

ENVIRONMENTAL BUDGET REFORM IN DENMARK

POLICY PAPER

“MAKING PRICES WORK FOR THE ENVIRONMENT”

This Policy Paper describes an example of a possible Danish environmental related budget reform. The example illustrates a marked shift to taxing the use of resources and polluting behaviour instead of e.g. the taxing of labour – fully implemented in 2010.

Environmental Budget Reform in Denmark

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The Proposal for a Danish Environmental Tax Reform from The Danish Ecological Council

The Ecological Council has drawn up a proposal for a Danish Environmental Tax Reform, that fully implemented in 2010 will double the percentage of the total Danish tax revenue, that is coming from Environmental taxes.

The aim of the full proposal is to give an example of a change in the tax system in a more environmental friendly direction without changing the social distributional effect in society, without raising the tax and without disturbing the competitiveness in the Danish industry

Environmental taxes should be used, where they are the most effective instrument for easing or solving environmental problems. Therefore we only propose new taxes or adjustment of existing taxes, where it's effective for solving or lowering an environmental problem, which is suitable to be solved using economical instruments such as levies and taxes.

Environmental taxes of course gives revenues. Some times Environmental taxes are accused for being implemented just for the revenue, just to heighten the tax pressure. The proposal from the Danish Ecological Council shows that it doesn't have to be like that. The revenue from environmental taxes can be used to reduce other forms of taxation, especially income taxes, and that can be done in such a way, so that the complete proposal doesn't affect low income heaviest and doesn't spoil industrial competitiveness.

Some times environmental taxes are also accused of the opposite: When the purpose of environmental taxes is to limit the environmental problems and the use of natural resources, then environmental taxes undermine their own tax base and therefore they cannot be used as a stable means of financing the public expenditures. Such a critic is overshooting the mark. We will continue to use resources and energy, we will continue transport our selves and goods around in society and we cannot exist without producing a certain amount of waste. The tax base will therefore not disappear, but the environmental taxation shall bring it down to a sustainable level.

What is a sustainable level? On far most areas neither science nor others can give a final and clear answers to that question. But we do know the direction and the use of environmental taxation will send a clear signal to both consumers and producers about that direction. That signal is crucially for their long-term planning and therefore also for the possibilities to ensure, that environmental problems will be solved in the most economically efficient way.

The proposal from the Danish Ecological Council is an example of such clear signals in a number of areas, where it is clearly documented, that we have to improve considerable comparing with today. What is actually a sustainable level and how big the environmental taxes have to be will at any times be a political question, which have to be decided taking the actual knowledge into consideration and the targets must be adjusted along with the improvement of that knowledge.

The Danish Ecological Council has in the proposal primarily focused on the use of environmental taxes to help solving environmental problems such as climate change, air pollution and undesired chemicals, but also according to tap water supply, solid waste production, waste water and the overuse of resources. At the same time we have pointed out areas where subsidies makes environmental problems bugger. A reorganizing or removal of these environmental perverse subsidies will both benefit the environment and save public finances.

We have divided our proposal in two parts – Household and industry. When environmental taxes are imposed on household, the revenue from those taxes is reversed to households, mainly by lowering income taxes. The same is done for industry where the revenue mainly is reversed as subsidies for environmental positive arrangements e.g. energy savings and as contributions according to the labour expenditures for in that way to lower the costs of labour. The proposals to raise the level of existing environmental taxes is concentrated around energy use, transport and the use of hazardous chemicals, because there areas is the main cause of many environmental problems.

The proposal moves all in all a little less than 60 billion Dkr. in tax revenue from mainly income taxes to taxation of resource use and pollution. Of course we are talking about a qualified estimate because on most areas we haven't got sufficient knowledge about how consumers and producers will react on the actual level of a certain environmental tax. A systematic collecting of knowledge in this area should be an integrated part of an environmental tax reform. The 60 billion Dkr. will make up 9% of the total tax revenue in 2010, so everything else equal the total revenue from environmental taxation in 2010 will make up about 18,5% of the total tax revenue. All figures are in fixed 2001 prices.

Proposal for a Danish Environmental Tax Reform 2002 to 2010:

Taxing Carbon emissions from flaring from oil platforms	+ 0,3
Increase tax on extraction of oil and natural gas in the North Sea	+ 3,7
Increase taxes on Petrol and diesel	+ 1,0
Introduce road pricing differentiated according to environmental performance of cars	+ 10,8
Increase steps in the environmental car owner tax (steps moved 5 km/litre)	+ 2,0
Increase registration tax for energy ineffective cars	+ 1,0
Increase carbon tax	+ 3,8
Phase out rebates on carbon tax for energy extensive industry	+ 1,7
Lower rebates on carbon tax for energy intensive industry	+ 1,9
Increase energy tax for electricity in households	+ 6,3
Increase energy tax for oil, coal and natural gas in households	+ 8,5
Increase tax on pesticides	+ 0,1
Industry pays full tax on piped water	+ 0,7
Increase tax on chlorinated solvents	+ 0,0
Tax unwanted chemicals	+ 3,0
Tax fuel for airplanes and ferries/ships	+ 5,3
Increase tax on solid waste	+ 0,7
Increase tax on waste water	+ 0,5
Tax advertising, e.g. handouts, fliers, commercials, brochures	+ 4,0
Increase tax on PVC and phthalates	+ 0,1
Tax high pressure treated wood and timber	+ 0,0
Remove tax rebates for transport to job	+ 2,0
Reorganize or remove subsidies for agriculture	-
Remove subsidies for energy based on fossil fuels or nuclear	-
More jobs and a broadened tax base gives an effect	-
Savings in expenditures for environmental damage	-
Reduce the rate of ordinary income tax low bracket from 5,5 % to 1,0 %	- 30,3
Increase the income tax threshold with 5.000 DKK	- 8,0
Reduce the VAT on organic food products and ecolabelled products	- 2,0
Social compensations by increasing child allowances, educational aid, retired peoples pensions and other social allowances	- 6,0

Compensation to industry according to labour expenses	- 6,2
Funding for introducing cleaner technology	- 2,5
Changing taxation and write offs for environmental friendly investments	- 1,5
Increase investments in railway, tram, metro, bus light rail	- 1,0
Tax diesel vehicles without particle filters – Reverse for installation of filters	Neutral
Tax fuel use for Public transport – Reverse as subsidy for labour costs for drivers	Neutral
Tax energy extensive electrical appliances and subsidy energy effective appliances	Neutral

All figures are in billion DKK. (2001 - price level)

A Comprehensive Environmental Budget Reform is Possible

The Danish Ecological Council wishes with this report to visualize the possibility and the necessity for the use of economic instruments, especially a environmental tax reform or a environmental budget reform, to ensure a more sustainable development including a clearly improved environment.

Numerous surveys and statements from universities and researchers, governments, EU and OECD support the truth in this point of view.

We also want to present an example of how such an environmental budget reform could look, if the revenue from existing and new green taxes is increased, if environmental damaging subsidies are removed or reallocated and if all the increased revenue is used to reduce the bottom tax, to increase the tax free income allowance, to compensate low incomes by increasing some social benefits, to reverse the extra expenses for industry according to the labour cost and to subsidise implementations of energy effective and cleaner technology.

An environmental budget reform will have the following benefits:

- Significant improves of the environment by reduced use of natural resources and reduced pollutive emissions.
- The public pressure of taxation doesn't increase
- Social income distribution is not affected (No extra burden on low incomes)
- Industries competitiveness is not affected in negative direction
- Number of jobs is not affected in negative direction – more likely the opposite
- Furthermore it can be foreseen, that Danish industry's opportunity for development and export of energy effective products will be strengthened

We do propose a tax change in the period of 2002 to 2010 together with a removal or reallocation of environmental perverse subsidies in the same period.

We underline, that the proposal only is estimated roughly, as well as the mentioned changes in behaviour that improves the environment also only is estimated roughly. The Danish Ecological Council doesn't have the capacity to do the often very complicated calculations of revenues and distributional effects, also because of the lack of knowledge on many of the areas.

Principles for Choosing Environmental Taxes, Removal of Environmental Perverse Subsidies and the Matching Reversals and Compensations

Environmental tax or budget reform can of course be put together in numerous ways.

- The Danish Ecological Council has chosen a number of characteristic areas of environmental policy such as energy, transport and hazardous chemicals. In these areas there will be marked improvements of the environment using economic instruments, and at the same time the use of economic instruments such as taxes will create a considerably revenue that creates the possibility to reduce other taxes.
- We have chosen only to calculate the removal of one of the environmental perverse subsidies, namely the tax rebates for transport. We call attention to the existence of other environmental perverse subsidies such as subsidies to intensive agriculture and energy based on fossil fuels or nuclear. These have to be abolished as soon as possible. That concerns the EU subsidies for agriculture, that hinders third world countries access to EU markets and makes it economically positive overuse both pesticides and fertilizers thereby damaging the environment.
- In the present proposal we state for sure, that the social distribution from the total tax system won't be changing as a result of the environmental tax reform. It is also our intention that the total pressure from taxes will not be changed. Therefore we propose, that the reversion of the increased revenues must be done by reducing the low bracket of the ordinary income tax, increase of the income tax threshold and on top of that to make smaller necessary adjustments in the social welfare system.
- The principles for industry are that industry, as a whole will not lose competitiveness. The increased expenses for environmental taxes is compensated by giving subsidies according to the labour cost in each company and by subsidising energy saving activities and cleaner technology in the companies. It is obvious that the more such an environmental tax reform spread across Europe or countries close to Denmark, the less effect on industrial competitiveness especially for energy intensive industry we will see.

On this background we find, that the present proposal for an environmental tax reform do not conflict with the basic principles in the tax policies of neither the Government nor the opposition. It is consistent with the tax stop declared by the Government, where it's actually stated in the governments declaration from November 2001, where it is stated, that tax changes can be introduced, also using environmental taxes, as long as the total increased revenue is reversed completely by reducing other taxes. See quotation page 20.

OECD and EU-Commission Recommend the Use of Economic Instruments in Environmental Policy

On international and national levels there are an increasing attention and recommendation for increased use of economic instruments to obtain a more sustainable development. In these recommendation the implementation of environmental tax reforms is central.

”Moving the sectors and issues of energy, climate change, transport and air pollution out of the ”red lights” category will require a comprehensive policy package. Such a package should include a combination of economic instruments (subsidy and tax reform, introduction of new taxes or charges, and wider use of tradable permit systems), a strong regulatory framework (particularly for setting air quality targets or standards) the promotion of voluntary or negotiated agreements, and the use of information-based policy tools to encourage more sustainable energy consumption and production patterns”.

”This *Outlook* outlines ”policy packages” or combinations of instruments – regulatory, economic and others – that can be used to tackle many of the most pressing environmental problems. The policy mix suggested here involves the combination of a robust regulatory framework with at variety of other instruments, such as stronger price mechanisms to influence the behaviour of consumers and producers, voluntary agreements, tradable permits, eco-label and information based incentives, land use regulations and infrastructure provision. In particular, The *Outlook* recommends the removal of environmental harmful subsidies and a more systematic use of environmental taxes, charges and other economic instruments to get the prices right”.

Source: ”Highlights of the OECD Environmental Outlook”, OECD 2001

Getting prices right to give signals to individuals and businesses

Getting prices right will encourage changes in behaviour and technology

Market prices have a powerful influence on the behaviour of individuals and businesses. Market reforms to get prices right can create new business opportunities to develop services and products that ease pressure on the environment and fulfil social and economic needs. Sometimes, this means public money for services, which would otherwise not be supplied, such as essential public services in sparsely populated areas. More often, the issue is one of **removing subsidies that encourage wasteful use of natural resources**, and putting a price on pollution. Changing prices in this way provides a permanent incentive for the development and use of safer, less polluting technologies and equipment, and will often be all that is needed to tip the balance in their favour.

Quotation from: KOM(2001)264: ” A Sustainable Europe for a Better World: A European Union Strategy for Sustainable Development, (Commission's proposal to the Gothenburg European Council 15th May, 2001)

“The final and most crucial step is to start pricing energy properly. At the moment, the harm done to human health and the environment from burning fossil fuels is not reflected in the price of those fuels, especially coal, in most countries. There is no perfect way to do this, but one good idea is for governments to impose a tax based on carbon emissions. Such a tax could be introduced gradually, with the revenues raised returned as reductions in, say, labour taxes. That would make absolutely clear that the time has come to stop burning dirty fuels such as coal, using today's technologies”.

Source: Editorial from: "The Economist" of 6. July 2002, Page 11.

“Environmentally related taxes have proved to be a powerful tool in environmental policy. Hence an increasing number of OECD countries have undertaken “green tax reforms”, with primary objective to protect the environment”.

Source: "Greening Tax Mixes in OECD Countries: A Preliminary Assessment". OECD, Oct. 2000.

“The use of economic instruments to promote energy efficiency and modify sustainable consumption patterns is essential”.

Source: "Report from Regional Roundtable for Europe and North America – 2002 World Summit on Sustainable Development". June 2001

“Environmental taxes can be defined as compulsory payments levied on tax bases deemed to be of particular environmental relevance (OECD, 2001). They help ensure that the market price for a particular product or process reflects its environmental costs more closely, while at the same time creating revenue that can be used to reduce other taxes (e.g. on labour). Imposing environmental taxes can help to reduce the demand for relevant products and processes and the associated pressure on natural resources”.

