

IN SEARCH OF ECONOMICALLY RATIONAL ENVIRONMENTAL STATE AID: THE CASE OF EXEMPTION FROM ENVIRONMENTAL TAXES

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A. INTRODUCTION

An objective of the European Commission's State Aid Modernisation initiative that was launched in May 2012 is to establish "common principles" for the assessment of state aid.¹ Any state aid measure that is assessed individually has to satisfy the common principles before it can be declared compatible with the common market. These principles are as follows:

1. Contribution to well-defined objective of common interest.
2. Need for state intervention [eg market failure, equity or cohesion].
3. Appropriateness of aid.
4. Incentive effect for aid recipients.
5. Proportionality of aid [aid kept to the minimum].
6. Avoidance of undue negative effects on competition and trade between Member States.
7. Transparency of aid.

With the exception of the extra requirement for aid to be transparent, these principles are almost identical to the "balancing test" of the "refined economic approach" that was adopted in the context of the State Aid Action Plan of 2005.²

Since 2005, the Commission has gained substantial experience in applying the balancing test.³ About 10–15 per cent of all state aid measures every year

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¹ See European Commission, "Communication on EU State Aid Modernisation", COM(2012) 209 final (8 May 2012), available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2012:0209:FIN:EN:PDF>.

² See European Commission, "Less and Better Targeted State Aid: A Roadmap for State Aid Reform 2005–2009", COM(2005) 107 final (7 June 2005), available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2005:0107:FIN:EN:PDF>.

³ See D Neven and V Verouden, "Towards a More Refined Economic Approach in State Aid Control" in W Mederer, N Pesaresi and M Van Hoof (eds), *EU Competition Law—Volume IV: State Aid* (Claeys & Casteels, 2008).

have been subject to the full balancing test. On the whole, the impact of the test has been positive. Although it is more cumbersome for Member States and slows down the procedure for authorisation of state aid, it has improved significantly and has made more transparent and systematic the assessment of the compatibility of aid with the internal market. Not only has it aligned that assessment with the fundamental requirement of case law—which is that state aid must be capable of achieving an objective of the Treaty—but it has also introduced much needed economic rationality. According to the balancing test, state aid is economically rational when it remedies a market failure and incentivises recipients to do something extra without causing excessive distortion to competition.

However, this is a necessary but not sufficient condition for state aid to increase social welfare. In addition, the benefits must exceed the costs of state aid. Although, as the name of the balancing test itself indicates, its purpose is precisely to ensure that the positive effects outweigh the negative ones, I am not aware of any case where the Commission has been able to quantify benefits and costs and derive that the overall balance is positive. The new “common principles” do not require such quantification either.

There is a good reason, however, why the Commission’s guidelines and practice do not require Member States to quantify the expected effects of state aid. It is difficult to measure the benefits and costs of state aid, but it is not an impossible task. The main purpose of this short article is to demonstrate that in certain cases it is surprisingly easy to derive a measure of benefits and costs. If social gains outweigh costs, then state aid is economically rational. This kind of analysis is very timely because the Commission is currently in the process of revising its environmental guidelines for the period 2014–20. This article outlines the kind of compatibility assessment that should be incorporated, where possible, in those guidelines.

The second purpose of the article is to examine a problem related to the rationality of state aid: why the recipients request aid. This may be thought of as the private rationality of state aid. If the positive effects of state aid outweigh the negative ones, then state aid is socially desirable. It is then automatically presumed that state aid is good for those that receive it. That is, state aid is privately rational. But this is not always the case. In particular, environmental aid is limited to a certain percentage of “eligible” costs. These costs are always lower than the total expenditure. This immediately raises the question whether the recipients of environmental aid obtain any advantage. This article identifies at least one case where the answer is in the affirmative.

The article examines the case of exemption from environmental taxes. Here, though, there is a third puzzle. If such taxes are intended to protect the environment from harmful activities, how is it possible that exemptions or reductions from those taxes can contribute to improved environmental conditions? The

typical answer is that without the exemption it would be difficult to implement the full tax.⁴ This is an answer that is rarely backed up by robust evidence. However, the case which is used in this article provides an example where it is possible to derive quantifiable evidence.

