



COMMISSION OF THE EUROPEAN COMMUNITIES

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COMMISSION STAFF WORKING DOCUMENT

Accompanying the

Proposal for a

DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

**amending Council Directive 80/181/EEC on the approximation of the laws of the
Member States relating to units of measurement**

IMPACT ASSESSMENT

**[COM(2007) 510 final
SEC(2007) 1137]**

1. SECTION 1: PROCEDURAL ISSUES AND CONSULTATION OF INTERESTED PARTIES

1.1. Organisation and timing

There is a sundown clause in the directive which would stop all use of supplementary (non-metric) indications by 2009 and this can give problems to economic operators if the sundown clause is applied. Also the directive needs to be updated to technical progress, meaning in this case the inclusion of new metric units about which there is international agreement.

Commission services published a working document which had been subject to an inter service consultation in December 2006 for public consultation until 1 March 2007. A report on the public consultation and the conclusions to be drawn was, after inter service consultation, published in July 2007. There has not been an inter service steering group, but the inter service consultation has involved 9 Directorates-General.

1.2. Consultation and expertise

No external expertise was used other than the contributions to the public consultation, which among others came from experts in the field (academics, teachers) but mostly industry.

Stakeholders were consulted during the 10-week period up to 1 March 2007. All reactions were published on the Europa web site by mid April, except for those which were confidential and those of individual firms where there was the potential risk of a breach of confidentiality.

The Commission's minimum standards have been met.

All input from stakeholders to the public consultation has been presented and discussed in the report on the public consultation. The main finding can be summarised as the following.

- Industry is unanimous in wanting to lift the sundown clause and indefinitely extend the sundown clause. This is also supported by the US government.
- Those concerned in industry and science are in favour of including the new SI-unit of catalytic activity, the katal, in the list of permitted units of measurement.
- Member States agree that application of the directive has not lead to major problems during nearly three decades and want the current practice to be continued. There were no examples given by industry that would indicate problems.
- Consumers in the UK are divided with some being in favour of metric-only and pointing to the mix-up caused by indications in shops in non-metric units. Others, who probably represent a large majority, are in favour of continued use of supplementary indications next to metric indications and the indefinite use of the existing limited exemptions (pint, mile, troy ounce), which has also been requested by the UK. A minority is in favour of rolling back metrication and allowing indications only in imperial units, but this has not been requested by the UK.

The working document, report on the public consultation and all contributions to the consultation are available on the Europa website (http://ec.europa.eu/enterprise/prepack/unitmeas/uni_ms_en.htm).

The public consultation has influenced the report by means of a unanimous view from industry together with a credible assessment of compliance costs. Furthermore the lack of complaints as regards the application of the current directive indicated that, in general, there apparently are no problems and this was confirmed by the authorities. Finally the views expressed as regards the exemptions in the UK and Ireland confirmed majority support for continuation and that there were no major obstacles to cross border trade due to these exemptions.

2. SECTION 2: PROBLEM DEFINITION

2.1. What is the issue or problem that may require action?

The directive has been in existence since 1980 and has served to standardise the use of legal units of measurement within the EU in accordance with the International System (SI) promulgated by the competent international body, the Bureau International des Poids et Mesures. It has also gradually extended the use of metric units, which were already applied in most Member States, to the UK and Ireland, thus achieving a common market. There is a sundown clause (Art. 3.2) in the directive, which would stop all use of supplementary (non-metric) indications by 2009. If it were to apply, the EU would require all labelling to be in metric-only and this can give problems to economic operators because the USA requires non-metric labelling next to metric. The directive (Art. 6a) specifies that issues regarding its implementation, and in particular the matter of supplementary indications, should be further examined. Also the directive needs to be updated to technical progress, meaning in this case the inclusion of new metric units about which there is international agreement. Finally the directive requires UK and Ireland to fix a date for ending a limited number of exemptions they still enjoy (Art 1.b: pint, mile, troy ounce), but it can be observed that these usages have continued for many years without impediment to the single market.