Citat fra: "Environmental Signals 2002" Det Europæiske Miljøagentur, 2002

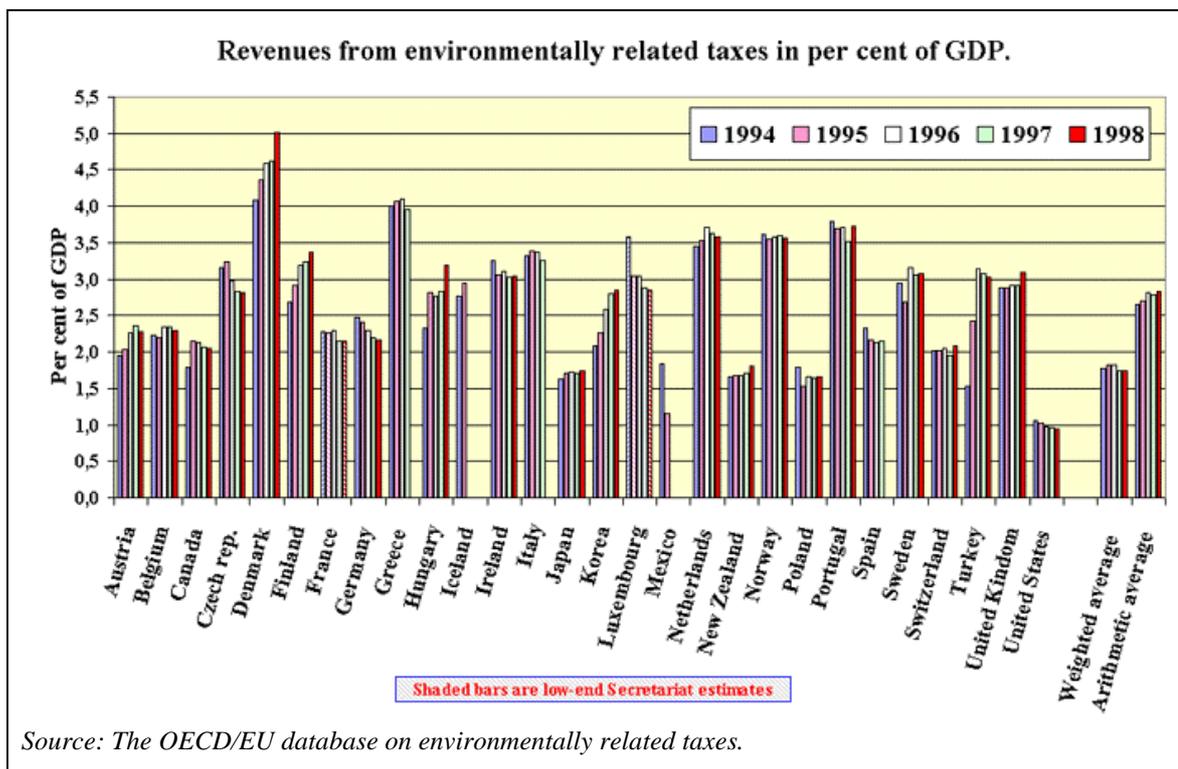
”In the right circumstances, environmental taxes can be highly effective in both cost and environmental terms as the differentiated tax rates on leaded vs. unleaded petrol demonstrated. They also provide incentives for companies to research and invest in more environmentally friendly or less resource intensive technologies (dynamic efficiency). This makes them particularly attractive for problems of a long-term nature”.

Quotation from: The Commission's proposal for "The Sixth Environment Action Programme", KOM 82001) 31 final, 24.1.2001

The Danish Situation

Denmark is the country in the World that today has the greatest part of the total tax revenue and part of the GNP coming from environmental related taxes. See the following calculation from OECD.

Despite the relatively high revenue from environmental related taxes there are still more possibilities and benefits by changing the tax system increasing the revenue from taxes on use of natural resources and pollutive behaviour and reducing the revenue from income taxes.



High Danish income tax level

Denmark is one of the countries in the World that the direct income taxation is the highest share part of the total income. This is because of the Danish welfare model, in which a number of social benefits are paid directly from the revenue from the income taxation. In other countries these costs are paid partly by workers and partly by employers, not affecting the tax bill and partly as a direct payment from the users of the welfare system if not only available in private systems.

On the other hand the remaining available income after taxes and social payments is almost equal in Denmark and Germany.

"The survey shows that the pressure of taxes as a whole is about 15% higher in Denmark than in Germany. On the other hand the Danes get more in return for the tax than the Germans. When you put taxes and social contributions together a single Danish and German industrial worker gets an equal share of their wage, to be used for private consumption"

Quotation from: Jan Plovsing, Danish Statistics September 2002.

This means, that there is an increasing pressure on the Danish tax system to lower the taxation on labour, so that the financing of the Danish welfare model is getting harmonised with especially the majority of the EU members ship countries. The pressure comes from national level from The Economical Council, from industry and from a number of NGO's. On international level the pressure comes from IMF, OECD and the EU that in their yearly evaluations of Danish economy recommends changes in the Danish tax structure, in order to reduce income taxation level.

The Danish Green Taxes 1980- 2002

Tax/ duty	1980	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Duty on energy products	6.557	14.150	14.222	14.192	14.703	15.843	17.932	20.006	20.905	23.475	26.566	29.275	31.350	31.300
Coal	-	851	892	797	738	592	602	650	703	750	1.143	1.700	1.400	1.550
Electricity	1.213	4.380	4.336	3.938	3.562	4.139	4.482	5.167	5.726	7.525	7.529	7.750	8.000	7.950
Gas	63	39	41	15	43	47	50	45	44	0	0	0	0	0
Natural gas	-	-	-	-	-	-	-	28	37	525	1.345	2.775	4.000	4.075
Oil	1.591	3.136	3.507	3.791	4.749	4.945	5.411	5.897	5.854	5.900	6.674	6.900	7.475	7.225
Petrol	3.690	5.744	5.446	5.651	5.611	6.121	7.387	8.219	8.541	8.775	9.875	10.150	10.475	10.500
Weight duty / Annual ownersh	2.888	4.363	4.547	4.213	4.225	4.268	4.404	4.918	5.172	5.650	6.470	6.925	7.000	7.770
Registration duty	3.049	8.007	8.256	8.532	7.998	13.312	14.967	15.363	16.366	17.800	16.786	14.100	12.900	13.615
Duty on third part liability insur	476	933	894	855	856	894	944	1.068	1.336	1.350	1.430	1.475	1.475	1.625
Road toll	-	-	-	-	-	227	289	262	270	286	296	295	325	325
Eco taxes	122	1.093	1.196	2.605	4.264	4.860	5.236	6.589	7.599	9.356	9.289	9.503	9.698	9.493
CO ₂	-	-	-	1.401	3.177	3.318	3.245	3.693	3.930	4.550	4.515	4.725	4.750	4.924
SO ₂	-	-	-	-	-	-	-	296	396	375	481	275	325	100
Disposable tableware	-	74	79	73	69	66	72	59	56	55	60	60	0	0
Certain retail containers and c	100	399	433	462	305	439	479	516	513	900	752	775	950	970
CFC	-	27	13	22	12	5	2	0	0	1	0	1	110	60
Waste	-	404	473	454	529	571	619	601	867	1.000	981	1.000	1.060	1.089
Extraction and import of raw r	16	129	141	140	120	122	136	135	145	150	184	190	190	169
Piped water	-	-	-	-	-	295	652	970	1.279	1.600	1.482	1.700	1.500	1.415
NICd batteries	-	-	-	-	-	-	-	34	35	35	25	25	25	20
Chorinated solvents	-	-	-	-	-	-	-	3	3	5	2	2	2	1
Pesticides	6	60	57	54	52	44	31	282	235	300	445	380	380	365
Waste water	-	-	-	-	-	-	-	-	140	325	314	300	300	285
Antibiotics	-	-	-	-	-	-	-	-	-	35	14	0,5	0,5	0
Phthalates and pvc	-	-	-	-	-	-	-	-	-	-	0	40	75	65
Nitrogen	-	-	-	-	-	-	-	-	-	8	34	30	30	30
Total	13.092	28.546	29.115	30.397	32.046	39.404	43.772	48.206	51.648	57.917	60.837	61.573	62.748	64.128
Share of GDP in pct.	3,5	3,36	3,39	3,42	3,54	4,1	4,33	4,52	4,58	4,87	5	4,83	4,74	4,58
Share of total tax revenues	7,68	7,09	6,93	6,94	7,04	8,23	8,83	9,19	9,34	10	9,9	9,73	9,46	9,54

Source: The Danish Ministry of Taxation 2002

Increased environmental taxation and reduction of income taxes is recommended

Reduction of income taxation creates a need for increased taxation elsewhere when the level of public expenditures is constant. This can logically be done in several ways, where an increase of taxation of private property is a way that e.g. is recommended of the Danish economic Wisemen.

A balanced increase of the tax revenue from environmental taxes is another way of given possibility for a reduction in income taxes. This way is recommended of a number of national and international organisations such as OECD, The EU-commission and a number of international and Danish NGO's.

"There is no doubt, that an environmental tax is an effective way to help improve the environment".

"In the coming years the pressure on the financing of the welfare state will increase, because of the demographic development and because of the internationalisation. Increased use of environmental taxes and a sound way to use the revenue together with increased taxation of land use and other immobile tax objects is from an efficient economical point of view a way to improve environment and the Danish tax system". (Translated from Danish)

Quotation from an article: Grøn skattereform og dobbelt dividende" by the director of the Danish Economic Council Peder Andersen, SØM, June 2002.

"Danish Prime Minister Anders Fogh Rasmussen (Liberal) will rather lower the income tax on the lowest incomes than remove the "middle" income tax.". (Translated from Danish)

Quotation from: www.Altinet.dk, 9.4.02

"By ensuring that environmental taxes integrate environmental concerns into sector policies, they can be important tools for sustainable development. This is clearly dependent on the effective implementation of the environmental tax".

Quotation from: "Environmental Signals 2002" European Environmental Agency, 2002

Danish Environmental damaging Subsidies, Rebates and Deductions

In Denmark as in other countries exist a number of subsidies that contribute to environmental damage. Such environmental perverse subsidies exists in different forms: Subsidies or minimum prices can prompt to an overuse of natural resources in production of goods by making it cheaper to harm the environment by using hazardous or scarce substances. Tax rebates for use of resources in environmental questionable behaviour will distort the environmental efficiency. Economical takeover from the State of the problems created by industrial behaviour excludes the internalisation of pollution in the price structure. State paid infrastructure can prompt to environmental questionable choices of transport. Generally lack of use of the price mechanism by using environmental related taxes will distort the choice in the market, so it will choose more environmental damaging products, production processes and behaviour.

A few examples of Danish environmental damaging subsidies is: Tax rebates for transport to and from job, Deduction in electricity tax for electrical heated houses, Carbon tax rebates for energy intensive industry, Grand fathering of Carbon allowances and more.

”Recent experiences in OECD countries indicate that the reform or removal of many of these subsidies may not only increase economic efficiency and reduce the burden on government budgets and consumers, but can also alleviate environmental pressures – resulting in so-called ”win-win-win” benefits.

Source: ”Environmentally Related Taxes in OECD Countries – Issues and Strategies”, OECD 2001

Distribution of the Danish Tax Revenue in 2000 in billion DKK.

Income tax for the State - "bottom" tax 7%	41,2
Income tax for the State - "Medium" tax 6%	12,9
Income tax for the State - "Top" tax 15%	12,8
Income taxes for communities	121,9
Income taxes for counties	56,9
Tax for ecclesiastical affairs	4,3
Employees "labour market" tax	57
Tax on private property	8,5
Tax on pensions savings	12,4
Company tax	30,6
Tax on shareholders earnings	6,4
Social contributions - employees	24,8
Social contributions - employers	4
Other taxes acc. to labour - employers	2,3
Tax on inheritance and gifts	3
Tax on private owned land	13,7
VAT	128,1
Border tax and import tax	2,3
Tax on certain transactions	9,1
Charges for Control, supervision and licens	0,2
Tax on energy use incl. Petrol and diesel	28,5
Transport taxes	22,8
Other environmental taxes	9,3
Tax on gambling	1,4
Excise duties incl. tax on tobacco and alcohol	14,8
Charge according to labour costs	3,3
Total revenue	632,5

** The lower bracket of the ordinary income tax is reduced to 5,5% in 2002 according to the Environmental tax reform from 1998

Source: Taken from various statements of the total tax revenue from the website of the Ministry of Taxation.

Danish Environmentally Related Taxes Do Work

Danish experiences show that environmental taxes do work. The use of Plastic bags and chlorinated solvents has been reduced remarkably after the implementation of a tax. Electric cables without PVC are now able to compete on prices concurring a substantial market share after the tax on PVC and Phthalates has increased the price for electric cables with PVC. The use of antibiotics as growth promoters has stopped due to a combination of a voluntary agreement and taxation. Leaded petrol almost disappeared from the market in just a few years because of the change of taxation in favour of non-leaded petrol. The high Danish registration tax implies, that smaller part a car ownership in Denmark than in our neighbour countries. The relatively low tax on petrol and diesel implies on the contrary, that many kilometres a driven in those cars. The Danish taxes on energy use have implied a massive insulating effort in Danish homes.

10.1. Environmental effectiveness

“Many environmentally related taxes have been assessed and found to be effective at reducing consumption/production of environmentally damaging products and activities, and contributing to resource protection. Environmentally related taxes introduce an incentive to change behaviour”.

“Although many environmentally harmful activities and products are relatively inelastically demanded, for example energy and private transportation, significant reductions in the consumption and production of the polluting good/activity can be expected after the implementation of a tax.

Environmentally related taxation can be used to accelerate the exit of products from the market, for example SO₂ taxation (high sulphur-content fuels) in Sweden, Norway and Finland and taxation on chlorinated solvents in Denmark. Even before actual implementation, the “threat” of, or the practical preparation of, a new tax (or a re-alignment of tax rates in existing taxes) can cause producers and users/ consumers to start changing their behaviour”.

Source: "Environmentally Related Taxes in OECD Countries – Issues and Strategies", OECD 2001

”Environmental Impacts

- **The environmental impacts of levies are positive**, but in most cases small relative to the problem being addressed.
- The effects of the levy are often limited because of the conservative nature of design.
- In cases where, over time, the scale of the levy has been increased, then the environmental effects also increase.
- The positive effect of levies on behavioural change is not always reflected in physical changes to the state of the environment.
- The case studies show **that even quite small changes in price/cost can send strong signals as to the desired behaviour**. This suggests that the environmental benefits are greater than would be estimated based on simple concerns on price impacts, given the levy’s additional role of raising awareness and offering a “moral” signal”.

