



COMMISSION OF THE EUROPEAN COMMUNITIES

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**COMMISSION STAFF WORKING DOCUMENT**

*accompanying the*

**COMMUNICATION FROM THE COMMISSION TO THE COUNCIL AND THE  
EUROPEAN PARLIAMENT**

**on the possibilities of further improving  
the environmental characteristics of recreational craft engines**

**IMPACT ASSESSMENT SUMMARY**

{COM(2007)313}  
{SEC(2007)770}

## **1. INTRODUCTION**

The Impact assessment was built on a detailed process which consisted of two main phases. In the first phase, a stocktaking study was carried out to identify the state of the art and expected developments in pollution reduction technologies for recreational marine engines and to make an inventory of existing and future emission legislation for recreational craft in other parts of the world. This resulted in identifying four possible regulatory scenario options for further reducing emissions from recreational craft. The study report<sup>1</sup> also addresses in detail the other elements referred to in Article 2 of Directive 2003/44/EC, which the European Parliament and Council have asked the European Commission to take account of in the above mentioned Communication. The second phase of the assessment process consisted of a detailed impact assessment study to analyse the technical costs and to identify the environmental, economic and social impacts of each of the four scenario options developed in the context of the stocktaking study. The costs and benefits of these impacts have been quantified and compared through a multi-criteria analysis using the “no policy change” option as the baseline option for the comparison. Stakeholders which could be significantly affected by, or involved in, further developments in emission legislation for marine recreational craft in the European Union have been widely and closely consulted by the study contractors throughout the entire assessment process. In addition, the assessment process has been accompanied by a number of stakeholders meetings organised by the Commission services, aimed at also informing and consulting the other stakeholders involved in the implementation of the Recreational Craft Directive (competent authorities in the Member States, standardisation and user organisations and notified bodies).

## **2. WHAT ISSUE IS THE POLICY EXPECTED TO TACKLE?**

The use of recreational marine craft in Europe contributes to environmental costs with regard to both exhaust emissions and noise emissions. In Europe recreational marine craft are estimated to contribute approximately 0.34% of total carbon monoxide emissions, 0.5% of total hydrocarbon emissions and 0.1% of total NO<sub>x</sub> emissions. Although the aggregate emissions from recreational marine craft are low compared with other sources, they can lead to localised problems in areas that have a high concentration of recreational craft at certain times of peak activity (such as weekends). The implementation of the exhaust emission limits specified in Directive 2003/44/EC will contribute substantially in reducing the amount of pollutants released into the air and water by recreational craft and as such contribute to the improvement of air and water quality in these areas as well. Notwithstanding the above, in Article 2 of Directive 2003/44/EC the European Parliament and the Council request the Commission to report on the possibilities of further improving the environmental characteristics of recreational marine engines.

## **3. WHAT ARE THE MAIN POLICY OPTIONS AVAILABLE?**

The basic approach followed to reach the objective, and the four possible regulatory scenario options have been identified are schematically presented in figure 1.

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<sup>1</sup> [http://ec.europa.eu/enterprise/maritime/maritime\\_regulatory/directive\\_03\\_44.htm](http://ec.europa.eu/enterprise/maritime/maritime_regulatory/directive_03_44.htm)