2.2. What are the underlying drivers of the problem?

Underlying drivers of the problem are:

1. Different units of measurement confuse consumers and represent a barrier to trade leading to potential fragmentation of the Internal Market. Hence, the international agreement on using metric units and the directive.
2. For traditional reasons there is a strong attachment to imperial units and industry/engineering often uses these units instead of metric.
3. Metric-only units are not accepted by the United States and therefore trans-Atlantic trade requires indications in non-metric units where they are needed in order to comply with US laws (federal and 3 states).
4. Due to innovation the system of metric units is periodically extended and this requires updates to the directive. On the other hand, there remain many instances in which there is no metric unit available, e.g. binary measurement in computing (bits, bytes).
5. Public opinion in the UK and Ireland seems strongly in favour of retaining those non-metric usages still permitted by the Directive.

2.3. Who is affected, in what ways, and to what extent?

All economic operators are affected, as are consumers and authorities. Law in all walks of life requires units of measurement. Member State governments have signed the international agreement on the system of metric units (Metre Convention), which obliges them to base their laws on the agreement. The directive at the EU level guarantees a common approach.

Units of measurement affect individual groups in many ways. Virtually all transactions require measurement in some form or other and this concerns economic operators and consumers. This is true for domestic as well as for cross border trade and this is where incompatibility of units can become a barrier to trade. Information to the public can be quantitative and in some cases good comprehension at all times by all is even a prime safety issue. Excises and levies are often calculated on the measured quantity so involve authorities. Goods and financial markets depend on quantities. The directive is effective in all these cases.

Laws in 47 out of 50 states of the US have changed over the past decade to allow metric-only labelling. This concerns about half of products. The other half is covered by federal law requiring both metric and US inch-pound indications, so in these cases metric-only labelling remains prohibited. It remains to be seen whether there is sufficient support in the US at the federal level for allowing metric-only labelled products to enter the market next to dual labelled products. Given consumer and industry preferences in the US dual labelling can be expected to remain for a very long time. The sanction of a deadline at a certain date, enticing as it may seem, would, however, backfire if really carried out. A metric-only EU prohibiting supplementary indications would force US exporters to relabel all products they export to the EU. This would be a strange way of thanking the US for adapting their state and federal laws to conform to international standards. By requiring metric-only labeling and no longer authorising supplementary indications on the Internal Market the EU would be imposing a new barrier on trade to products from the US.

2.4. How would the problem evolve, all things being equal? N.B. Scenario(s) should take into account actions already taken or planned by the EU, Member States and other actors.

The sundown clause in the directive by 2009 would cause operators to adapt to a situation where the EU requires all labelling to be metric only: US imports into the EU would need to be relabelled, as would EU exports to the USA. Also sectors would need to be excluded from the scope of the directive for which no metric measurement exists.

The issue of metric-only labelling has regularly been the subject of the transatlantic business dialogue (TABD) which recommends “manufacturers should have the option of using only metric units or metric and a supplemental unit in response to customer needs and preferences. Therefore, the TABD urges continued progress in the U.S. at the state and federal level to approve “metric-only” as an option at all levels of commerce. Similarly, the EU must also provide manufacturers the option to use only metric units or metric and a supplemental unit of measurement”¹.

¹ TABD Cincinnati recommendations of 18 November 2000, p. 6.
<http://static.tabd.com/manilaGems/2000CincinnatiCEOReport.pdf>

In the case of new metric units, due to technical progress, Member States would implement national laws, which in certain cases may require relabelling, notably in the case of different moments of implementation of these national laws.

UK and in some cases Ireland would need to fix a date for ending the last exemptions, where they are still being applied (pint for milk in returnable bottles and beer and cider on draught, mile for road traffic signs, speed and distance measurements, troy ounce for transactions in precious metals). The exemption of the acre for land registration however is no longer in use, because of changes in administrative procedures in both States.

2.5. Does the EU have the right to act – Treaty base, ‘necessity test’ (subsidiarity) and fundamental rights limits?

EU is not a signatory of the Metre Convention agreement on metric units, but all Member States are and they are bound by the agreement to implement it in their national legislation. The agreement is not binding, so Member States could choose to base their laws in different ways on the agreement, such as was the case before 1980 and may repeat itself in the case of new units. EU action is necessary to ensure a common approach.

The existing directive ensures a common approach on the basis of Article 95 of the Treaty with as result that units of measurement are harmonised on the Internal Market. As a result there are no barriers to trade on the Internal Market due to units of measurement, which are in line with international standards.