Source: "Study on the Economic and Environmental Implications of the Use of Environmental Taxes and Charges in the European Union and its Member States", Ecotec Research and Consulting, prepared for the Commission, April 2001

Common benefits in Co-ordinated European Environmental Tax Reforms

There are many benefits related to at co-ordinated or dictated common contribution for increased use of economic instruments for environmental purposes – including environmental tax reforms ETR.

A co-ordinated European effort for environmental tax or budget reforms instead of national efforts will reduce the worries in industry for losing competitiveness and reduce the need for compensations, exemption and rebates, that reduces the total economic and environmental efficiency of the environmental taxation. United efforts will considerably increase possibilities for a tax change for industry leading to increased environmental benefits, reduced problems with cross-border trade and reduce the dependence in the EU from imported fossil fuels from relatively unstable countries in the Middle East and Russia.

”Industry is often resisting the implementation of environmental taxes fearing the loss of industrial competitiveness. This also explains why most environmental taxes is supplemented by profound exemptions. To overcome this fear for losing industrial competitiveness it is necessary to make a strategy on common basis”.

Quotation from: ”The Sixth Environment Action Programme of the European Community 2001-2010” KOM 82001) 31 Final, 24.1.2001

Such increased benefits by common European initiatives should not stop single countries in implementing national environmental tax or budget reform, because this continual can be done with clear benefits both for the environment and the State economy.

Environmental Taxes Will Increase the Development of Danish and European Environmental Friendly Technology

The use of economic instruments for environmental purposes is the environmental approach to the economical theory's attempt to find "The right prices". An environmental tax reform based on an adjustment of taxation from income taxes to taxation of the use of natural resources and pollution will therefore be a significant step against getting a more environmental balanced pricing structure for consumption and pollutive behaviour respecting the principle that "polluter pays principle".

Changing in the relative prices to benefit for products and productions methods with low use of natural resources, using renewables or recycled resources with a minimum of impact on environment will create an increased demand for new environmental friendly technology. The redirection thus will give economic surplus and increased possibilities for Danish industry because that a strengthened use of economic instruments in the form of a comprehensive environmental tax reform will implement a relatively big increase in the demand for new environmental friendly technology – and by doing that also give a strong incitement to Danish public and private research to follow the same direction.

To day it is clear that in the area of energy technology there will be a increasing market for energy saving technology and technology that it based on renewables. In the light of the continuous environmental problems in other areas such as the use of hazardous chemicals, agricultural technology among others the world markets demand for environmental technology will increase in other areas then energy as well.

The creation of a foresighted home market for environmental friendly technology will clearly create new export possibilities for Danish industry because that a home market with market possibilities for new technology is crucial for the economic benefits of any research effort.

To strengthen the effect of the price signals there should be implemented a strong public research effort and a systematic effort to remove other barriers than the price signals that are taking part in slowing down the development and implementation of environmental friendly technology.

"Fiscal incitements can put energy savings forward"

"More widely use of economical instruments and price incitements in both the energy and transport sector with a sufficient internalising of the external costs, will create an important incentive to shift to a more economical efficient environmental technology". (Translated from Danish)

Quotations from: "Miljøteknologi og bæredygtig udvikling", Report from the Commission KOM(2002) 122, Bruxelles den 13.03.2002

” In Denmark there are a lot of big and small companies, that concentrate on energy saving and environmental friendly products. For them there will be huge market possibilities when the carbon dioxide emission because of the Kyoto agreement shall be reduced in all countries”.

“All the way from the windmill industry over the production of and building elements to the Danish insulation solutions from Rockwool creates enormous exporting possibilities because of the Kyoto agreement and will create new jobs. An environmental and economical development in harmony”. (Translated from Danish)

Quotation from: Peter Molzen, Adm. Director in Rockwool A/S taken from a feature article in ” Politiken” 7.3.02

Environmental Taxes are Supplementary to Bans, Norms, Quotas and Standards

Many environmental problems are so serious that they primarily are reduced or removed by for example forbidding the use of harmful chemicals, by introducing minimum requirements for the use of energy by products and by introducing quotas for emission of pollution, so that the total amount is below the tolerability of Nature.

Bans, standards, norms and users quota normally have to be decided on the EU-level. This often takes a very long time and on several areas there membership countries does not have the same consciousness for the environment.

Environmental taxation can in theory be decided on the EU-level, but it must be done unanimous, which practically have been impossible to do. There is a possibility to reach agreement of a common minimum energy taxation directive in December 2002, but if so it will surely be very weak compromise.

On the contrary the EU treaty contains possibilities for the implementation of environmental taxes on a national basis, also in areas, where norms are harmonised. For example has Denmark introduced a tax on PVC that also includes packages even when it would not be allowed to ban PVC packages because of the harmonisation of norms in this area. In the same way it will be possible for Denmark to impose a tax on diesel driven vehicles without particle filters even when a legal requirement would oppose the EU Directive on that area.

Environmental taxation will serve at least to purposes:

1. Environmental taxation can be used to reduce consumption, pollution and activities that are damaging for the environment or human health to an acceptable level. Such environmental taxes will raise revenue that can be used as a basic financing of the public expenditures.
2. Environmental taxes can be imposed with a relatively fast increasing tax level and therefore prompt producers and consumers to change behaviour and very quickly phase out the actual problematic substance of problematic behaviour. The revenue from these environmental taxes will disappear when the use of the problematic substances stops as planned.

Environmental taxation will therefore make it attractive for producers to develop new products or production processes without using the actual substances and therefore both reduce the use of the problematic substances and make a ban easier to introduce. At the time as the environmental taxes will have a positive effect on the environment and the human health they will create revenue that can be used as a basic to finance the public expenditures and make a reduction of other taxes possible.

The most important argument for the use of economic instruments for environmental purposes is, that it is cheaper for the society when the households and the companies themselves decide how and where they want to put their effort for the change of behaviour. Both because it's actually those parts of society that have to change their behaviour toward a sustainable development, and it is them, that knows where it's done economical cheapest. You can for example choose to invest in a wood burning boiler, put more insulation on your loft and buy a wood burning oven or just to reduce the temperature in your house.

Report about "Green Market Economy"

The Danish Government has decided, that a report about "Environmental friendly Market Economy" has to be made.

"The report will do an analysis of the practical use of market based instruments for a better environment and industry's competitiveness in the green market". (Translated from Danish)
The Danish Ecological Council welcomes this initiative, even though the sole making of this report can be seen as a delaying element because there already exists several reports and surveys that recommends the use of economical instruments for environmental purposes and also documents the positive effects.

"In connection with the surveys of practical use of economic instruments the agreement between the to parties in the Government that:

"The Tax Stop is not hindering the necessary changes in taxes. If there are forcing reasons to implement or increase a tax or levy, it will happen in the way so that the increased revenue uncut will be used to reduce another tax. The same principle will be used if it of environmental reasons is desirable to implement or increase a environmental tax"

The report shall cover the following areas:

1. Possibilities and experiences with practical use of economic instruments as taxes, levies and subsidies, tradable pollution allowances and quotas, user charges, property rights, phase out of environmental damaging subsidies, rules for liability to pay compensation etc.
2. Potentials and experiences with technological innovation and the spread of environmental technological solutions together with initiatives that can stimulate and evolve the market so that the companies in a higher degree can use their environmental efforts as a positive signal in competition. Further on the practical use of measures that can promote environmental friendly and resource effective technologies and products.
3. The surveys shall also map the potentials in the environmental area and the necessity for partnerships public-private about initiatives that can put forward a technological development together with the function and the visibility of the market in the light of making it easier for consumers, investors and companies to act in a environmental and resource sound way.

On the basis of the three previous paragraphs there will if possible be recommendations as if to the future use of market based instruments and/or proposals to further surveys and more". (Translated from Danish)

Source: Terms of reference for the task of doing a report about "Green market economy", The Ministry for Environment, The Ministry for Economic and Business affairs, Copenhagen 22.2.02

"In the Government agreement the title "Green market economy" implies a reform of environmental policy for using market based regulations. For economists this means an environmental policy, that puts great weight on environmental taxes and other forms for market based solutions in the shape of tradable pollution allowances." (Translated from Danish)

Quotation from an article: Environmental Tax Reform and the Double Dividend" by Peder Andersen, Director of the Secretariat of the Danish Economical Council, SØM June 2002.

The Danish Ecological Councils example of a Possible Danish Tax Change:

The below example makes up a revenue neutral reform because all increase in revenues from environmental taxes and levies and savings in the public budget from the removal of environmental damaging subsidies is reversed to households, industry or clear environmental purposes.

The proposal is put in four parts:

1. A tax that will help reducing the main environmental problems and at the same time provides long-term revenue is as a primary principle placed first.
2. Examples of important environmental damaging subsidies, which must be phased out.
3. Possibilities for compensation or reversion of the increased revenue to households and industry.
4. Taxes and levy that is imposed on a sector only to finance an environmental effort and so will be reversed as subsidies to solve environmental problems in the same sector. These taxes and levies do not make revenue that can be used for the reducing of other taxes.

1: Proposals for Increased and New Environmental Related Taxes

Energy:

The Carbon tax is generally increased

The Global emission of Greenhouse gasses (GHG) is one of the Worlds main environmental problems – and will continue to be so after 2010, where the first weak steps to solve the problem in the form of the Kyoto agreement hopefully is taken.

Both in the period up to 2010 and after there is a need for very huge reductions of the global emission of GHGs of which CO₂ is the most important.

Denmark has in recognition of it's very huge emission of CO₂ per capita taken on a relatively huge reduction duty in the Kyoto agreement..

If the duty shall be fulfilled in an environmental honest way through real cuts in the CO₂ emission, Denmark have to make efforts for both energy savings, changes in the energy system to use less CO₂ intensive fuels and the use of renewables.

Many reports through time has pointed out that the low energy taxes in industry compared to household has made a situation, where the cheapest CO₂ reductions for the society as a whole is found in the companies. The best way to reach this is to adjust the price signal for energy use in industry so that more energy savings is done and the development and use of more renewables is more economically acceptable.

We propose that the economic incitement for lowering the emission of the GHG CO₂ is strengthened up till 2010 by implementing a double change in existing taxation. The tax should be index linked and should gradually be increases so that it is doubled in 2010.

The existing Carbon tax has been implemented as a "Package" consisting of both taxes and subsidies, so that industries competitiveness haven't been noticeable influenced. The proposed increase of the carbon tax can be done without harming the overall industrial competitiveness by using the same kind of rebates and reversions of revenues.

A doubling of the Carbon tax for companies from 100 DKK per tonne to 200 DKK per tonne until the year 2010 can be expected to induce a reduction in CO₂ emission of 10%. The Carbon tax in 2001 gave revenue of 4.8 billion DKK that fully is reversed to industry according to the companies' labour costs and by granting subsidies for energy saving measures. Doubling the Carbon tax will therefore raise supplementary revenue of 3.84 billion DKK (2001) in 2010.

If a system with tradable permits for CO₂ emission is coming through it will bring a change for the structure for Carbon taxation so that a greater increasing part of the revenue in the future will come from auctioning the CO₂ emission allowances to Danish companies. In this example we stick to the same revenue in the two situations to ensure the overall economic incitement for the companies to increase their energy efficiency and hereby reduce their emission of CO₂.

Rebates for Carbon tax are phased out for companies with low energy intensity

The Carbon tax for companies with light processes hasn't much influence for the total cost structure of these companies.

The basic tax per tonne emitted CO₂ is about 100 DKK. On this even companies with out energy intensive processes gets an automatic reduction in the tax and furthermore can make standard agreements about energy effective measures and hereby get even more reductions in the actual Carbon tax.

Typical this implies a very low influence from energy costs on the total costs and brings with it, that these companies don't focus on energy savings, Therefore a reduction of the rebates in the Carbon taxation will be an intelligent instrument to get carried out a number of the energy savings that is both economically sound for the companies and for the society.

The phase out of the rebates in Carbon taxes will implement higher costs for energy for these companies without energy intensive processes without reducing their competitiveness overall implementing a bigger focus on energy savings thus implement, that energy savings or – changes will be economic sound as well.

A tax of 100 DKK per tonne in stead of the actual tax of about 65 DKK per tonne for companies without energy intensive processes where agreements of energy savings is made will create a revenue of 1.8 billion DKK to be used for reducing labour costs, company taxes or income taxes for companies.

Rebates for the CO₂ Tax is Reduces for Energy Intensive Companies

The Danish energy intensive companies pays a very low carbon tax because that they can get rebates up to 97% of the carbon tax by making energy saving agreements with the Danish Energy Agency.

This big rebates ensures not just that the energy intensive companies don't loose international competitiveness but it also ensures that Danish energy intensive companies are secured an competitive advantage because of the German and British Carbon taxes now are higher for energy intensive companies than for Danish.

It is therefore important – seen in the light of the Danish Kyoto obligations and the conclusions of the Green book on Energy supply security from the EU Commission – to prepare Denmark for a common necessary solution in longer terms and hereby secure that Danish companies are in the best part in the energy effective development.

There is now space for an increase of the Carbon tax for energy intensive companies – not just by being included in the proposed doubling of the Carbon tax level but also by implementing an actual reduction of the rebate possibilities from 97% to 91% over a period of 8 years leading to a tripling of the lowest payable Carbon taxes.

Such a tripling is estimated to make the companies reduce their CO₂ emission by 5%. This will make the expected extra revenue up to about 2 billion DKK that can be used for reduction of the companies' labour costs or to be reversed according to the labour costs in all companies.