In order to facilitate the exposition of the various possible effects of state aid, the analysis in this article is based on an actual case that has recently been assessed by the Commission. The case concerns a Dutch exemption from environmental charges that has been found by the Commission to constitute compatible state aid. First, though, the next section explains in more detail why it is not obvious that recipients of environmental aid obtain net benefits.

B. THE PUZZLE OF ENVIRONMENTAL STATE AID

Commission Regulation 800/2008 (the General Block Exemption Regulation) and the various state aid guidelines permit aid only in proportion to the total eligible costs incurred by the beneficiary undertakings. This makes sense. The purpose of state aid is to provide an incentive for beneficiaries to do something they would not normally do without the aid. Therefore, the allowable amount of aid is only that amount that is sufficient to influence the decision of beneficiaries to undertake a socially desirable project. The guidelines on environmental state aid (EAG) are no exception in this respect. They allow Member States to grant state aid only up to a certain proportion of the costs incurred by companies investing in environmentally friendly technology.⁵

However, the EAG differ from all other guidelines in one important respect: the eligible costs are only the “extra” costs.⁶ These costs are calculated as the difference between the higher costs of environmentally friendly technology and the lower costs of the standard, but more polluting, technology. It is this definition of eligible costs that creates the puzzle concerning the rationality of those who receive environmental aid.⁷ Why do aid recipients make the investment that costs more? After all, they have the option of not incurring those extra costs but achieving exactly the same effects in terms of output, energy generation, etc. They can achieve them by investing in an alternative but cheaper technology. The fact that it is also less environmentally friendly

⁴ See the detailed analysis of this issue in M Kleis and P Nicolaides, “Fiscal State Aid and Environmental Protection: Analysis of a Conceptual and Practical Problem” (2010) [November] *Tijdschrift voor Staatssteun* 85.

⁵ The guidelines are available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2008:082:0001:0033:EN:PDF>.

⁶ See paras 80–86 of the EAG on the methodology of the calculation of the extra costs.

⁷ See the exchange in G Branton, “Environmental Aid: A Case for Fundamental Reform (1)” (2006) 4 *European State Aid Law Quarterly*; S Holmes “Environmental Aid: A Case for Fundamental Reform (2)” (2006) 4 *European State Aid Law Quarterly*.

technology should not really concern them as long as they do not have to bear the costs of the damage they inflict on the environment.

The typical response that seeks to explain this puzzle is unsatisfactory. It is often asserted that companies obtain other, but unspecified, benefits from environmentally friendly investments. But what are these benefits? If they exist, why do the current state aid rules ignore them? In fact, the rules do not ignore them; they simply assert their existence, but then maintain silence on how they can be treated. For example, the EAG, in paragraphs 32, 172 and 177, refer to “image”: the positive publicity that firms obtain from being kind to the environment. This may indeed be true, but the magnitude of this benefit must be taken into account. In its judgment in Case T-565/08 *Corsica Ferries v Commission*, the General Court reminded the Commission that protecting one’s own “image” is a legitimate concern, but it has to be defined in sufficient detail and costed.⁸ If one counter-argues that the benefit from a good image is difficult to quantify, then why do companies carry out investments the benefits of which are unclear? Either the Commission or the aid recipient is not doing a good job.

Yet we must not too hastily conclude that it is not possible to measure environmental benefits. Recently the Commission authorised aid in the Netherlands that appears to be an economically rational option for all concerned. There are demonstrable benefits for the environment, society at large and the aid recipients themselves.

The Dutch case, which is examined in more detail in the next section, demonstrates how the granting of an exception from environmental taxes can make economic sense. Indeed, so far it has not been clear how a tax exception can in fact help the environment. The purpose of environmental taxes is to penalise an environmentally harmful activity. How, then, is it possible to help the environment by relieving the polluter from part of the tax?