3. SECTION 3: OBJECTIVES

3.1. What are the general policy objectives?

The general objective of the directive is to ensure that the use of units of measurement is harmonised on the basis of the international agreement on the system of SI units for expressing quantities.

The general policy objective is to better regulate under the condition of simplification where possible. In the case of the directive on units of measurement this means reducing exemptions, limiting provisions concerning regulatory follow-up and providing market operators with a stable and permanent regulatory environment.

The recently agreed Directive on Nominal Quantities for Prepackaged Products² is an example of a simplification exercise which creates trade because any size that is appropriately SI labelled and possibly with supplementary indications may be sold everywhere and this benefits scale effects and competitiveness.

The required update mentioned in the problem definition (concerning the difficulty to apply the sundown clause on supplementary indications) is due to external influences, i.e. the USA is still engaged in the slow process to fully adapt its legal system to the use of metric-only labelling, whilst industry is comfortable with measurements in non-metric units, due to tradition or lack of metric alternatives.

² http://ec.europa.eu/prelex/detail_dossier_real.cfm?CL=en&DosId=191876

As regards fixing a date to end the current exemptions (pint for milk in returnable bottles and beer and cider on draught, mile for road signs and speed indications, troy ounce for transactions in precious metals), public opinion in the UK and Ireland is very much in favour of maintaining them, where still in use, and does not see any need for change.

3.2. What are the more specific/operational objectives?

The operational objective is to make the minimal necessary changes to the directive with a view to continuing current conditions of enforcement which have worked well and to general satisfaction, as well as to clarify the continuation in legal terms as regards the continuation of exemptions for the UK and Ireland which are still used and scrapping any exemption no longer in use.

3.3. Underline the consistency of these objectives with other EU policies and, if applicable, horizontal objectives, such as the Lisbon and Sustainable Development strategies or respect for fundamental rights.

These objectives fit into the Community policy of better regulation and simplification, and are in line with the Lisbon strategy. The objectives aim to continue free circulation of goods and services on the Internal Market consistent with international standards. In line with better regulation and simplification, changes are kept to the minimum and continuity of enforcement is best ensured. The objectives are to maintain conditions that have proven to be conducive to competitiveness of European enterprises.

4. SECTION 4: POLICY OPTIONS

4.1. What are the possible options for meeting the objectives and tackling the problem?

N.B. the ‘no EU action’ option should always be considered and it is highly recommended to include a non-regulatory option, unless a decision of the College has already ruled this out.

Option 1 - No action: sundown clause would mean that by end of 2009 supplementary indications are no longer allowed. There could be a need to review the existing acquis requiring indications in non-SI units in specific cases such as kcal. No adaptation to technical progress. The UK and Ireland would remain obliged to fix a date ending the remaining exemptions.

Option 2 - Repeal the directive: Member States would be free to base national law on international standards, as was the directive. Some Member States may for that reason decide not to have any regulation. Mutual recognition would apply according to Article 28 of the Treaty.

Option 3 - Update the directive: adapt the directive to indefinitely allowing supplementary indications. Adaptation to technical progress by including the new metric units of measurement. Adapting the scope to include additions to the treaty since 1980 of new area of EU responsibilities, which rely on measurement (consumer affairs, environment). Supplementary indications cover sectors that use measurement for which no metric units exist, whilst there is no need to review existing acquis requiring indications in non-SI units

such as kcal. The requirement for UK and Ireland fixing a date for exemptions still in use could also be repealed and any exemptions no longer used by these Member States repealed.

4.2. Which options have been discarded at an early stage and why?

No option has in principle been excluded beforehand.

The option of further time limited extensions, i.e. extending the authorisation of supplementary indications for a fourth ten year period until 2019, however, has not been further considered due to three legal reasons and a political one:

- Restricting the use of non-SI units could create extra risks which could go against essential requirements stipulating that the benefits to a patient must outweigh the risks in the IVD Directive 98/79/EC.
- Labelling in both Joule (SI) and ‘Kcal’ (non-SI) is prescribed by the nutritional labelling Directive 90/496/EEC and prohibiting it would require a change to that directive. A research study indicated that consumers “preferred calories to joules as a measure of energy”³.
- From an intellectual property rights perspective, allowing the use of supplementary indications takes a similar approach to Rule 10 of the Regulations under the Patent Cooperation Treaty (PCT) of the World Intellectual Property Organisation (WIPO), which lays out the rules for physical units⁴. The PCT requires metric units to be used but allows other units if accompanied by metric units. As it does not permit national authorities to impose more stringent formal requirements than those under the PCT, indefinitely allowing supplementary indications would avoid a clear inconsistency between the PCT and European legislation.
- The sanction of a deadline at a certain date, enticing as it may seem, would, however, backfire if really carried out. A metric-only EU prohibiting supplementary indications would force US exporters to relabel all products they export to the EU. This would be a strange way of thanking the US for adapting their state and federal laws to conform to international standards. By requiring metric-only labeling the EU would be imposing a new barrier on trade to products from the US.

5. SECTION 5: ANALYSIS OF IMPACTS

5.1. What are the likely economic, social and environmental impacts of each of the short-listed options?

Administration costs incurred under the three options are the following:

- Option 1: Metric-only would require EU exporters to separately label products and revise manuals of goods for export to the United States and similar costs would be

³ European Heart Network “A systematic review of the research on consumer understanding of nutrition labelling,” June 2003, pp. 28-30

<http://www.ehnheart.org/content/ItemPublication.asp?docid=4517&level0=1455&level1=1499>

⁴ http://www.wipo.int/pct/en/texts/pdf/pct_regs.pdf

incurred by foreign exporters to the EU. Estimate €250 million to €1250 million, half permanent and half one-off, with costs higher for SMEs.

- Option 2: Risks of high costs due to permanent confusion in cross-border trade and transactions and high costs due to one-off errors such due to mix-ups in specifications such as in the case of the Marslander.
- Option 3: continuation of current system carries no additional administration cost. For reasons of proportionality, i.e. the preferred option 3 concerns the extension of the current situation, the EU standard cost method has not been applied.

5.1.1. Option 1 - No action

Applying the sundown clause, would cause administration costs in EU-US trade, the estimates of which are based on the feedback from the respondents to the public consultation, which is retaken in the Annex. Metric-only would require re-labelling and revising manuals of goods produced in the EU for export to the United States from 2010 onwards and would lead to administration costs amounting to 0.02% of turnover for large firms and up to 0.2% of turnover for small firms. Mechanically, metric-only potentially could lead to social effects in the form of more employment, but it is expected that employment will be lost in those cases where SME firms cannot cope with rising costs, probably leading to a zero sum, although this is uncertain. With total EU exports to the USA amounting to €315bn, costs of the change between 0.02% and 0.2% could amount to administration costs of between €62 million and €630 million for European industry, half of which is one-off and half of which is permanent. These estimates are difficult to verify but seem fairly consistent and coming from various sources, at least some of which can be considered to be independent (firms, sectors, overall from both USA and EU). The range of costs is large due to the fact that small enterprises could have much larger costs, due to lack of scale. The division between one-off and permanent has been taken down the middle, because of the nature of the various costs, e.g. redesign might be one off: rewriting a manual may be one-off whilst relabelling is recurring and therefore permanent. These costs would be EU-wide.

Prohibiting the use of supplementary indications could increase the legal uncertainty of a number of industries that rely on supplementary indications for purposes of design and specification of spare parts. This cost is difficult to assess and may be large given that these problems have not surfaced in practice as long as supplementary indications are allowed.

A legal consequence is that references in specific EU laws to non-SI markings (e.g. kcal) may possibly need to be repealed and labels adapted. However a sufficiently long application time could be taken into account to minimise the costs of relabelling for industry complying with this change. There may also need to be costs to school consumers who say they better understand kcal and who will incur opportunity costs.

There would be no adaptation to technical progress to include the definition of “katal” meaning that there is no harmonised update of the directive to the existing international standard. Some Member States may already have made the change in national law, which means that manufacturers and consumers in these states have a legal base for applying the international standard. In other countries this may not be the case, which implies a legal inequality in the sense that, where there is no legal base, domestic production is not covered by a legal base whilst imports are. Not adapting the directive will possibly lead to legal

uncertainty (impossible to monetize) and missing the benefits of abiding legally with the international standard.