If a system with tradable permits for CO₂ emission is coming through it will bring a change for the structure for Carbon taxation so that a greater increasing part of the revenue in the future will come from auctioning the CO₂ emission allowances to Danish companies. In this example we stick to the same revenue in the two situations to ensure the overall economic incitement for the companies to increase their energy efficiency and hereby reduce their emission of CO₂.

Increase of Energy tax for households

Reduction of energy use is essential in all countries because a reduced energy consumption will improve the environment in general and reduce climate changes on one side and on the other it will reduce the use of natural resources for the production and consumption of products and services because overuse of energy normally also implies overuse of resources.

Many reports and surveys have pointed out that there still are very big reductions to be made on private consumption of electricity. They also state that these energy savings are best and cheapest obtained by making it more expensive to overuse energy.

This means also that eventually short lasting or longer lasting reductions in international energy prices must be responded by higher taxes so that households and companies are not prompted to abort the energy savings again.

We therefore propose that the electricity tax for households from now on is index regulated and gradually is increased until 2010 to the double of today (2001).

Such an increase will profoundly influence the households and will give a noticeable revenue that can be used for a visible reduction of income taxes, preferably by increasing the lower tax threshold and reducing the low bracket of the ordinary income tax so that the income distribution will not be affected.

An increase in electricity taxes will also influence the companies because they have to pay the full tax for their use of electricity for non-production based purposes such as lightning in offices and so on. The influence is marginal compared with the other costs in the companies but might lead to more consideration whether to focus more on energy savings away from the production processes.

The proposed increase of energy taxes on electricity for households creates the biggest environmental effect at the lowest costs if it followed by a similar increase in energy taxation for companies.

Energy taxes for electricity used in households gave in 2000 revenue of 7.8 billion DKK. The increased energy tax will then give supplementary revenue of about 6.3 billion DKK in 2010 if we expect a fall in electricity use of 10% following the increased taxation.

Increased energy taxation for oil, coal and gas for households

It is still possible to save lots of energy on heating in private houses even though Denmark is a country with or rather high insulation standards. The high insulation standards are a result from early-implemented Danish energy taxes followed by subsidies to improve the insulation in private houses and higher legal demands for insulation standards in new houses.

On top of that it is still clearer that the time is over where it was possible to find and exploit new oil resources in a speed that could match the still fast growing consumption.

”Around the year 2010 the world total production of oil will start sinking. That was the final conclusive remark from the World's first international conference about the diminishing oil resources. At the same time the consumption of oil is still increasing.

- The World has to get wiser very fast, the energy adviser of George Bush, Matthew Fields said at the conference. ” (Translated from Swedish)

”Miljöaktuellt” 2/2002, 5.6.02 – *The Magazine of the Swedish Environment Protection Agency*

If further energy savings are to be obtained in the existing stock of houses Building owner have to be even more prompted to build even more energy effective houses than to day and to obtain that there is a need of an increase of energy taxes for house heating.

To balance the energy market for heating private houses (and company building without energy intensive processes) we propose, that the energy tax for district heating from co generative plants is increased correspondingly, thus respecting that cogeneration of electricity and heat is more environmental friendly than heating of houses simply by burning oil og natural gas. The increase of taxes for district heating shall therefore be adjusted so that it still will be economically preferably to change heating source from electricity, oil and gas over to district heating based on cogeneration or renewables.

We propose that the energy tax for oil, coal and natural gas gradually is increased from about 2 DKK per litre oil / per m³ natural gas until 4 DKK I 2010 and this is followed by implementing a index based price regulation.

In the estimate of the revenue we do not take a change between the various ways of heating into consideration, expecting that the overall energy taxation on all energy sources will mean that these heating changes only will affect the total revenue very slightly.

We do take into consideration that this increase of energy taxes will provide a 10% reduction of heat consumption making up total supplementary revenue in 2010 of 8.5 billion DKK in fixed 2001 prices.

Tax on Carbon Emissions from "flaring" from the North Sea Oil rigs

CO₂ emission from oil and gas rigs in the Danish part of the North Sea makes up to a considerable percent of the total Danish CO₂ emissions.

If the flaring of "wasteful" oil and gas from the Danish rigs is compared to the flaring from the Norwegian flaring, it is found, that the Norwegians only flare half as much as the Danes per produced oil or gas unit.

Much of the explanation of this is found in the fact that Norwegian rigs for years has had to pay a tax per oil unit for such flaring leading to a big economical interests in reducing the flaring to a minimum to save costs (and to improve the environment).

If a corresponding tax of 300 DKK/tonne CO₂ is implemented on the Danish flaring from the rigs in the Danish part of the North Sea it must be expected that the flaring will be reduced by 40% leading to a revenue of about 300 million DKK.

The tax should implemented with its full amount as soon as possible create maximum effect.

Transport:

Increase taxes on Petrol and diesel / tax per kilometre / road pricing

Transport is an area, where environmental damage is grower every year. There a successes with reducing transports problem with emission of e.g. NO_x, SO₂, CO and Lead. But on the contrary the problems with CO₂ emissions and ultra fine particles are still growing bigger. The existing tax on petrol is about 4 DKK per litre, leading to a total consumer price for the moment between 7.80 and 8.30 DKK. Diesel price is somewhat lower. These two taxes together amounts for 9.88 billion DKK in 2000.

Even with the same numbers of driven kilometres as today (2001) there will be substantial savings in the use of fossil fuels, if consumers consequently always asked for cars with low fuel consumption per kilometre.

A noticeable increase in taxes will in that way prompt the coming car buyers to choose cars with low use of fossil fuels or cars that uses other forms of propellants. By using the same means car owners will be prompted to reconsider if it is necessary to use the car for every trip.

The Danish Ecological Council therefore proposes a gradual increase of taxes on petrol and diesel following the German increase so that the tax in 2010 will have gone up with 2,00 DKK in fixed prices.

As a supplement to the increase in fuel taxes there should be introduced a kilometre based tax. The tax rates per kilometre have to be differentiated according to the environmental data for each car type. In that way a car with a very low need for fuel will pay less per kilometre than a car with a medium or high use of fuel per kilometre.

The kilometre tax should also include a very low rate for zero emission cars because even when the cars do not emit any harmful substances there are other environmental problems just by driving the car.

An decision of a kilometre tax can be agreed on and implemented very fast and will not increase the border shopping problems, which can be expected to be an unwanted result of an increase of fuels taxes if Denmark and Germany and maybe Sweden don't increase fuel taxation equally.

When the technology is fully developed and tested the kilometre tax can be replaced by a "road-pricing" system based on satellite information about the geographical movements of the car. Road-pricing can beside the mere kilometre tax also be differentiated so that it will provide incitements to avoid driving in rush hours and in areas with high population density by using a differentiation in kilometre price depending on time and place for the actual driving.

If a kilometre tax should have substantial effect on the amount of driven kilometres and on the choice of energy efficient vehicles it must have a noticeable rate.

The Danish Ecological Council takes in to consideration, that a average cars uses petrol for about 0.67 DKK per kilometre. We therefore proposes an additional tax rate on top of the payment for petrol of a starting 0.10 DKK per driven kilometre ending in 2010 with 0.30 DKK in fixed prices for an average car (13 km per litre). This rate has to be differentiated so that more energy efficient cars will pay a reduced rate and less energy efficient cars will pay a higher rate per driven kilometre.

By increasing the fuel price with 2 DKK per litre – corresponding to an increase of about 30% - we expect that the Danes will drive fewer kilometres in cars and choose more energy efficient cars. This means that the total sold amount of transport fuels will drop by 9% in 2010 compared to 2001. For this calculation we use the normally respected elasticity of minus 30, which means that when prices increase by 100% the consumption will drop by 30%.

The introduction of a kilometre tax on average 0.30 DKK per kilometre corresponding to an increase in fuel prices of 3.50 DKK per litre in 2010 we expect a supplementary reduction of car driving with 12% in 2010 compared with 2001.

An increase in petrol tax rates following the German tax increase will raise revenue of 1.0 billion DKK in 2010 in fixed prices.

An implementation of a kilometre tax will be calculated on the amount of driven kilometres of 45 billion kilometres a year raise an additional revenue of 10.8 DKK in 2010 in fixed prices.

The increased revenue from this increased fuel and kilometre taxes can be reversed to households by reducing income taxes and increasing the lower tax threshold and reversed to companies by introducing of subsidy according to the companies labour costs (as is done with the most of the revenue from the carbon tax).

Taxing Fuels for Airplanes, Ferries and other Ships

The present and fast growing aviation is one of the big environmental problems especially contributing to climate change problems. Also ferry routes and especially the rather new tendency to use high-speed ferries causes additional CO₂ emissions by having a very high rate of fuel use per passenger kilometre.

For both types of transport it is a fact, that according to EU-rules and international agreements it is not allowed to tax fuel used by aeroplanes and ferries. The only possibility for some kind of environmental taxation is therefore to introduce passenger taxes or airport taxes, which is done in many countries also in Denmark.

This situation seems now to have a change to be changed, because the proposal for a directive on common minimum energy taxes in EU from 1997 includes an opening for the adoption of national taxation of fuel used in aeroplanes and ferries or to extend this possibility to flights inside EU according to bilateral agreements. The proposal thus do not open for environmental taxes on fuel used for flights in and out of the EU. For including these flights it is still necessary to act in international forums to obtain a change in international agreements. The proposal for a directive on minimum energy taxation has been blocked since the introduction especially by Spain. The proposal saw however a break through at the Barcelona summit in March 2002, where the principles in the proposal was adopted by the council and the full proposal was sent to the council of finance ministers to finish the negotiations so that the proposal could be finally adopted in Copenhagen in December 2002.

As a starting point environmental taxes on fuel for aeroplanes should only be one part of a "package" that also should contain demands to aeroplane producers to develop planes with lower emission of CO₂ and to drop development of highly environmental damaging types of planes such as subsonic planes and planes that go higher and faster than the existing types.

Furthermore it's a special problem, that freight transported internationally by plane contributes considerably less to cover the total costs than passengers do. The problem is that the growth in airfreight transport is noticeable higher than growth in passengers, so that the total growth (before 11.th September) is about 5% annual.

The big problems with a fast growing aviation sector is obvious, though the opinion about how big an the effect environmental taxes will have is divided. Everybody though agrees, that environmental taxes will have some effect as an effective instrument sort out the passengers, that doesn't have "basic need" for air transport, but only uses air transport because of the very low prices. Environmental taxes will also create incentives to increase the load factor and as a next step to create incentive for the development of more fuel-efficient planes.

A good estimate for the rate of an environmental tax would be from 0,8 -1,8 US\$ per kilo air fuel if the goal just is to stabilise the CO₂ emission from aviation at the present level where air transport is growing with an annual 5% and the fuel use is growing with 3% (before 11.th September).

Is this rate for tax on air fuel compared to the minimum taxation in the EU on diesel for transport use it is at an average of about 0,3 US\$ per kilo, Though some countries has a substantial higher tax rate e.g. UK with 0,87 US\$ per kilo.

Thus the burning of fossil fuels in planes in great heights is contributing far more (estimated 2 - 4 times) to climate change than the burning of fossil fuels in trucks on the ground. If it's taken into consideration that an equal tax for transport in air and on the ground in respect of the damaging effects should be implemented, then the taxation of air fuel should be considerable higher than the tax rate for diesel for road transport.

In our example for an environmental budget reform we use a tax rate for air fuel on 0,5 US\$ per kilo in fixed prices in 2010, which is higher than the EU-minimum for trucks but lower than the diesel tax rate in many countries. This rate is not enough if the goal is as modest as stabilising the fuel use in aviation, which indicates clearly that the air fuel tax must be increased considerably also after 2010.

In 2000 there were sold a total of 823.000 tons jet fuel in Denmark, only 6% of this for domestic flights.

If we estimate that the air fuel taxation will reduce the annual growth in aviation to 1½%, which adds up to a total growth by 16% in 2010, compared to 2001. This will raise revenue of an annual 3.8 billion DKK in fixed prices in 2010. If no tax is introduced the prognoses foresees an annual growth of 3%, which adds up to 34% in 10 years.

The aviation sector is also subsidised in more than one way because of directly support for the development and production of aeroplanes (e.g. through financing the development of military planes), by subsidising directly producers of aeroplanes, which is accelerated after the 11th September and through subsidising the constructing of airports and the matching infrastructure. Finally aviation is subsidised by accepting that business s paying very expensive tickets and getting bonuses which both implies possibilities for cheap holiday travels by plane.

All these environmental harmful subsidies should be phased out, which in our example is estimated to a total saving for the Danish State of annual 1 billion DKK in 2010.

Exactly the same kinds of environmental harmful problems exist for international navigation, where it too not is allowed to introduce environmental taxes corresponding to navigation's contribution to climate change problems. In this sector environmental tax rates should be a little lower than taxes on diesel for road transport, because the road transport creates more climate change contributions, than navigation.

We haven't calculated this into our example but estimate annual revenue of 500 million DKK in 2010.

Finally it is important to state that both types of environmental taxes have as a minimum to be implemented at EU-level. And that taxes on international aviation and international navigation requires international agreements. The examples of revenues will only be created if international changes can be agreed on - without these international agreements the taxes will not be allowed and an theoretical Danish interminable tax will have the effect, that planes and ships will tank fuel in countries without taxes.

Taking into consideration the huge and still growing evidence of the damaging of the environment a removal of subsidies to aviation and the introducing of international agreed minimum taxes on air fuel should be negotiated as soon as possible and the latest together with the agreed renegotiations of the Kyoto protocol for the years after 2008-2010. The rates of this negotiated tax have to be of considerable levels as to take part in the aim of the Kyoto protocol to stabilise the percentage of atmospheric CO₂ at the double of pre-industrial level.

”Despite the substantial climate effects, the CO₂ emissions of international aviation are not subject to any quantitative obligations. They are not included in national level emissions inventories and thus do not fall within the scope of the provisions of the Kyoto Protocol. The Council thus finds an alarming regulatory gap relating to the use of the atmosphere by international aviation. For reasons of climate protection, this gap needs to be closed as a matter of urgency.