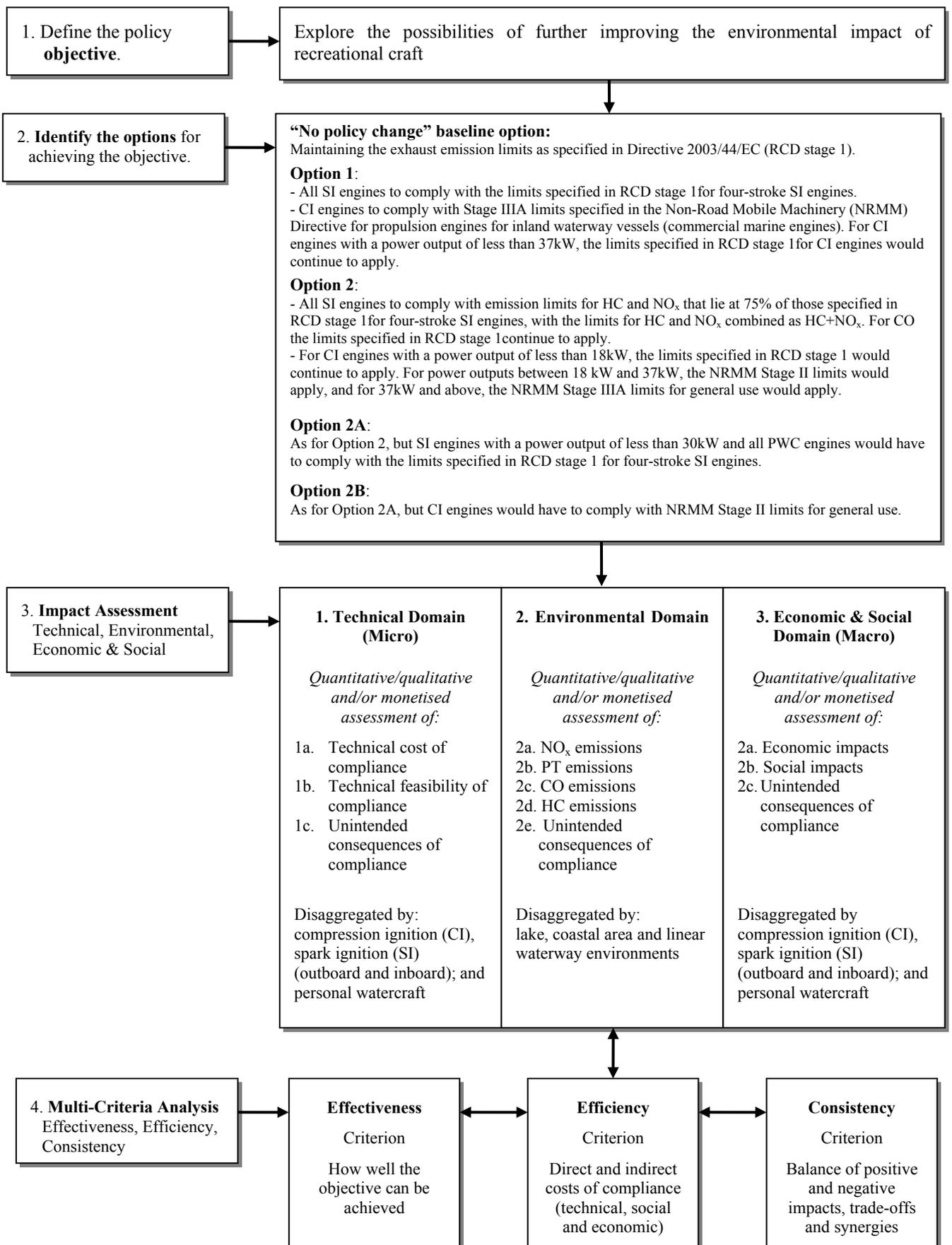


Figure 1: Summary of the impact assessment approach followed

4. **WHAT ARE THE IMPACTS – POSITIVE AND NEGATIVE – EXPECTED FROM THE DIFFERENT OPTIONS IDENTIFIED?**

4.1. **Summary of the economic and social impacts**

Option	CI Engines (€m)	SI Engines (€m)	PWC Engines (€m)	Total (€m)
1	147,4	6,4	2,0	155,8
2	245,2	114,7-127,3	5,1	365,0–377,6
2A	245,2	98,4-111	2,0	345,6–358,2
2B	150,2	98,4-111	2,0	250,6–263,2

Table 1: Summary of Gross Compliance Costs (lower-upper band) – (€m)

Option	CI Engines (%)	SI Engines (%)	PWC Engines (%)
1	+4,36	+0,7%	+1,9
2	+10,04	+10,0%	+4,9
2A	+10,04	+7,7%	+1,9
2B	+4,34	+7,7%	+1,9

Table 2: Summary of Estimated Price Effect (% increase in unit retail price)

Option	CI Engines	SI Engines	PWCs	Total
1	-37	-86	-6	-129
2	-85	-86	-16	-187
2A	-85	-86	-6	-177
2B	-37	-86	-6	-129

Table 3: Summary of Employment Effect (estimated number of direct and indirect job losses)

**Impact on number of jobs:** Case study evidence suggests that any further emission limit reduction over and above the baseline option (“no policy change” scenario) would seriously endanger the future of the only wholly European-based SME manufacturing outboard engines, involving a loss of 86 jobs on an estimated total of 320 full time equivalent direct and indirect jobs created by outboard engine manufacturing and assembling enterprises in Italy and France.