Applying only metric units could be a benefit for some consumers in the UK who currently incur opportunity costs understanding and comparing non-metric units in the UK and Ireland. Stakeholders gave no estimate of such benefits but assuming as a working hypothesis that 5% of adult population (2.5 million persons) experiences problems with this and would no longer take rectifying measures by buying calculator (€20, one off saving) and no longer need to spend 10 hrs per year using it at an opportunity cost of €5 per hour, there would be social benefits to consumers resulting from a one-off saving on calculators of €50 million and from an annual saving on opportunity costs of €125 million. These benefits are limited to only UK and Irish consumers. Social effects such as the employment loss in making calculators would be minor and be primarily outside the EU whilst there would be a minor retail loss in UK and Ireland due to the not selling of calculators. On the other hand these benefits will be possibly more than offset by those who would have to do the calculation back to imperial units if there would be only metric units. The UK Metrics Association contends that “experience indicates that it is far simpler and quicker just to set aside imperial units and to learn to visualise and use metric units by practical example without the intermediary stage of converting from imperial units.”⁵ This view is, however, may not be applicable to a majority of UK citizens and industry. Those who do not understand metric units are, in particular, the elder generation who are particularly vulnerable in this respect. Social costs and benefits may well cancel each other out, with probably a net cost to a majority of mainly elderly consumers.

Applying the sundown clause would conceivably not have any environmental effects.

Fixing of a date for the end of the exemptions for UK and Ireland in Article 1b causes change that would invoke costs somewhere in the future.

- Adapting of road signs in the UK would cost an estimated €100 million if phased in gradually⁶ whilst it could amount to €1.1bn if implemented in one go⁷.
- The London bullion market is the leading market for transactions of precious metals as a financial asset would be at a costly disadvantage with its worldwide competitors in Zurich, Tokyo and New York where the troy ounce is the main unit of measurement – the exchange and the UK government contend that a change could cause London to lose its dominant position.
- The cost of getting rid of returnable pint milk bottles would be zero if the phasing-in is gradual and abolishing the pint of draft beer and cider would not involve any cost with an appropriate phasing-in. There do not, however, seem to be any palpable benefits but the change could certainly cause some utility disbenefits possibly endangering health due to misunderstanding of quantities in the case of draught beer.

⁵ “A very British Mess”, A report by the UK Metric Association, 2006, paragraph 6.9 on p. 38

⁶ Report by the UK Metric Association “Metric signs ahead” (2006)

⁷ Estimate by the UK Department of Transport (2006).

<http://www.dft.gov.uk/pgr/roads/tss/general/estimatingthecostofconversion4155>

5.1.2. Option 2- Repeal the directive

Repealing the directive could lead to Member States interpreting the Meter convention differently.

The Meter-Convention is a treaty of which all EU Member States are signatories. Nevertheless the Member States of the Meter-Convention are not legally bound to exclusively implement the SI system. Other units of measurement are allowed.

To have a comparable common basis for all the measurement done in Europe in the Member States and between Member States using the same measuring instruments it is necessary to have the same legal units of measurement.

If there would be no directive (or regulation) any unit of measurement could be applied. If a Member State would implement solely the SI system on its national territory, the jurisprudence of the European Court of Justice would force it to accept all the other measuring units allowed in any other Member State of the European Union. This would lead to a situation in Europe of the past. The Cassis-de-Dijon jurisprudence would lead to nearly endless possibilities for units of measurements. If the SI system is no longer the reference system for Europe other units (US fluid ounces) could be allowed as sole indication in one or more Member States. This would lead to a very unclear market situation in Europe and thus to confusion in cross-border trade, customs, taxation and internal transactions.

Under option 2 relatively large increases of employment may be possible in order to address the increased confusion and inefficiencies, but these will be annulled by the losses of scale effects and EU competitiveness notably in the case of SMEs which account for the largest growth of employment.

While it is difficult to monetize these effects it would appear that information costs would increase significantly on a permanent basis, both for producers, employees, authorities and for consumers. An example of a costly one-off loss was the US spacecraft Marslander, which crashed on Mars due to malfunctioning because inch/pound indications had been mixed up with metric indications in the production phase. Risks like this would increase.