The Council recommends to the German government that this regulatory gap should be closed by introducing of user charge. Charging the use of airspace can make a valuable contribution to climate protection because it generates both an environment-related incentive effect and financial resources. The environment-related effect has two leverage aspects: First, it is to be expected that user charges on aviation will drive air fares upwards, thus dampening the growth in demand for air transport. Second, user charges can create incentives to modify aircraft, engines, air routes etc. such that these are associated with least possible emissions”.

Quotation from: "Charging the Use of Global Commons", German Advisory Council on Global Change, January 2002

Broaden the levels in the "Annual Ownership tax"

A slow environmental improvement in the energy efficiency of new cars is going on. This means that new cars/trucks/busses generally drives noticeable more kilometres per litre petrol or diesel.

Both private persons and companies are prompted to buy new energy effective vehicles by charging a annual environmental based car ownership tax that is progressive according to the car's use of petrol or diesel. Despite this urge there's still a tendency to invest in bigger and heavier cars, resulting in a too low increase in the average energy effectivity – seen in connection with the huge environmental problems that is caused by a overuse of fossil fuels. On top of that these bigger cars do have a tendency to use more and more energy having extra equipment that is not included in the car's energy efficiency data.

The Danish Ecological Council proposes therefore that the stepwise rates in the annual ownership tax do change three steps corresponding to an increase in fuel efficiency of 5 km/litre. The best and therefore also the cheapest car in annual taxation should in 2010 the latest go 25 km/litre instead of 20 km/litre in 2001. And the best and cheapest diesel car in annual taxation should go 37 km/litre in 2010 instead of 32 km/litre in 2001.

If steps are changed in 2003, 2006 and 2009 and new steps with higher rates for the low energy efficient cars are implemented, the average car will have to go 5 km longer per litre fuel in 2009 to avoid an average increase in annual ownership taxation

The annual ownership tax raises in 2001 revenue of almost 7 billion DKK. With the implementation of three more steps it is estimated, that this will increase the revenue with 3 billion DKK in fixed prices, which is reduced to 2 billion DKK annually because of an expected increased energy efficiency of 10% because of the adjustments of steps and rates.

Registration Duty is changes so that it in future is graduates according to the environmental efficiency leading to at rise in registration duty for the most environmental damaging cars.

Registration duties are high in Denmark, which have implied that the number of cars per 1000 inhabitants in Denmark is relatively low in comparison with the other EU countries.

This fact has a noticeable environmental effect to keep down the daily mileage, because several surveys show that families with cars do transport themselves much longer each day than families with out cars. Furthermore the surveys points out that a huge change in the families transportation habit occurs when the first car is bought.

Considering this there are good environmental reasons to maintain a high registration duty on cars and other vehicles.

The registration duty is fixed as a percentage of the price of the car. This means that the registration duty is almost indexed according to the prices of the cars. This again means that the registration duty over the years accounts for a still smaller part of a Danish car owner family's budget, because that the growth in real income has been higher than the growth in price index.

The registration duty can be called an environmental related tax because of the environmental coincidence, that more expensive cars are bigger and heavier and therefore also has the worst energy efficiency. This is not the fact for the most energy effective cars or cars using other propellants than fossil fuels. These (few) types of cars are for a certain period exempted for registration duty or gets very big rebates.

The Danish Ecological Council proposes, that a new system for the registration duty is developed so that cars with high emission of CO₂, NO_x and particles will face a raise in registration duty whilst environmental more capable cars will stay on today's rates.

We expect that the increased registration duty on cars with high environmental damaging emission initially will raise additional revenue of 2 billion DKK in fixed prices in 2010. This is reduced to 1 billion DKK because of an estimated reduction of the size of new cars and a reduction in environmental damaging emissions.

Chemicals:

Hazardous and Unwanted Chemicals are Taxed

Hazardous chemicals are a considerably threat to the environment and to human health.

The use of hazardous chemicals should as a principal rule be banned as soon as possible.

Many countries has adopted the so-called generation target, where it is stated that all dangerous chemicals shall be phased out before 2020.

However such bans are very slow, troublesome and complicated to achieve and have as a minimum to be adopted by the EU on the basis of thorough surveys. If the generation target is going to stand a real change to be reality it is necessary to use all existing means.

The introduction of Environmental related taxes on hazardous chemicals is an effective mean that goes nicely together with the generation target and the gradual but slow implementation of bans.

Use of environmental taxes will inflict the companies to gradually reduce the use of hazardous chemicals in existing processes and products. It will strengthen the economic and political pressure to develop new processes and products that is not using or containing hazardous chemicals.

This also improves the possibility for introduction of bans because the political will to introduce the bans is far higher when alternative processes and products are developed and used. Furthermore the introduction of environmental taxes will make products that contain hazardous chemicals more expensive so that consumers will demand alternative and relatively cheaper products simply out of economical reasons.

”Conversely, economic disincentives could be used to discourage industry from marketing chemicals with unacceptable hazards. The taxation of chemicals considered by governments to be of concern would provide an incentive for a company to decrease production of the taxed chemical and shift to making alternatives that are not taxed. The resulting difference in price would encourage consumers to select cheaper alternatives that are more environmentally friendly”.

Source: “OECD Environmental Outlook 2001”, page 231, OECD, 2001

The Danish Ecological Council therefore proposes, that the chemicals listed on the Danish Environmental Protection Agency’s list of unwanted chemicals is taxed according to their actual potential for damaging the environment and the human health.

All together we propose in this example that taxes are implemented in 2010 in an extent that without reduction in use would have raised revenue of 6 billion DKK in fixed prices.

This taxation will however create a rather big change in behaviour, which get us to estimate that the use of taxed hazardous chemicals will be halved because of the taxation. This results in extra revenue of 3 billion DKK in fixed prices in 2010.

Increase of tax on Chlorinated Solvents

We do here present an example of chlorinated solvents as an example of the effects from environmental related taxes on unwanted chemicals

Chlorinated solvents are dangerous to human health and are under serious suspicion of having cancer-causing effects and on top of that there are a big threat for the Danish ground water reservoirs, which has lead to several closings of waterworks in the recent years.

In 1996 an environmental related tax of 2 DKK per kilo of the three chlorinated solvents was introduced. This was among other things because it was feared that the ban on CFC’s would lead to an increased use of chlorinated solvents because of their ability to substitute CFC for some uses.

This rather small tax cause that the actual use of tri- and tetrachlorethylene fell drastically and that dichloromethane disappeared from the market.

The environmental tax has recently been increased to 5 DKK per kilo.

The Danish Ecological Council however sees strong reasons for a continued effort to reduce the use of the two remaining chlorinated solvents because of their high environmental damaging effects. We propose that the environmental tax is increased from 5 to 20 DKK in 2010 correspondingly with an increased effort to get the actual use of especially trichlorethylene banned as soon as possible.

As a result of the increase of the tax we do expect the used amount to fall with 60% from 2001 to 2010. Taking the reduced use into consideration we estimate increased revenue from 2 million DKK in 2001 to 3 million DKK in 2010 in fixed prices.

The proposed increase should be seen in the light of the Norwegian tax on chlorinated solvents of 50 NKK per kilo and the fact that the use of trichlorethylene is banned in Sweden.

Increase Taxation of PVC and Phthalates

The widespread use of PVC is still creating problems for the disposal of waste. PVC in the incineration plants with its content and chlorine is an important factor both for the formation of the very poisonous chemical Dioxin and for the formation of big amounts of waste because of the necessary adding of lime for reducing hydrochloric acid in the smoke.

Furthermore the use of softened PVC is an environmental problem for consumers because that the most often used "softeners" are Phthalates, that has hormone-like effects and are causing changing in the genes etc. Thus the use of PVC softened with phthalates is banned in toys for children under the age of three.

There are therefore every reason to try and reduce the use of PVC end especially phthalates as much as possible by introducing bans norms and taxes.

At present the taxes is fixed from a starting point of 2 DKK/kg PVC and 7 DKK per kg phthalates. The rates have not been increased from 2001 to 2002 and by such not price indexed.

We propose that the present rates from now on is indexed and that the rates gradually are increase to the double of to day in 2010.

This will create additional revenue in our example of about 50 million DKK, if a reduction in use of 20% in 2010 is taken into the calculation.

Increase Taxation of Pesticides

Even though Denmark has reduced the use of pesticides in the recent decades, the remaining use is still too much – also seen compared with the plans of action and the agreements that has been made with agriculture in earlier plans. There are need for additional efforts that could comprehend both bans of the worst pesticides, construction of pesticides free zones, bans of using pesticides in private gardens and an increased environmental taxation of agricultural use of pesticides.

We propose that the taxation on all kind of pesticides is gradually increased so that the taxes in 2010 will be 50% higher than to day in fixed prices.

Environmental taxes on pesticides are collected as a fixed percentage of the recommended price, differentiated for use and by that also poisonous effect. These taxes are in that way index regulated.

We expect a fall in use of pesticides in 2010 of 10% compared to today as a result of the tax increase and the complementary relatively reduced price for alternative methods in agriculture. This can all in all be estimated to additional revenue of 130 million DKK in fixed prices.

Tax the use of Pressure-treated wood and timber

Pressure-treated wood and timber are still a threat to environment even though the worst and most hazardous chemicals such as Arsen and Creosot are now banned for use in Denmark. For example it is still allowed to import creosote-treated wood. To day the high-pressure treatment contains mostly different compositions of Copper, Chrome and Biocides. All three chemical substances are hazardous to the environment and human health both in production, use and disposal.

However new treatment are being developed for example the heat treatment of new wood so that the same or higher durability for the wood is obtained without using any hazardous chemicals at all. Another way to increase durability is to use wood from trees that actually is impregnate from nature's hand.

A considerably problem for the spreading of the habit to use wood that has a high durability by nature or by methods without using harmful substances is that such wood is still more expensive than traditional CCA-pressure-treated wood.

Every experience shows that the introduction of a tax that shifts the economic benefits from the environmental harmful product to the environmental friendly product. A good example is

the change from leaded to unleaded petrol that happened in a few years just by changing the price signal a little bit.

For Pressure-treated wood a survey from September 2001 "Analysis of the Possibilities for increased use of tax regulation of chemicals" proposes a tax rate on 20% of the price for the wood, which correspond to 500 DKK per m³. This rate is estimated to raise additional revenue of 154 million DKK in the first year.

It must though be expected that the introduction of an environmental tax of that rate will imply a total shift away from today pressure methods using hazardous chemicals long before 2010. This is why we don't estimate any additional revenue from this tax in 2010.

Resources:

Increase Tax on Extraction of Aggregates

The Danish aggregate tax is present 5 DKK per ton – and has not been indexed for some years now. The aggregate tax is levied on a broad range of raw materials reaching from sand and stone, chalk, lime and clay to sphagnum and mould. Also imported and processed products such as granite, bricks and marble are taxed.

Some Danish raw materials – and maybe especially the occurrence of clay, sand and gravel is still diminishing, which makes it obvious to create incentives for a higher percentage of saving and reusing of these materials.

Thus an increase of the aggregates tax cannot be expected to very much effect for changes the use towards a considerably lowered extraction – apart from some optimising of the use and a small increase in reuse. The aggregate tax must be seen as a payment to the state for using not renewable Danish natural resources.

The Danish Ecological Council proposes that the aggregates tax from now on will be indexed and increased to the double in fixed prices gradually until 2010. By doing this we expect a reduction of the use of natural resources of 10% and an annual revenue for the state of 140 million DKK in 2010 that can be used to lower other taxes.

Increase Tax on Extraction of Oil and Natural Gas from the Danish Part of the North Sea

Because of the existing Danish concession agreements with Danish and foreign oil extraction companies in the North Sea they pay a very low extraction tax to the Danish state. With the present oil price – and especially seen in the light of the oil prices in 200 and 2001 – this creates big profits to the extracting companies – and by doing this it also incites companies to increase the rate of extraction to the disadvantage of a long-sighted Danish energy supply strategy and also reducing other incentives for energy savings thus contributing to climate change.

The existing payments for concessions and taxes on oil and gas extraction amounted in 2000 to 7.4 billion DKK.

This amount is estimated to be increased with 50% so that the profit from oil and gas extraction was divided more fairly so that the Danish state and with that the society did get more benefit out of the Danish oil reserves.

An increase with 50% will create a revenue for the state of additional annual 3.7 billion in fixed prices, which can be used for public expenditure and thus make an reduction in income taxes possible.

”It can be argued that the state should have as big a part as possible of the basic interests from carbon extractions. Carbon occurrence in the Danish underground belongs as a starting point to the state in opposition to other industry, where production machinery as a starting point is owned by citizens”.

”Taking a hypothetical view that the neutral carbon extraction tax has been introduced in 1982, it can with great insecurity and assuming the same historic investments be calculated, that the state would have had an additional revenue of annually 1 billion DKK in fixed 2001 prices. Especially in 2000 where a high basic interests rate was realised because of increasing oil price and production the revenue for the state would have been about 5 DKK higher. For the period seen as a whole the additional revenue would have been 14 billion DKK assuming the same production and more than 15 billion DKK by taken a smaller distortion loss into account. 1982 and 1983 is not taken into the calculation because of lack in formations. It have to be underlined, that this is very insecure and is only done to enlighten the effects of the neutral carbon extraction tax.” (Translated from Danish)

Quotations from " Rapport fra kulbrintebeskatningsudvalget", Ministry of Taxation, Oktober 2001

Various areas:

Increase Tax on Waste Water

To prompt the wastewater treatment plants to reduce the outlets of the nutrients nitrogen and phosphate to recipients outlets are taxes at present rates of 20 DKK/kilo total nitrogen and 110 DKK/ Total Phosphor in 2001/2002.

These rates of taxation are very low seen in the light of the much higher revenue from the water tax and should be increased noticeably – for the purpose of creating additional economic incentives for reduction of the outlet of nutrients.