The formal answer given by the EAG in paragraph 57 is that, without the exception, the tax would be (politically) unfeasible because it could not be passed on to consumers. This is when consumers are very price sensitive and/or supply is very elastic, as happens in markets with many competitors. However, what is or is not politically feasible is anyone’s guess. It is an assertion that has never been proved satisfactorily by Member States. By contrast, the elasticities of demand and supply can be calculated with a fairly high degree of certainty. Moreover, if, indeed, supply is elastic, that means that there are many competitors who can offer the same product at the same or lower prices. In fact, it is perverse to support polluting industries when alternative sources of supply are readily available. In practice, the Commission demands that Member States submit market studies to prove that taxes cannot be passed on to consumers,

⁸ Paras 80–92, available at <http://curia.europa.eu/juris/document/document.jsf?text=&docid=126641&pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=150523>.

but there is no evidence that, in terms of sophistication, any such studies have gone beyond opinion surveys and description of existing market prices, output and shares. What appears at the surface to be an environmental policy may in fact be disguised support for a certain industry or region.

A case in point is the recent analysis of the Commission in its assessment of the reduction of the German passenger tax on flights to and from North Sea Islands.⁹ The Commission accepted that

“in this case, the possibility to grant reductions for the transport of certain passengers to certain North Sea islands has enabled Germany to introduce a general tax on air transport that is not prescribed at EU level. Without the reduction the tax would not have been approved by Parliament. The possibility to grant tax reductions also for the transport of tourists, business people, service providers, workers etc. was of particular importance for the acceptability of the tax where, as in the present case, the transport of those passengers is of vital importance for the participation of the concerned islands in the economic life.”¹⁰

There is a disturbing circularity in this line of reasoning. The German government itself claims that it would not have been possible to adopt the measure without the tax reduction. Apparently, the measure was passed by the German parliament only after the reduction was incorporated in it. This reasoning is based on the implicit assumption that the government would have been unable to persuade the parliament to approve it. Germany shows only that the tax was approved once the reduction had been introduced, not that the tax without the reduction was rejected by parliament.

Apart from the feasibility of levying the tax, there is also the important issue of whether the tax could be absorbed by the taxed firms. According to the EAG, the reason for allowing tax reductions is that without such a reduction there is a substantial increase in production costs. In the German case, the Commission had to examine the proportion of the tax increase in the ticket price of regular flights.

The tax for 2011 (€8), including VAT, represented a price increase varying between a low of 4.8 per cent and a high of 25.7 per cent of the quoted ticket prices, depending on the destination and airline. There was no attempt to attach weights to the various ticket prices (eg median price, market shares, majority of sales). The Commission considered that the increase “represents a substantial increase in production costs”.

The next step was to determine whether it would have been impossible to pass on the increase in production costs to passengers without substantial sales reduction. Germany argued that airlines were able to maintain year-long operations only if they had a high number of passengers in the summer.

⁹ Commission Decision SA.32020, available at http://ec.europa.eu/competition/state_aid/cases/241338/241338_1420212_158_2.pdf.

¹⁰ *Ibid*, para 56.

Given the short distances, the corresponding expectations of customers to pay a rather low price and the availability of ferries, customers were price sensitive. On the basis of data on air travel, the Commission accepted that there was proof of “a negative correlation between the number of passengers on flights and the tax”. Moreover, additional data showed a decrease in air passengers while there was an increase in the number of passengers on ferries. The tax reduction of 80 per cent was also found to be proportional because it complied with the EAG requirement that taxable activities pay at least 20 per cent tax. The Commission was satisfied with data that looked at past behaviour. It did not consider whether past behaviour could be repeated in the future, nor did it ask for forward-looking studies on the basis of estimated elasticities of demand and supply. The Commission also did not consider whether there were qualitative differences in air and sea travel (eg fast and slow, respectively), or that there could be a smaller segment of richer passengers who would be less sensitive to a price increase for air travel.

The line of reasoning outlined above, which is common to many cases concerning exemption from environmental taxes, suffers from a major logical weakness. If ferries represented a viable alternative to air links with islands, then the introduction of the full flight tax would not have had a significant effect on either the residents of the islands or tourists. By proving that the tax could not have been passed on to travellers, Germany in fact demonstrated that (i) the tax would not harm the islands and (ii) the tax would achieve its purpose of curbing air travel that harms the environment. By contrast, the Dutch case which is reviewed in the next section is based on sound reasoning.