5.1.3. Option 3 - Update the directive

Extending the use of supplementary markings for an indefinite period would have the opposite effects as mentioned above under Option 1. There do not seem to be any additional costs for industry caused by extending the use of supplementary indications, because there will be no change to the current situation while the opportunity benefits would be the saved costs of the sundown clause. On the other hand the current opportunity costs of some consumers in UK and Ireland would continue. Under option 3 there is no change of employment to be expected. There would no additional costs compared to the situation as it is and in this light a full analysis of administrative costs based on the standard cost model would be disproportionate.

Supplementary indications cover sectors that use measurement for which no metric units exist. Application of the existing directive during the past 30 years has shown that authorities have been accommodating and the public consultation did not deliver cases in practice to the contrary. The advantage is also this allows a synergy i.e. were metric units to be developed, there exists already the legal framework for a smooth and gradual transition to the new metric

situation, with supplementary indications being allowed to continue, e.g. binary measurements in computing (bits, bytes). Extending supplementary indications would therefore allow the current wide scope of the directive to be maintained.

Adding consumer protection and environmental protection, at the end of Article 2(a), does not lead to any change in society given that currently units of measurement are already being applied for these reasons. What has changed is the Treaty itself since the inception of the directive and it is for this administrative reason that the change should be considered. There are no costs expected whilst the current beneficial situation will continue.

Include the newly named derived metric unit “katal” in table 1.2.3 “SI derived units” in the Annex. This is an update to apply the existing international standard, which is already overdue. Some Member States may already have made the change in national law, which means that manufacturers and consumers in these states have a legal base for applying the international standard. In other countries this may not be the case, which implies a legal inequality in the sense that where there is no legal base domestic production is not covered by a legal base whilst imports are. Adapting the law will create legal certainty (impossible to monetize) and not have the administrative costs. There do not seem to be other impacts on the costs side. The benefits of abiding legally with the international standard are many.

Deleting the obligation of fixing a date for the end of the exemptions for UK and Ireland, in Article 1b, concerns the use of the pint as indication for milk in returnable bottles and draught beer and cider in both UK and Ireland, the use of indications in miles for road signs and traffic speeds in the UK and the use of the troy ounce for precious metals, notably on the London bullion market. Currently all of these uses are deeply engrained, some having cultural significance, and do not give rise to discomfort which can be considered a major benefit. The Commission is not aware of any costs associated with the continuation of these specific exemptions. No change would give opportunity benefits. Maintaining the pint for milk in returnable bottles and draught beer and cider would maintain the current utility benefits. The non-adapting of road signs in the UK could save between 100mln to €1100mln) depending upon the speed with which the change is implemented. Maintaining the competitiveness of the London bullion market would allow the market to continue to be based in London. It would seem that there are no costs and only benefits associated to a continuation of the existing exemptions.

End the exemption for land registration by taking out the third line in the table in Chapter II of the Annex. This exemption is no longer applied in UK and Ireland and therefore ending it does not bring costs. The only non-monetary benefit is simplification.

5.2. List positive and negative impacts, direct and indirect, including those outside the EU.

Applying the sundown clause in 2009 would cause costs of a similar magnitude, as under option 1 above, in industries in non-EU countries exporting to both the European and US market. For the rest it seems foreign producers would not be influenced. The opportunity benefits of the alternative in option 3 are worldwide, whilst there do not seem to be costs to foreign exporters.

5.3. Specify uncertainties and how impact may be affected by changes in parameters (uncertainty and sensitivity analysis).

The monetised effects are subject to great uncertainty. The wide margin expressed for the costs due to the sundown clause reflects that smaller enterprises will be relatively harder hit than large ones.

The industry costs of the sundown clause have been quite arbitrarily divided in half and it could be that the repeating costs are much higher, given that relabelling will be a permanent as well as a one-off activity.

The opportunity cost of the current situation to a minority of UK and Irish consumers is highly uncertain and could be considerably lower compared to the benefits to the great majority UK citizens who apparently prefer the current situation above change as seems to be the case. The cost estimates for consumers are difficult to corroborate but reflect that a larger share of the population apparently would suffer disadvantages from metrication than the share that would benefit.

5.4. Include impacts in the EU and outside the EU.

As said, impacts are mainly within the EU except for the sundown clause, which would hit industry abroad in an equal way.

5.5. Specify which impacts are likely to change over time and how.

Given the high uncertainty it is difficult to indicate which impacts will change over time. Probably there will not be changes in the repeating costs, which are largely due to the separate labelling required for the US and the EU, if the sundown clause were to be applied (Option 1).