We therefore propose a gradual increase of tax rates so that they are increased 200% in fixed priced in 2010. In this example we estimate that this will imply a reduction of the outlet of 10% in comparison with to day. In 2002 the wastewater taxes created revenue of 280 million DKK. The tax increase in our proposal will create additional revenue of 476 million DKK in fixed priced in 2010.

Tax Advertising

In Denmark we have seen an enormous growth in the amount of all kind of advertising. To day about 2 billions of brochures, advertising papers and flyers are distributed each year in Denmark. This number corresponds to 10.000 tonnes and is about 500 single advertising to each household, which again corresponds to 40 kg annual per household. The amount has been doubled in the last 10 years and if nothing is done this enormous growth will probably continue.

The Danish Ecological Council proposes to try and stop this growth by introducing an environmental tax that covers all kind of advertising – also using electronic mediums, because of

the fact that advertising not only creates waste of paper but also is an important factor in the current use and dispose culture.

Advertising has especially three different environmental harmful functions. A lot of energy and water and chemicals are used and wastewater is produced in the production of advertising on paper. Advertising makes us buy more than we need and often more than we intend to buy. Advertising makes us go around in cars to buy the stuff that's advertised.

We propose that advertising distributed to households is taxed with a rate of 2 DKK per 100 grams in price indexed 2001 prices. On advertisements and electronically advertising should a tax of 20% be paid of the price, that the advertising companies pays.

We propose that a part of the revenue from the advertising tax is reversed to the written press as well as to the electronically medias, but it have to be a subsidy of journalistic production. Therefore we propose that the reversion of the additional revenue should be done according to the percentage of editorial substance combined with the number of copies.

We don't want to harm Public education and information or social organisations like informational broadcasts or advertisements for Red Cross or Amnesty International. Therefore should these kinds of "advertising" be excepted from the tax.

In our example we construct the rate of the advertising tax to imply a reduction in the amount of advertising of 10% in 2010. This can be estimated to produce additional revenue of about 5 billion DKK in 2010 of which 1 billion DKK is proposed for reversion for subsidising the above-mentioned journalistic purposes.

"There is need to find measures that will shift the focus of advertising towards products and services that are socially and environmentally sound and are produced in a sustainable way, at the expense of advertising that leads to the consumption of products and services that threaten human health, the environment, social equity and human rights".

Source: "Report from Regional Roundtable for Europe and North America – 2002 World Summit on Sustainable Development". June 2001

Tax on Waste is Increased

The amount of waste has faced a substantial growth in many years in Denmark in spite of campaign for the opposite and an increased effort for recycling. This tendency is even maintained despite increased tax on waste disposal that seems only to have reduced the growth a little bit.

If the amounts of waste should actually fall in the future there is a need of stronger incentives for producers to produce products and goods with a greater capability for recycling and to produce by using fewer resources and less environmental harmful ingredients. To create these incentives many different means must be taken into consideration.

One of the most important means is to introduce a substantial increase of the environmental taxation on waste disposal. This will make the disposal of the used products more expensive and by doing this it will force producers to consider the disposal of produced goods more. Furthermore a differentiation of the waste tax rates must be considered according to the effects on the environment, including waste of resources, ability of recycling of incineration.

We propose in the example that waste disposal taxes generally are increased to the double in 2010 compared to today and is indexed. The proposed differentiation must then be done revenue neutral to the doubled rates.

By doing this we estimate a reduction in waste disposal of 15% compared to what would else be expected. This will create an additional revenue of 0.7 billion DKK in fixed prices in 2010. (From 1 billion DKK in 2001 to 1.7 billion DKK in 2010).

Industry Pays the Full Tax on Tapped Water

Households pay a tax on tapped water of 5 DKK per m³. This tax has not been indexed for a few years.

Waterworks do pay the same rate as households for the amount of "leaked" water that exceeds 10%. The leaked water is measured as the difference between the produced water and the amount of water, that is actually paid for by consumers.

For the most of industry gets the payment for water refunded and is actually not paying the tax on tapped water.

The environmental tax on tapped water is just a minor part of the total price for tapped water and for the wastewater treatment that often amount about 30 – 35 DKK per m³. Especially the price of the wastewater treatment differs very much from one local community to another. The total price for water, tax and wastewater treatment is an effective incitement for water saving behaviour.

If the possibility for refunding the water tax is removed from industry they will be even more prompted to implement actions that will reduce the use of drinking water either just by further savings or by installation of reuse systems. By setting the water tax to the same rate for both households and industry it is estimated that this will lead to more economic efficient water saving efforts.

We propose in this example that the environmental tax on tapped water from now on is indexed and that it covers all industry.

Industry in Denmark uses annually about 150 million m³. By broadening the water tax to all industry we estimate a reduction in water use for industry of 10%. This will raise additional revenue of 675 million DKK in fixed prices in 2010.

It should though be considered if an environmental tax on tapped water should have the same rate despite the consumers geographic location. The water resources is very different across the country and the necessity for water use reduction is necessary some places and not other places. And it should also be considered if some industrial sectors with a production that at the same time uses a lot of water and produces goods, that is exposed to international competition should be "protected" either by an exception from the tax, by sectorial reversion or by introducing a "border-tax" system, where Danish produced exported products gets the tax refunded and imported products pays the tax.

It could also be considered to reverse the additional revenue from the full water tax on industry according to the companies' labour costs using the same principles from the reversion of the carbon tax. Industry could be divided in groups and inside these "water use groups" all the tax from these companies could be reversed.

2: Phase Out of Environmental Harmful Subsidies

Phase out transport tax deductions

"The tax benefits from the tax rebates for long transports between home and job does not especially benefit rural districts or low income groups.

- People especially obtain the transportation tax deduction if they are from Zealand and situated in a big circle around the Copenhagen area. Also people from Lolland-Falster and outside the big cities in Jutland and on Funen do benefit from the transport tax deduction while people situated in the rest of Denmark get far less benefits. This fact is in opposition to the normal statement that this transportation tax deduction is especially important for inhabitants in rural areas.
- A bigger percentage of inhabitants in rural areas than in towns gets the transportation tax deduction. But also for residents in rural areas the transportation tax deductions gives more benefits for residents in rural communities on Zealand than for residents in (more) rural communities in Jutland and Funen.
- The more you earn the bigger benefits from transportation tax deductions you get. People with high wages gets more benefit than people with low wages.

In 1998 750.000 working people got a total deduction on the tax bill of about 6.9 billion DKK from transportation tax deductions. These deductions implied a tax loss of about 2.7 billion DKK, which equals an average tax relief of 3,700 DKK for each in average.

The transportation tax deduction incite directly to increase transport and indirectly as follows structural influences. On the one hand the transportation tax deduction implies, that people will look for jobs in a greater geographical area than they else would have done. On the other hand the transportation tax deduction implies, that the localisation of labour and of companies are altered. A number of persons must be expected to move further away from their job than they would have done without a transportation tax deduction, but this tendency might be weakened of the high housing prices in areas with many commuters. Companies may also be expected to choose a location further away from labour than they would have chosen without the transportation tax deduction.

The transportation tax deduction gives limited economic benefits for society ... In a situation with boom and low unemployment the economic social benefit of general subsidies for long transport between home and job must be expected to be limited.

The transportation tax deduction has an allocation that benefit the regions around the capital and to a smaller extend around other big cities. The tax deduction has a tendency to increase transportation and the deduction is estimated to have limited economic social influence. In this situation could more efficient ways of subsidising regions and persons that really needs the benefits. As examples could be subsidies for trainees that have to go far to work, subsidies for unemployed that finds work a long distance away etc.". (Translated from Danish)

Source: "Pendling og befordringsfradrag - Report nr. 00-04" The Danish Transport Council, 2000

The Danish Ecological Council proposes, that the transportation tax deduction is phased out so that it no longer exists in 2010. This will remove an environmental harmful incentive to seek jobs far from homes. Also an environmental positive effects on companies localisation might be achieved without creating noticeable problem for the social distribution. Phasing out the transportation tax deduction will save a public expense of about 2 billion DKK.

Reorganise or remove subsidies for agriculture

On World-level 7 times as much money is used for subsidising agriculture in the rich countries, than the same countries uses for development aid.

Subsidies for agriculture are mainly given in North America and Europe and the removal or reorganisation of these environmental harmful subsidies is an apparent place to focus. Such a removal together with a removal of tariff barriers will also give the developing countries better possibilities for exporting their agricultural products and hereby also increase the possibilities of development.

EU has a very high rate of agricultural subsidises, which creates problems with a far too high use of pesticides and nutrient – and also gives problems according to the negotiations of economic conditions for the entry of the 10 application countries into the EU.

A first step in the right direction will be to change the criteria for subsidising away from subsidies for export over to subsidising special crops as a general area depending subsidy and subsidising environmental friendly ways of farming. Next step should be a real phase out of agricultural subsidising, starting with the export subsidies that should be removed as soon as possible because of their harming effects on agricultural export from developing countries. As a third step a reallocation of all remaining subsidies from production subsidies over to real environmental subsidising and social support to the maintaining of economic possibilities to live in the EU rural areas.

We don't include any savings from the phasing out and reorganising the EU and Danish agricultural subsidies, because it must be expected that a saving in the EU budget for agricultural export have to be used for subsidising in 10 new EU membership countries. The savings will therefore at the highest only be seen as a "saved new expense" in the Danish budget.

Phase out Subsidies for Environmental Harmful Energy Productions

"The dream of cleaner energy will never be realised as long as the balance is tilted toward dirty technologies. For a start, governments must scrap perverse subsidies that actually encourage the consumption of fossil fuels".

Source: *Editorial from: "The Economist" of 6. July 2002, Page 11.*

" Limit climate change and increase the use of clean energy"

" Measures at EU level":

"Phase out subsidies to fossil fuel production and consumption by 2010".

Quotation: "A Sustainable Europe for a Better World: A European Union Strategy for Sustainable Development" EU-Commission 15.5.01 – adopted by the Council in Gothenburg 2001

In the report: "Energy Subsidies in the European Union" there is a list of subsidies, that can be identified in the energy area. It is very obvious that subsidies for environmental harmful energy production as energy produced with the burning of fossil fuels or nuclear fuel is far

higher than subsidies to environmental positive energy production by using renewables and to energy savings.

By phasing these environmental harmful subsidies out over a (short) number of years there will be remarkable benefits for the environment together with some savings in EU and national budgets. Furthermore an increased effort for increased energy efficiency and energy based on renewables as recommended in the “Green Paper - Towards a European strategy for the security of energy supply” from the EU-Commission will increase the security of energy supply by introducing an reduced dependence on the mostly political unstable countries, from where the EU to day imports fossil fuels and nuclear material.

”When only looking at money transfers and tax relives (see Table S.1), it can be concluded that the total amount of subsidy that the EU and its Member States give to renewable energy is substantially lower than the amount of subsidy to fossil fuels, and probably in the same order of magnitude of the subsidies to nuclear alone.

*Source: Energy Subsidies in the European Union - Final Report. Working Document of the European Parliament’s DG for Research. (Not yet Published by the European Parliament.)
Frans Oosterhuis, Institute for Environmental Studies (IVM), Vrije Universiteit, Amsterdam, July 2001*

In this proposal we don’t include the savings form the removal of environmental harmful subsidies. Environmental harmful energy subsidies have a big extend in the EU, but a smaller one in Denmark.

3: Reversion of revenue from the Environmental taxes

The revenue from the increased and new environmental taxes and the removal of environmental harmful subsidies is reversed, so that the total public tax revenue remains constant, so that the social distribution is not changed and so that industrial competitiveness is not reduced in all.

The fulfilling of the expected environmental effects by reduced use of the taxed substances and behaviour in a more sustainable way, so that changes to a more environmentally friendly behaviour is rewarded economically, is deducted before the revenue for reversion is calculated.

Thus the proposed environmental tax reform will induce a certain reallocation following the principle of "the polluter pays", and hereby hit those that "overuse" and reward those who "save".

Reversion of Revenue to Households

Reversion by Increasing Social Benefits or as a "Green Check"

Families with children will of course be affected relatively hard by increased consumer prices on basic needs such as electricity, water and heating if they are not extra compensated for that.

The Danish Ecological Council therefore proposes that a part of the overall reversion is done by increasing the value of the "Children's Check" with 1.000 DKK in fixed prices. This part of the reversion will be of about 1,2 billion DKK.

In the same way we propose that certain low income groups get a special part of the reversion of revenues by increasing specific social benefits such as retired people's pensions, cash benefits, unemployment benefits and educational aid from public funds.

All in all we estimate that a reversion of 6 billion DKK have to be used to compensate these low income or none income groups.

It could also be considered to reverse by using a negative tax or to reverse a lump sum as a "Green Check" that covers the increased expenditures for basic needs. The amount of the "Green Check" must then be adjusted according to age and income.

Increase of Income Tax threshold

Increasing of income tax threshold will create a tax benefit that is equal for everybody with an income over the threshold.

An increase of Income tax threshold that benefits economy most for low incomes will be in fine distributional balance with the increase of the environmental of which some as described isolation seen will affect lowest incomes most.

The Danish Ecological Council proposes that the income tax threshold is increased with 5.000 DKK, which will result in a reversion (loss of revenue) of about 8 billion DKK.

Reduction in lower bracket of ordinary income tax

To compensate people with low incomes for the fact, that most of the proposed new or increased taxes are regressive the reversion of revenue must be done in a way that benefits the low incomes most. The Danish Ecological Council therefore proposes that a big part of the

revenue is used to reduce the low bracket of the ordinary income tax from the present 5,5% to 1% in 2010. This tax is paid by almost everyone with an income over 33.000 DKK. The revenue in 2001 from the ordinary income tax – lower bracket was 37 billion DKK. This implies that the reversion must be 30.3 billion DKK in fixed prices in 2010 to reduce the lower bracket to 1% in 2010.