C. THE MEASURE: ANTI-OPT-OUT SCHEME FOR WATER BOARDS IN THE NETHERLANDS (SA.36556)¹¹

In July 2013, the Netherlands notified a scheme introducing reduction to the normal levy on water discharges. The aim of the levy is to disincentivise the discharge of polluted water. The purpose of the reduction is to induce large dischargers of waste water to use the water treatment plants operated by public water boards. The more intensive their use, their higher their operating efficiency.

There are 27 water boards in the Netherlands, which are responsible for managing the quality of water. Water boards are public authorities and are legal entities under public law. Water boards have the power to impose pollution levies. The revenues from these levies are used to cover all costs incurred by the water boards as a result of reducing and preventing surface water pollution.

¹¹ The Commission Decision is available at http://ec.europa.eu/competition/state_aid/cases/249372/249372_1486195_132_2.pdf.

These costs include primarily the building and operating of purification plants, which accounts for about 60 per cent of the budget of water boards. The other 40 per cent of the budget is spent on monitoring, policymaking and rehabilitation of polluted water sites.

Purification plants treat effluents, which are mostly run-off rainwater and waste water of households and industry. Undertakings and households that discharge polluted waste water pay the pollution levy. The size of the levy is related to the extent of the pollution of the waste water.

Companies have the legal option to reduce or avoid this levy by pretreating their waste water in-house. However, according to the Dutch authorities, pretreating the waste water in-house has a negative impact on the functioning of the treatment plants. A large supply of pretreated waste water reduces the efficiency of the installation, increases its operating costs and ultimately raises the costs of the dischargers of waste water remaining in the system. These plants are technically set up to treat water with certain contamination values, and pretreated waste water disturbs that balance. More importantly, without the large dischargers of waste water, the treatment plants would be underused, which would result in economies of scale being lost and operating costs being raised. Then, if major dischargers of waste water were to opt out, it would lead to a considerable increase in levies for those still participating in the system (for example, they would have to bear the annual depreciation expense of the treatment plant on their own).

In summary, the objective of the measure is to allow the water boards to reduce the levy in order to stimulate companies to make full use of their plants, thereby ensuring their maximum effectiveness while keeping the levy for the other users at an acceptable level.

Eligible beneficiaries (ie companies that can apply for a reduction of the levy) are those companies that can demonstrate that they are technically and financially able to treat their waste water in-house for a price below the levy. The Dutch authorities want the reduced levy to remain above what a company would pay for in-house treatment. Additionally, the company must pay at least a minimum 50 per cent of the levy and must account for at least 5 per cent of the plant's treatment capacity.

D. COMPATIBILITY

The measure, according to the Commission, clearly constitutes state aid.¹² Interestingly, the effect on intra-EU trade is indirect. There is no direct competition

¹² Although the partial exemption from the levy appears to be a clear measure of state aid, one could argue that the exemption is a rational commercially decision that could be taken by a market operator. Since large dischargers can avoid the levy through in-house treatment of waste

between water boards or water providers in the EU (with the exception of suppliers of spring bottled water). The measure has an indirect effect on trade, however, because the beneficiaries are companies active in economic sectors such as chemicals, paper, beer, canned foods and soda drinks, where there is extensive trade.

The Commission assessed the compatibility of the aid under the EAG and found it to have an “indirect environmental benefit” because it preserves the efficiency of waste water treatment plants.

With respect to the necessity of the aid, the eligible companies are only those that impact on optimum utilisation of the waste water treatment plants. This is ensured by the requirement that a beneficiary’s discharges of waste water are at least 5 per cent of the plant’s treatment capacity.

Point 158(b) of the EAG stipulates that the full tax must substantially increase production costs. In this case, the Commission recognised that, “considering the fact that companies can opt-out and avoid paying the levy, the relevant production costs taken into account are the waste water treatment costs” (paragraph 39). The Commission then accepted that “without a subsidy the waste water treatment costs for beneficiaries would increase considerably” (paragraph 40). The Dutch authorities submitted evidence that companies opting out and treating the water themselves would save about 35 per cent of what they would have to pay to the water boards.