5.6. As relevant, specify which social groups, economic sectors or particular regions are affected.

It concerns business all over Europe and outside of Europe and a minority of citizens in the UK and Ireland.

5.7. What are the potential obstacles to compliance?

There do not seem to be obstacles to compliance depending on the option.

Option 1 would probably cause quite substantial compliance costs, because the change to metric-only in the EU will be difficult to apply by operators.

Option 2 also requires change and it may too see substantial compliance costs notably due to uncertainty and differences in national legal situations.

Option 3 would not lead to potential obstacles to compliance, given that it continues current practice, which has been satisfactorily applied without major problems during the past 30 years.

6. SECTION 6: COMPARING THE OPTIONS

6.1. Indicate how positive and negative impacts have been weighed for each short-listed option.

Impacts have been distinguished into one-off and annual costs and benefits. One-off costs will need to be borne in the first year or before that.

6.2. Present results of the weighing

Table 1. Costs and benefits of Options (Benchmark = current situation)

Mln €	Benefits		Costs	
	One-off	Annual	One-off	Annual
Option 1 – No action	50	125	>212 - 1780	> 188 - 755
Option 2 – Repeal the directive	0	0	High	High
Option 3 - Update the directive	0	0	50	125

Option 1 represents the case of “no action” whilst Option 3 comes closest to the case of “no change”. In order to use a clear single benchmark for the comparison, the current situation has been taken as the benchmark

Present the aggregated and disaggregated results

Table 2. Costs and benefits of Option 1 – No action (benchmark = current situation)

Mln €	Benefits		Costs	
	One-off	Annual	One-off	Annual
1. Applying the sun-down clause				
EU industry	0	0	31 – 315	31 - 315
Non EU industry	0	0	31 – 315	31 - 315
UK and Irish consumers	50	125	>50	>125
Legal uncertainty industry	0	0	PM	PM
Adaptation other directives	0	0	PM	PM
2. No adaptation to technical progress	0	0	0	Legal void
3. Ending UK / IRL exemptions				
Pints for milk in returnable bottles	0	0	0	Public dislike
Pints for draught beer and cider	0	0	0	Public dislike
Traffic and speed road signs (only UK)	0	0	100 - 1100	Public dislike
Troy ounce	0	0	0	High
Total of Option 1	50	125	>212 - 1780	> 187 - 755
<i>Of which:</i>				
<i>UK</i>	50	125	150 - 1150	High+125
<i>Rest of EU and worldwide</i>	0	0	62 – 630	62 - 630

Table 3. Costs and benefits of Option 2 – Repeal the directive (benchmark = current situation)

Mln €	Benefits		Costs	
	One-off	Annual	One-off	Annual
Confusion in cross border trade and transactions	0	0	0	High
Risk of One off errors (Marslander)	0	0	High	0
Total of Option 2	0	0	High	High

Table 4. Costs and benefits of Option 3 - Update the directive (benchmark = current situation)

Mln €	Benefits		Costs	
	One-off	Annual	One-off	Annual
1. Continue supplementary indications				
EU industry	0	0	0	0
Non EU industry	0	0	0	0
UK and Irish consumers	0	0	50	125
Legal uncertainty industry	PM	PM	0	0
Adaptation other directives	PM	PM	0	0
2. Adaptation to technical progress	0	Harmonisation	0	0
3. Allowing UK / IRL exemptions				
Pints for milk in returnable bottles	0	Public's preference	0	0
Pints for draught beer and cider	0	Public's preference	0	0
Traffic and speed road signs (only UK)	0	Public's preference	0	0
Troy ounce	0	High	0	0
Total of Option 3	0	0	50	125
<i>Of which:</i>				
<i>UK</i>	0	0	50	125
<i>Rest of EU and worldwide</i>	0	0	0	0

6.3. Indicate if the analysis confirms whether EU action would have an added value.

The options 1 and 2 of no action and repealing the directive respectively would have considerably more costs than benefits. The option 3 of updating the directive has no benefits

compared to the current situation but by far the lowest costs and this confirms that EU action has added value.