Reduced VAT on organic food and ecolabelled products

Many countries have a differentiation in VAT for different product groups. In the EU it is allowed to have to different rates as a maximum, whereof the lower should be at least 6%. Denmark doesn't have a reduced VAT though very few goods do not pay VAT.

The Danish Ecological Council proposes that at part of the revenue from increased and new environmental taxes and removal of environmental harmful subsidies are reversed to consumers by reducing the Danish VAT for organic food and ecolabelled products to a lower rate.

We propose that the VAT organic food is reduced from 25% in 2002 to 6% in 2010. In 2001 there was consumed organic foods for 2,5 billion DKK of which VAT amounts to 625 million DKK. If the VAT is reduced to 6% and an increase of 100% in consumption of organic food in 2010 the public loss of revenue from VAT will be about 1 billion DKK in 2010.

We also proposes that a number of products labelled with specific international and acknowledged ecolabels gradually will get the reduced VAT too resulting in a reduction in public revenue from VAT on these products for about 1 billion DKK in fixed prices.

The reversion of revenue for these purposes will reduce the price of a number of environmental friendly produced basic goods which will benefit the ordinary consumers. On top of that will the incitement to produce and sell more environmental friendly products lead to savings in public expenditures to environmental protection and restoration. These saving are not calculated in this example of an environmental budget reform.

Reversion of Revenue to Industry:

Additional revenue from new and increased environmental taxes that affects industry is reversed to the extent in which they would have reduced Danish industry's competitiveness compared to companies abroad.

Reversion can be effected according to several different principles:

- Subsidies to environmental improvements such as energy saving initiatives.
- Reversion of revenue from environmental taxes by reducing labour costs or simply as a subsidy according to the labour costs.
- Reversion of specific taxes to the relevant sectors so that both the environmental taxes and the reversion animate to environmental improvements.
- Reversion by reducing other taxation or better possibilities for writing off environmental investments.

In the diagram we do distribute certain amounts for the different types of reversion. This shall only be taken as an example for this proposal. In a actual environmental budget reform reversion have to be negotiated and agreed on by industry.

4: Environmental Taxes that are Imposed in a Sector to Finance an Environmental Necessary Effort

Introduction of environmental tax on diesel vehicles without particle filters and reverse the revenue as a subsidy to help to install the filters

The exhaust from diesel vehicles do contain ultra fine particles. These particles are more and more considered responsible for quite a big number of too early deaths in densely build-on areas. Diesel exhaust too is considered being the biggest cause to the high increase of the occurrence of asthma and allergic diseases in the Danish population especially amongst children.

To day exist diesel filters for bigger diesel vehicles that on the whole can remove the problems with ultra fine diesel particles in exhaust. And diesel filters are gradually introduced for diesel cars.

Installation of particle filters unfortunately are not yet standard for new diesel vehicles, and it will take quite a long time before the problem is solved if economic instruments are taken into use to create an incentive to install effective filters on existing diesel vehicles.

The Danish Ecological Council proposes that a special charge is introduced for diesel vehicles without particle filters. We propose 1.500 DKK for cars, 2.000 DKK for small cars and 3.500 DKK for trucks and busses all in fixed prices. This will create revenue of approximately 2 billion DKK each year that shall be reversed as subsidies to installation of particle filters on new and old diesel vehicles.

Alternatively an extra environmental tax of 0.10 DKK per litre can be introduced on diesel corresponding with a supplementary reduction of tax on vehicles that do have particle filters installed in a revenue neutral way. By doing it this way the possible negative effects on competitiveness will be more invisible, but on the other hand it will increase the border tax problems.

Public Transport pays fuel taxes and gets the revenue reversed according to labour cost / driven kilometres

The Danish public transport does presently not pay fuel taxes. Therefore the economic incentive to save fuel by focussing on increased energy efficiency is small. On the contrary labour costs accounts for a very big part of the total expenditures, which contributes to oversizing of busses and potential numbers of passengers, which leads to at reduce energy efficiency per kilometre.

To discourage this effect fuel must be more expensive and labour costs must be reduced.

The Danish Ecological Council thus proposes that a reallocation of about 1 billion DKK is done by taxing the use of fossil fuels in Public transport and to reverse the revenue as a subsidy for labour costs.

Energy Ineffective Products are Taxed and Energy Effective Product are Subsidized

To day energy efficient products are often the best buy, when both the price for the product and the cost of energy in its lifetime is taken into consideration.

Still Energy inefficient products are bought too often because the price for buying the energy inefficient product is less than the price for the energy efficient product and because infor-

mation about the total costs in the product's lifetime often is lacking. Together with this many consumers can't manage a lifetime consideration or they simply lack the extra money in the buying situation.

This disproportion hinders many very easy and cost-efficient energy savings simply by hindering the optimal purchase of energy efficient products.

This situation needs to be changed in two steps:

First we need to tighten the standards for information about the total economy in the buying situation.

Secondly to introduce an environmental tax on the energy inefficient product and reverse the revenue fully as a subsidy to energy effective product with the same function to change the relative prices in the buying situation according to the energy efficiency of the products and by doing that changing the actual price signals.

The thought is not strange to Danish politicians because a broad political majority agreed on doing this for refrigerators, freezers and windows as a part of the total energy agreement leading to a new law for the energy sector.

In our example we propose revenue from taxing energy inefficient products of 800 million DKK with full reversion as subsidies to the development and sale of energy efficient products. By doing this we estimate that the sale of energy inefficient products will drop by 20% and the sale of energy efficient product will go up with 15% until 2010.

Proposal for a Danish Environmental Tax and Budget Reform 2002 - 2010

All changes is gradually from 2002 til 2010

Proposals for taxation and reversions	Present Taxation	Additional Taxation	Revenue 2000 in billion DKK	Estimated reduction or change in Consumpt.	Additional revenue before all in consumpt. bill. DKK	Additional revenue after all in consumpt. bill. DKK
CO2 emission from flaring from oil platforms	0,00	300,00		40%	0,5	0,3
Increased tax from extraction of oil and gas in the North Sea		50%	7,40		3,7	3,7
Increased taxes on petrol and diesel	4,00	2,00	9,88	20%	4,94	1,0
Introduce environmental differentiated road pricing	0,00	0,30	0,00	20%	13,5	10,8
Increase steps in annual car ownership tax			6,93	-	3	2,0
Increase registration tax for energy inefficient cars			14,12	7%	2	1,0
Increase carbon tax	100 DKK/ton	100 DKK/ton	4,80	10%	4,8	3,8
Phase out rebates on carbon tax for energy extensive industry	65%	35%		5%	1,8	1,7
Reduce rebates on carbon tax for energy intensive companies	3%	9%		5%	2	1,9
Increase tax on electricity use in households	0,55	0,55	7,82	10%	7,82	6,3
Increase tax on oil, coal and natural gas use in households	2 DKK/l	2,00	10,60	10%	10,6	8,5
Increase tax on pesticides		50%	0,38	10%	0,19	0,1
Increase tax on aggregates	5 kr/m ³	5 kr/m ³	0,18	10%	0,18	0,1
Industry pays full tax on piped water	0,00	5,00	1,56	10%	0,75	0,7
Increase tax on chlorinated solvents	5,00	15,00	0,00	60%	0,002	0,0
Tax unwanted chemicals				50%	6	3,0
Tax fuel for airplanes and ferries/ships**	0,00	3,20	0,00	18%	5,9	5,3
Increase tax on solid waste	350,00	350,00	1,00	15%	1	0,7
Increase tax on waste water	100%	200%	0,28	10%	0,56	0,5
Tax advertising, e.g. handouts, fliers, commercials, brochures		20DKK/kilo		10%	4,5	4,0
Increase tax on PVC and Phthalatets	2 DKK/7 DKK	1,00	0,04	20%	0,065	0,1
Tax high pressure treated wood and timber	0,00	500,00		100%	0	0,0

Taxes for financing environmental improvements

Tax diesel vehicles without particle filters and reverse for filters						0,0
Tax fuel use in public transport and reverse for labour cost						0,0
Tax energy inefficient products				20%	1	0,8
Reverse as subsidies til energy efficient products				-15%		-0,8

Removal of harmful subsidies

Remove tax rebates for transport to job						2,0
Reorganize or remove subsidies for agriculture						-
Remove subsidies for energy based on fossil fuels and nuclear						-

Double Dividend

More jobs and a broadenend tax base has a positive effect						-
Savings in expenditures for environmental damage						-

Reversion of revenues

	Additional revenue in 2010 in fixed prices	57,5
	Reversed revenue in 2010 in fixed prices	-57,5

Private households:

Social compensations						-6,0
Reduce lower bracket og income tax from 5.5% to 1%						-30,3
Increase income tax threshold						-8,0
Reduce VAT on organic food and ecolabelled products						-2,0

Industry:

Reversion to industry according to labour costs						-6,2
Subsidies for introducing cleaner technology						-2,5
Change taxation and write off for environmental investments						-1,5
Increase investments in public transport						-1,0

Revenue in 2000 in billion DKK: **64,99**

** These taxes needs common decisions in the EU and/or nabouring contries.

All prices are in 2001-prices - Indexation is assumed for all existing and new environmental taxes.

Description of the Double Benefits – Double Dividend

The existence of a "double dividend" or not has been the topic of numerous discussions, modelling and "before and after" evaluations.

The thinking behind the existence of a double dividend is very shortly:

- By increasing the taxation on resource use and environmental damage there will be savings in expenses to repair after environmental damage.
- By using the extra revenue to reduce a so called distorting tax like the income tax, it will create more jobs and a greater incitement to do a little extra which leads to a broadened tax base for the rest of the income taxation.

On top of that comes to extra (Danish) benefits:

- If it's more expensive to use natural resources and energy and to affect the environment in a negative way this will create a relatively better competitiveness situation for environmental friendly technology in Denmark.. This will give Danish industry increased possibilities to develop environmental friendly technology for the home market and to develop further for export.
- The reduction of the high Danish direct tax on labour income will reduce a number of negative effects for the necessary financing of the welfare state.

The experts don't agree on the actual double dividend effect, and they do bring estimates forward that goes from no effect at all till that the double dividend will have remarkably effect in creation of new jobs and an improved national economic situation.

One thing is relatively sure:

No surveys or calculations have shown a negative double dividend, so if it exists it will contribute positively to a better national economy and a positive creation of jobs.

We expect therefore that there will be a certain double dividend coming from the proposed environmental tax shift, but in this example we don't calculate with any revenue from reduced expenses to unemployment benefits and a broadened tax base and less expenses caused by less environmental damage.

"If the burden of taxation is shifted away from labour and other production costs towards the environmental costs of products and processes, this can reduce the distorting impact of taxation on the economy and benefit the environment (thus providing a 'double dividend')".

Quotation from: "Environmental Signals 2002" The European Environment Agency, 2002

The VAT Question

An often stated misunderstanding in connection with a revenue neutral environmental tax reform is that the state will "earn" a lot more in VAT that of course also will be imposed on the increase rate from the tax. This is a wrong way of thinking.

The revenue to be used for public expenditures is determined of the total sum that the end consumers use to buy products and services.

Therefore will a fully reversed increase in revenue from environmental taxes not lead to higher revenues to the state from VAT because the consumers total and average purchasing power will be exactly the same before and after the implementation of a environmental tax reform as stated. And with the same purchase power the state will get exactly the same revenue from VAT – but it will be divided a little bit different between the types of purchased products and services.

Regressive and Progressive Taxes

The proposed environmental tax reform is constructed due to the following conditions:

- Environmental taxes shall have a noticeable environmental effect
- The total revenue for the state from all kind of taxes and also the public expenditure shall be neutral – no raise in tax pressure
- Neutral social distribution effects
- Neutral or improved industrial competitiveness in proportion to abroad seen as industry as a whole.

Some increased taxes or tax reductions are regressive. That means that they affects people with low incomes hardest or benefits them least, leading to that the disposable income is negatively affected compared to people with high incomes.

Other taxes or tax relief are progressive. That means that they reduce in percentages the disposable incomes of people with high incomes more (or reduced less) than they reduce the disposable income of people with low incomes.

A few taxes are income neutral. That means that they affected both high and low incomes with an equal share of their disposable income.

Therefore is very important to know the effects of the proposed changes in taxes, income tax threshold and social benefits for different types of families, so that the total ”package” – an environmental budget reform – can be constructed in a satisfactory way.

Below is briefly listed, if the proposed changes in direct and indirect taxation are progressive or regressive, together with the actual ”strength” with which they benefits or harms families with high or low incomes.

Increase of indirect environmental taxes:

Environmental taxes are often accused of being distinct regressive which means that they affect people with low incomes much more than they affect people with high incomes. This is however not correct. A new survey carried out by Risoe National Laboratory documents, that the big negative affect on low-income groups is strongly exaggerated.

”All in all the distributional effect from environmental taxes does differ from these from other taxes by being less regressive, but there a considerably difference between the different kinds of taxes. Environmental taxes and energy taxes are just a bit more regressive than the VAT but less regressive than the taxes on spirits and tobacco. On the contrary transport related environmental taxes differ from other kinds of taxes by being progressive. This difference causes that the total effect of environmental taxes are noticeable less regressive than VAT and other excise duties. This result is not affected if families’ expenditures are used instead of the families’ disposable incomes.

The overall conclusion is that environmental related taxes are less regressive than other kinds of indirect taxes. This result contradicts the widespread opinion that environmental taxes considerably are social unbalanced. If alone environmental and energy taxes are considered they are a bit more regressive than VAT”.