## 4.2. Summary of the environmental impact assessment

The results of the environmental impact assessment are summarised in Table 4 below, from which emerges the emission reduction potential for each of the four regulatory scenario options compared to the baseline option

pollutant→ ↓Scenario	CO		HC + NO <sub>x</sub>		PT		Total	
	kton/y	%	kton/y	%	kton/y	%	kton/y	%
Baseline option	153,1		40,9		0,6		194,6	
Option 1	153,1	0	32,7	-20	0,4	-33	186,2	-4,3
Option 2	153,1	0	28,2	-31	0,4	-33	181,7	-6,6
Option 2A	153,1	0	27,4	-33	0,4	-33	180,9	-7,0
Option 2B	153,1	0	31,5	-23	0,4	-33	185,0	-5,0

Table 4: estimated total amount of EU recreational marine exhaust emissions in kiloton per year and emission reduction potential in % for the regulatory scenario options compared to the baseline option

## 4.3. Comparing the impacts of the regulatory scenario options (multi-criteria analysis)

In accordance with the Commission's Impact Assessment Guidelines, a multi-criteria analysis has been made to produce a dynamic comparison of the four scenario options against the baseline option with regard to the following criteria: effectiveness (how well can the emission reduction objective achieved), efficiency (direct and indirect costs of compliance) and consistency (balance of positive and negative impacts - cost/benefit ratio). The results of this analysis are summarised in Table 5.

Criterion →	effectiveness (total emission reduction)	efficiency (total compliance & social cost)	consistency (compliance & social cost per kton/y emission reduction)
Option 1	8,4 kton/y (-4.3%)	+155,5 m€ -129 jobs	+18,5 m€ -15,4 jobs
Option 2	12,9 kton/y (-6.6%)	+371,3 m€ -187 jobs	+28,8 m€ -14,5 jobs
Option 2A	13,5 kton/y (-7.0%)	+351,9 m€ -177 jobs	+26,1 m€ -13,1 jobs
Option 2B	9,6 kton/y (-5.0%)	+256,9 m€ -129 jobs	+26,8 m€ -13,4 jobs

Table 5: results of the multi-criteria analysis for the scenario options compared to the baseline option in relative quantitative terms

## 5. COMMISSION POSITION AND JUSTIFICATION

From the results of the multi criteria analysis it can be concluded that each of the scenario options would have a social cost with between 13 to 15 jobs lost for each kiloton annual pollution reduction, combined with a relatively low reduction potential (between 4.3% and 7%) on the contribution by recreational craft to overall pollution.

In view of the call by Heads of State at the Lahti informal meeting in October 2006 for urgent action on climate change and the Commission's commitment to lead this policy process, a maximum effort should be made to further optimise this reduction potential. To achieve this goal, further scenarios should be explored and assessed which could be based upon the most stringent and technology driving emission rules for recreational craft already applied or envisaged in other parts of the world, for instance in the United States of America. Such approach would also have to take into account the need for EU engine manufacturers operating on the global market to maintain and strengthen their competitive position vis-à-vis third country competitors. When developing such an approach careful consideration will also have to be given to the vulnerable position of EU small and medium sized enterprises operating on the European market only.

Indeed, the social impact assessment has identified that the social cost of any further emission reduction measures would mainly be borne by small and medium sized enterprises established in the EU, and case study evidence indicates that implementation of any of the regulatory scenario options would seriously endanger the future of the only outboard engine manufacturer genuinely established in the European Union.

Therefore, appropriate accompanying measures might be envisaged to provide an optimal balance between maximum emission reductions and minimal social costs. Such measures could, for instance, consist in providing exemptions for low volume manufacturers, based upon mechanisms already applied in other Community legislation.

More time and study work will be needed to assess the impact and appropriateness of such an ambitious approach towards minimising the contribution of motorised recreational craft to climate change whilst at the same time mitigating the associated social costs and negative impacts on the competitiveness of small and medium sized enterprises established in the EU.

## 6. ABBREVIATIONS

CO:	carbon monoxide	CI:	combustion ignition
HC:	hydrocarbons	SI:	spark ignition
NOx:	nitrogen oxides	PWC:	personal watercraft
PT:	particulates	RCD:	recreational craft directive
SME:	small and medium sized enterprise		