Point 158(c) of the EAG requires that the substantial increase in production costs, which the full application of the levy would bring about, cannot be passed on to customers without leading to important sales reductions. The Commission then makes a rather disingenuous statement:

“The fact that large dischargers investigate and identify concrete in-house alternatives to avoid the payment of the full levy provides an indication that they would not be able to pass the increased costs on. Otherwise, they would not spend resources trying to find alternative solutions to reduce these costs. However, since in order to reduce their levy by pre-treating their waste water or be eligible to the application of the levy reduction, companies would also incur additional treatment costs, the examination of the condition set out in point 158(c) of the Guidelines should take into account the specific features of the scheme under examination. In that respect, not only the beneficiaries’ costs but also the efficiency of the system as a whole and the objective of the measure need to be taken into account” (paragraph 44).

The above statement is wrong and mixes at least two different issues. First, it is wrong because, irrespective of whether the levy can be passed on to consumers or not, companies can reduce their costs through in-house treatment. Any

water, water purification plants need to induce them not to opt out. Dischargers do not obtain any undue advantage. Water boards cannot be accused of discriminating unjustifiably against other dischargers because the exemption from the levy can be objectively granted only to large dischargers whose opt out raises the operating costs of the water treatment plants.

reduction in costs, regardless of its origin, raises profits. It is irrelevant whether the savings cannot be passed on to consumers. Secondly, earlier in its decision the Commission examined the reduction in the costs of companies. Now it refers to the costs of the system as a whole. In fact, I think this is correct; but then the Commission should have calculated the impact of the levy on the costs of the water treatment plants under its analysis of point 158(b).

The rest of the decision is taken up by a general discussion of what would happen to the water boards and the remaining users without the levy reduction. Apart from a reference to a single example, the discussion largely repeats what is mentioned earlier at several points of the decision. Once more we see that the Commission's analysis of point 158(c) of the EAG is rather superficial and based on plausible arguments rather than hard facts.

E. TOWARDS MORE ROBUST ANALYSIS

Despite the analytical weakness identified above, I think this is one of the few cases where the notifying Member State is truly justified in granting tax reductions. The Commission missed an excellent opportunity to provide guidance for future cases. The Netherlands could have demonstrated the impact of the full levy on the operating costs of water treatment plants. Here is how it could have been done. The Annex provides a formal proof. The discussion below uses a numerical example to illustrate the argument.

Assume that, before the levy reduction, a plant treats 50 cubic metres of water per unit of account (day, month or year) and incurs a cost of 6 per cubic metre. This means that the total costs are 300. If it charges a levy of 6 to each company that discharges polluted water, it earns 300 in revenue and breaks even.

Now suppose that a company that discharges 5 cubic metres (ie a large discharger that accounts for 10 per cent of the total system) can treat the water internally at a cost of 5 per cubic metre. The total cost it incurs is 25 ($= 5 \times 5$) instead of 30 ($= 6 \times 5$). It therefore opts out of the system. However, because of diseconomies of scale, the operating costs of the plant increase to 6.5 when it treats only 45 cubic metres. The levy to remaining users must rise to 6.5 and the total cost of the plant is now 292.5 ($= 6.5 \times 45$). Although the company in question is better off, society as a whole is worse off. This is because the total costs borne by society for the treatment of 50 cubic metres is 317.5 ($= 292.5 + 25$). This is purely the result of the externality caused by the decision of the company to treat its effluent water internally. It leads to inefficient water treatment.

Incidentally, this numerical example also demonstrates that the Commission should have asked for proof not only that water treatment plants suffer extra

costs, but also that the extra costs borne by the water treatment plants and the remaining users exceed the benefits obtained by the large dischargers who opt out. In this way, any subsidy to induce opt in is certain to generate net benefits to society.