”Distributional effects of Energy and environmental taxes, Henrik Klinge Jacobsen, Katja Birr-Pedersen, Mette Wier, Risoe National Laboratory, November 2001”

Reduction of direct taxes and increasing the social benefits:

- **Increasing of the social benefits – retired peoples pensions, cash benefits, unemployment benefits, educational aid from public funds, child allowances and more** will benefit people with low incomes, especially people out of work. The increase of social benefits is resultantly clearly progressive.
- **Increase of income tax threshold** benefits distinct families with low incomes because this will ease the economy of every person with the same amount. Increase of income tax threshold is like this progressive.
- **Reduction of the tax percentage of the lower bracket of the ordinary income tax** will benefit all taxpayers by a percentage reduction of tax payment per earned DKK. The reduction will give a bigger economic benefit the more the family earns.
- **Reduction of tax percentage of the medium and top bracket of the additional income tax** is very regressive because it will only benefit the high and very high incomes following the principle that the higher the income the more benefits of the reduction. Both very low and many normal incomes will not benefit by such an increase.

Therefore it is possible to construct an example of a comprehensive environmental tax and budget reform so that the social distributions between rich and poor is not affected as a result of the tax reform, with regard to the regressively and progressive from both indirect and direct taxes.

Low Income Families Will not be Economically Affected more than other Families

This example for a comprehensive Danish Environmental tax reform presupposes that the social distribution in the Danish society will not be affected of the proposal.

To underline this presupposition we have made a calculation of the impacts from our proposal on different types of families.

We shall though be the first to admit, that a very exact calculation of the overall effects of a comprehensive environmental reform is out of our capacity. Our calculation is only made to illustrate the fact, that it is possible to construct a Danish environmental tax reform without laying extra economic burdens on low-income families. We recommend that a professional calculation is done either by using the so-called "Law model" from the Ministry of Finance and Business Affairs or done by the Danish Statistic Department so that eventual unexpected consequences of our proposal can be corrected.

As it can be seen from the rough calculations the effects of the described environmental budget reform are not very different for the different income types.

It is remarkable that all family types will gain from this example of a possible environmental budget reform. This is naturally not so, but is caused by our rough calculation. It is the relative distribution of changes between the different types of households that is interesting.

Our entire example is in social balance compared to the household incomes and a little bit more positive for families with children.

Note that in the table a negative difference means more money for the families.

Minimal Influence on Industrial Competitiveness

"To date, environmentally related taxes currently imposed by OECD countries have not been identified as causing significant reductions in the competitiveness of any sector, although this can in part be due to the fact that Countries applying environmentally related taxes have provided for total or partial exemptions for energy intensive industries".

"Pre-announcing the introduction of environmentally related taxes and tax rate increases, and a gradual reduction or phasing out of rebates and exemptions, are two policy options that could ease implementation, make environmental taxes more effective, while also addressing competitiveness concerns".

"Possible negative competitiveness impacts on some sectors from the environmentally related part of a broader reform might thus be reduced. And while some sectors may face a net loss in competitiveness if countries expand environmentally related taxation unilaterally, other more environmentally benign sectors of the economy could improve their competitiveness, inter alia depending on how revenues generated in the reform are redistributed".

Quotations from: "Environmentally Related Taxes in OECD Countries – Issues and Strategies", OECD 2001

"In April of last year we introduced a Climate Change Levy that will, it is estimated, save emissions of five million tonnes of carbon a year. This is not an extra burden on industry or a barrier to economic growth, the changes are revenue neutral and the £1 billion we expect to raise in the first year will be recycled to business, partly through extra support for energy efficiency and partly through cuts to employers' National Insurance Contributions".

Quoted from "The power of the public purse..." by Paul Boateng, Member of UK Parliament for Labour and Chief secretary to the Treasury, "Inside TRACK", Spring 02.

"What is good for environment is also good for business. Time after time it is evident that the environment doesn't cost anything but on the contrary gives access to win new shares on the worlds market. Actually I can't see many companies that wouldn't benefit from implementing environment and sustainable development in their ways of working"

"We are lucky that our substance has the right environmental profile. The more the environment is in focus the better for us. Other companies face the opposite situation because of their ways of producing and use of natural resources. But they probably won't be in the market in 50 years".

"I don't believe that the majority of the consumers will pay extra for at product just because it is produced in a sustainable way. It is therefore important that sustainable products also are the cheapest. Else it won't work. And here authorities play an important role."

"He (Claus Stig Pedersen) means that this have to be done by using taxes and levies."

"Authorities have to create a system that makes it easy to do the right things and difficult to do the wrong things. Consumers have to face benefits by choosing environmental optimised products."

Quotation: Claus Stig Pedersen, Environmental Director in Hartmann International – from Jyllands-Posten 2.9.2002

Same Pressure from Taxation – but Paid in Another Way

The Danish pressure from taxes is high but is according to most calculations slowly going down.

Normally the Danish pressure from taxes is not mentioned as the biggest problem because a high pressure from taxation can be seen as a instrument for a rather good social redistribution in society together with the Danish welfare model where most of the welfare tasks is financed as public expenditures.

On the opposite it is very often said, that the high Danish income taxation gives to little incentive to do something extra because of the fact that the income often just leaves less than half for private consumption.

The proposed tax changes will help a lot to this problem and at the same time the proposed Environmental tax reform does not changing the income distribution, it does not reduce the industrial competitiveness and it does not increase the total pressure from taxes. On the other hand the proposal will change taxation from income tax to taxing pollutive behaviour and the use of scarce and environmental damaging natural resources.

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Annex 1: Recommendations for Implementation of an Environmental Budget Reform from PETRAS

“In the light of the research, it is possible for us to put forward recommendations for ways to increase acceptance of environmental taxes and aid the introduction of ETR:

- *Give an independent body responsibility for ensuring that the revenues are used as promised.*

Focus groups in France, Ireland and the United Kingdom stated that if revenue distribution was carried out by an independent body including representatives of various stakeholders, then that would increase trust. The body would need to have the ability to clearly show how much revenue had been collected and where this money had been allocated. A number of countries have had green tax commissions, but our recommendation is that the body should also oversee the revenues.

- *If there is a tax shift, explicitly show the reduction in payroll taxes on people’s payslips.* The evidence from the German and Danish focus groups shows that people will notice the increase in environmental taxes, but will not know about the reduction in payroll taxes unless it is made apparent to them.

- *Earmark revenues for energy efficiency programmes targeting areas which can be addressed at zero or negative net cost.*

It would make sense for the use of revenues for environmental programmes to be targeted at addressing the energy efficiency gap (the areas where energy efficiency would cost less than is currently being spent on wasteful use of energy). It is notorious that there is a large energy efficiency gap in both the domestic sector and among SMEs. There would be a great deal of potential to address it and actually save consumers money, ensuring that the measure was cost-neutral. The cost-neutrality would need to be continually emphasised in publicity.

- *Also provide grants for local environmental projects, renewable energy and public transport improvements.*

Members of the focus groups were keen for revenues to be spent on local environmental projects that had visible effects in their communities. Many members of the focus groups were also keen for money to be devoted to public transport and the development of renewable energy. It might be sensible to devote some revenues to such purposes in order to increase public acceptance. Investment in public transport will also increase the elasticity of petrol use.

- *Send utility customers vouchers for energy efficiency investments with their bills in order to make the connection between the levy and its benefits tangible.*

It is clear from the research in Denmark and Germany that there is a need not only to make reform easily comprehensible, but also to publicise the benefits and make them visible. In particular, the connection between ‘costs’ and ‘benefits’ needs to be made clear and tangible, so that the reform is not seen simply as higher taxes, as it has been by many people in those countries. One way to make the link tangible would be for customers to be sent vouchers with their utility bills offering substantial discounts on energy efficient products. Vouchers with bills would provide something tangible and make the connection between ‘costs’ and ‘benefits’ very clear. An enclosed booklet advising on how to use the vouchers would explain the financial savings and raise awareness of the potential for energy efficiency measures.

- *Visible help for those on low incomes.*

An ETR that lowers only payroll taxes is regressive, particularly affecting those without employment. If there are extra transfer payments to counter the effects, they should be explicitly labelled, so that people are aware that the regressive effects are being dealt with. An alternative way to counter regressivity would be to give everyone an equal payment, rather than lowering specific taxes.

The limitation of a voucher scheme is that those on relatively low incomes often find any kind of capital expenditure such as replacing an old boiler or fridge difficult to afford. A special discount card could be sent to all those on low incomes to enable them to obtain such goods at very low cost. Fraud could be addressed through relatively simple security measures.

- *A tax-free allowance.*

It is crucial that people do not feel simply 'punished' by ETR, as many have in Denmark and Germany. A tax-free energy allowance was suggested by a Danish focus group as an incentive to enable people to avoid paying the tax if their energy consumption was low enough. The ETR in the Netherlands does have a tax-free allowance in order to avoid burdening the poorer parts of society excessively and which was carefully set to make the tax non-regressive. It also has the advantage that it makes the marginal incentive to reduce consumption greater.

- *Careful choice of terminology.*

The term 'ecological tax reform' was not found to be transparent. In some countries there are also strongly negative associations with the word 'tax', which raise intense suspicions. If the revenues are under the control of an independent body rather than the government, then there seems no reason why the measure should not have a different name".

Source: Environmental Tax Reform: What Does Europe Think? PETRAS, Policies for Ecological Tax Reform: Assessment of Social Responses, A Framework 5 Project: EVGI-CT-1999-0004, Summary given in Bruxelles 5.th March 2002

"We can conclude, that industry and the public do know the new environmental taxes, but only very few knows, that the revenues are reversed. Only one out of five interviewed companies and one person out of 50 in the focus group did know, that the revenue from the environmental taxes is reversed by reducing labour costs".

"The companies as well as the public consider to a great extend environmental taxes as "just new taxes". They don't believe that environmental taxes actually reduces the environmental problems and are generally sceptical to the fact, that the taxes are reversed".

"It is more likely that a further change in taxes to more environmental taxes will be received in a positive way by companies and the public if change is followed by intensive information about the expected environmental effects and documentation about the reversal of the revenue and the potential positive effects of that". (Translated from Danish)

Quotations from an article "Companies and Households reactions on environmental tax reforms" by Anders Larsen, AKF – Amternes og Kommunernes Forskningscenter. SØM, juni 2002.

Annex 2: The common Campaign Platform from EEB

European Environmental Bureau is the biggest European environmental organisation with 133 member organisations. The EEB has launched a common campaign for an Environmental Budget reform both on EU-level and national levels.

16 organisations participate in the campaign. 13 organisations from EU membership countries and 3 from application countries.

On the EU level the campaign focuses on the approval of directives etc. that commits the membership countries to implement the use of economic instruments for a sustainable development on a national basis. Actually the campaign focuses on the adoption of the Monti-proposal for a directive about minimum energy taxation with binding minimum rates in each country. The principles of the proposal were approved at the summit in Barcelona 15. - 16.3.02 and the proposal was sent to the council of finance ministers to achieve an agreement of the actual content in the directive so that it could be finally adopted in Copenhagen in December 2002.

NGO's in all 16 countries actively campaigns for an increased national use of economic instruments for at more sustainable development. This results in a number of proposals for national environmental budget reform and/or conferences on this topic.

Below extracts of the common campaign platform and the proposals can be seen:

MAKING PRICES WORK FOR THE ENVIRONMENT

Environmentally sustainable development is an illusion if market incentives continue to stimulate wasteful consumption and production habits and make environmentally sound changes costly and non-competitive. That is why the EEB launched a campaign to change market incentives to make prices work for the environment. The two main tools we promote an environmentally motivated fiscal reform, including the shifting of taxation burdens and subsidy policies. In order to prevent negative social impacts and accelerate the market response, we promote specific flanking measures.

Environmental taxation is one of the main tools for moving towards sustainable development. Environmental taxes have positive effects on the environment, push innovation and efficiency. They can also contribute to the creation of jobs, especially when the tax revenue is recycled through the economy by lowering taxes on labour (environmental tax reform, ETR). Their overall economic impact can clearly be seen positive, contributing to a better quality of life and better preconditions for prosperity on the longer term. These findings are supported not only by environmental organisations, but by large parts of society, international organisations such as the OECD, consumer associations, trade unions and individual companies.

Government policies support environmentally problematic production and consumption in different ways still. Direct subsidies to coal production or intensive agriculture are clear examples. Tax-rebates for commuting by car or tax-exemptions for air-travel are others. Such subsidies need to be phased out, and replaced by subsidies that accelerate environmentally friendly alternatives for energy production, transport etc.

Social measures need to be put in place to avoid any potential social injustice stemming from the effects of the environmental fiscal reform we propose. We know this is possible, it is a matter of designing the policies in a proper way.

For the campaign we have set quantified targets and timetables for the national levels. We hope to create a new or renewed debate in all EU countries on environmental tax reform, and therewith create a synergy that will make it possible to take more bold steps on the national level, knowing that similar processes are taking place across the EU. We promote the adoption of the current proposal of the Commission on energy products ("Monti-directive"), but see it as a very initial start of EU level co-ordination only. And we insist it is not a precondition for national reform to have EU agreements. (Skal oversættes til dansk)

Quotation from: "The European Environmental Bureau Campaign on Environmental Fiscal Reform", "Campaign Platform" Bruxelles, 2002

The Demands of the EEB Campaign:

Campaign Objectives :

- Implementation of an ambitious and effective Environmental Fiscal Reform throughout Europe
- Raising awareness about EFR among the public as well as among governments and private sector players
- Raising the quality of the political discourse on Environmental Taxation Reform and overcoming resistance

Campaign demands :

- An additional minimum 10% shift in tax base from labour to natural resources by 2010, at EU and national level – as an example to show it is possible
- Removal or reform of all environmentally adverse subsidies by 2005
- Energy saving and efficiency policies
- Fiscal incentives for environment protection

Back Page:

”Economic instruments, like taxes and tradable permits, are environmentally effective and economically efficient policy instruments. OECD has long advocated for a consistent use of these instruments and has carried out extensive analysis of their implementation”.

Quotation from *OECD’s Website about Economic Instruments for Environmental Purposes*: <http://www.oecd.org/EN/home/0,,EN-home-471-nodirectorate-no-no-no-8,00.html>