finally, I should like to discuss ideas for the longer term. For now, the Dutch government is working with the guideline which states that in the next century, we will have to reduce CO2 emissions by roughly 80%. There are as yet no set tasks for the traffic and transport sector for after 2010. But it is clear that Kyoto is only a modest beginning.

At this time in the Netherlands, a great deal is expected from technology, and the Netherlands will therefore continue to advocate farther-reaching standards for vehicles and fuels on an international level. One area of focus is climate-neutral energy carriers. But various scenarios of the OECD, for example, indicate that the technical course alone will not bring about the necessary reductions. This is why at the end I will discuss a number of ideas under development at this time.

First, pricing. Besides road pricing and the tax on the ownership and use of cars, we are now examining the possibilities of a farther-reaching variabilisation of automobile costs in the form of a kilometre tax. The idea is to have people pay for the actual driving, and not for owning the car.

Second, transport prevention. In the freight transport sector, we have primarily focused on transport efficiency, such as increasing the load and shifting the modality. The idea of transport prevention is relatively new: to prevent transport without resulting in stagnation of economic development. An example is orange juice. The product mainly consists of water. You can add that in the factory, but it takes up a lot of cargo space. It is also possible to make small packages and have the consumer add the water at home. Another example is to wash off the clay from the beets before they are transported. The government will devote itself primarily toward broadening producers’ logistic horizons and increasing consumer awareness. The potential of transport prevention must not be exaggerated, however. It is not a magic potion. But combined with higher transport costs, the idea is more likely to succeed.

Third: short trips. Over 70% of car trips are only of a distance of 7.5 km. One out of five car trips is shorter than 2.5 km. These are distances can be traversed by bicycle or even walking. A 10% reduction in car trips shorter than 5 km would result in a reduction of 0.2 Mtons.

And finally, a comment on the separation of technology and “non-product-related” policy measures. They must not be exaggerated. A sweeping climate has consequences which are far-reaching. Even if paths are chosen which will elicit the least resistance, the consequences are considerable, because the price of new technology is high. And those consequences must “fit” the population. Fit their opinions and their behaviour.

In order to prevent reactions from the public such as “you are pestering cars”, we will have to enter into a dialogue. And in this dialogue, we must seriously discuss the risks of climatic change and the consequences of the policy measures. In plain language. And secondly, technology will have to fit the lifestyle of the people. Otherwise, technology will simply not be accepted. New technology requires new behaviour.

Thank you.