By reducing the levy to 5 and inducing the company not to opt out, the water board can improve the efficiency of the system. With the levy reduction and the company opting in, the costs of the plant are back to 300 ($= 6 \times 50$). However, the water plant cannot then revert to the original levy of 6 for the remaining users because it will experience a shortfall in its revenue. The revenue after the levy reduction will be 25 ($= 5 \times 5$) from the company opting in and 270 ($= 6 \times 45$) from the remaining companies—which gives a total revenue of 295. This means that, in order to break even after the levy reduction, it must raise the levy on the effluents of other companies slightly: it needs to charge 6.1 ($= (300 - 25)/45$) to the other companies. This outcome is good for society because costs are kept at 300, other companies pay a much lower increase and the large discharger is compensated for forgoing less costly in-house treatment.

This is how the Dutch authorities could have proven the overall benefits of the levy reduction and this is how the Commission could have required Member States to demonstrate that the aid is an appropriate, necessary and proportionate measure.

F. CONCLUSIONS

This article has argued that the environmental state aid rules 2007–2013 have created two puzzles. First, it is not clear why companies would accept to invest in environmentally friendly technology if they receive aid that covers only a portion of the extra costs. Secondly, it is equally puzzling how exemption from environmental taxes can protect the environment. Moreover, the justification for this exemption is often based on weak reasoning.

However, the article has also analysed a case which demonstrates that the effects of state aid can be quantified to establish that aid is both necessary for the recipients and in the overall interests of society. The case shows that it is also credible in certain situations that exemptions from environmental taxes can contribute towards improved environmental conditions. The case does not prove that such quantification can be achieved in all instances of environmental aid. Above all, however, it presents a line of analysis that should be followed at least in qualitative terms, if quantification is not possible.

ANNEX: FORMAL PROOF OF ENVIRONMENTAL BENEFITS

Let the cost function of a typical water treatment plant to be denoted by $C = F + aQ$, where F is the fixed costs, Q is the amount of treated water and a is a parameter that shows how C changes with Q . This implies that the cost of each additional unit of output (ie the marginal cost) and the average cost per unit of output are, respectively, $MC = a$ and $AC = F/Q + a$.

Let $AC1$ be the average cost before the opt-out and $AC2$ be the average cost after the opt-out. This implies that $Q1 > Q2$ and $AC1 < AC2$ because after the opt-out the output is lower and therefore the average cost is higher. The difference between $Q1$ and $Q2$, ΔQ , is equal to the amount of treated water discharged by the companies that opt out. Let their output be Qj .

Let the difference between average costs be indicated by ΔAC . That is

$$\Delta AC = AC2 - AC1 = F/Q2 + a - F/Q1 - a = F(Q1 - Q2)/Q1 Q2$$

Therefore, $\Delta C = F\Delta Q/Q1 Q2$, where $F\Delta Q = Q1 - Q2$.

The burden of increased costs borne by the remaining clients, ΔC , is the difference in average costs multiplied by the amount of treated water, $Q2$. Formally, it is given by

$$\Delta C = Q2\Delta AC = Q2F\Delta Q/Q1 Q2 = F\Delta Q/Q1.$$

However, since ΔQ is the same as the quantity of treated water discharged by companies that opt out, it follows that the additional burden of the remaining companies is $\Delta C = FQj/Q1$.

This is an important result. It shows that the higher the share of the companies that opt-out in relation to the total quantity of treated water, the higher the burden for the remaining companies.

Assume now that, for simplicity, the levy charged by a water treatment plant equals AC . Therefore, a company will opt out if it gains by the opt-out. That would be the case if the levy is higher than its own costs of treating effluent water internally, ACi . That is, opt-out occurs when $Gi = (AC1 - ACi)Qj > 0$.

We can now derive two conditions for state aid to be socially beneficial.

Condition 1: State aid must be beneficial to society by generating net positive effects (the principle of necessity). This would be the case when $\Delta C > Gi$ or $(FQj/Q1) > Gi$.

Condition 2: State aid must not lead to excessive gain for the recipients (the principle of proportionality). This would be the case when a subsidy, S , satisfies the conditions: $S < \Delta C$ and $S < Gi$. Since it must also be that $\Delta C > Gi$, we conclude that $S < Gi < \Delta C$.

Both of these conditions can be quantified, as would have been feasible in the Dutch case of treatment of polluted water.