6.4. Highlight the trade-offs and synergies associated with each option.

There is a trade-off between the preference of a majority of the public in the UK and Ireland to maintain the exemptions and the opposite view of the much smaller minority. (Options 1 and 3)

There is a synergy between extending the use of supplementary indications and the leeway as regards non-metric applications in the current practice of enforcing the directive, notably in sectors that use measurement for which no metric unit exists. (Option 3).

6.5. If possible, rank the options in terms of the various evaluation criteria.

As regards the benefits of applying option 1, these can be deemed to be social and accrue to some citizens. A large majority in UK and Ireland will suffer from ending the exemptions (pint, mile, troy ounce). As regards the economic cost of option 1, industry will experience no benefits and high administrative costs.

In the case of option 2 costs are primarily economic but probably also have a large social component.

As regards the costs of applying option 3, these can be deemed to be social and concern some citizens. A large majority in UK and Ireland will benefit from keeping the exemptions (pint, mile, troy ounce). As regards the economic benefits of option 3, industry will benefit from high administrative cost savings without incurring any costs compared to the current situation.

In no option are there environmental costs to be expected.

6.6. If possible and appropriate, set out a preferred option.

Option 3 to update the directive is the preferred option, because it maintains the existing situation and requires no new administrative costs, which in this area concern mainly labelling costs. Allowing UK and Ireland to continue indefinitely exemptions (pint, mile, tray ounce) benefits most consumers who want the current situation to continue. This option includes a synergy between extending the use of supplementary indications and continuing the leeway as regards non-metric applications in the current practice of enforcing the directive, notably in sectors that use measurement for which no metric unit exists, e.g. binary measurements in computing (bits, bytes). This option would ensure a continued application of the current practice, which has, on the whole, not shown major problems.

The main costs resulting from the alternative option 1 of no action would be administration costs, which are significant and probably will be highest for small and medium sized enterprises due to less scale effects. In order to keep the impact assessment proportional no full estimate has been made according the standard cost model, but the quite similar estimates from various sources in industry are relied upon.

Costs resulting from the other alternative option 2 of repealing the directive are very uncertain but could easily be high and relate to the fact that Member States may implement the international standards differently thus causing uncertainty and possibly barriers to trade. Also there might be costly losses on an incidental basis due to misunderstandings, for example the

US Marslander spacecraft, which crashed on Mars due to malfunctioning because inch/pound indications had been mixed up with metric indications in the production phase.

Option 3 to update the directive is, therefore, the preferred option.

7. SECTION 7: MONITORING AND EVALUATION

7.1. What are the core indicators of progress towards meeting the objectives?

Progress towards meeting the objectives does not need to be measured because it concerns the adaptation of EU harmonisation to international standards whilst accommodating the situation for EU exporters in a major trading partner, the USA, which has not yet adopted the international standard fully.

7.2. What is the broad outline for possible monitoring and evaluation arrangements?

As a result of option 3 regular evaluation should take place of the US adoption process of the international metric standard, in particular as regards the progress towards allowing metric-only labelling, and also, at the level of the world body of the General Conference for Weights and Measures, as regards the development of potentially useful metric units of measurement where, due to lack of SI units, currently only non-SI units can be used, e.g. bits and bytes in computing, as both are key drivers for the choice of option 3.

7.3. How has the opinion of the IA board of 16 July 2007 been taken into account?

(1) The IA report should elaborate on the expected developments in the US. The past and expected developments in the US have been outlined under the point ‘Who is affected’ (section 2.3) and the relevant discussions in the transatlantic dialogue have been mentioned under the point ‘How would the problem evolve’ (section 2.4). US progress towards allowing metric-only labelling is included as an element of monitoring and evaluation (section 7.2).

(2) The IA report should provide a summary of the analysis of administrative costs under the different options in a separate paragraph. An analysis of one-off and permanent administrative costs under the different options is set out under ‘Analysis of impacts’ (section 2.4). The preferred option does not lead to new administrative costs, whilst the discarded other options would (section 6.6).

(3) The IA report should provide a brief description of ways in which the results of the consultation have influenced the final report and the proposed policy choice. The point ‘Consultation and expertise’ has been expanded with a brief description of the results of the consultation and how they have influenced the preferred policy choice (section 1.2). Stakeholder input on administration costs has been included as an Annex. A case of evidence accumulated by the Commission services on related policy dossiers (nominal quantities) has been introduced under the ‘general objectives’ (section 3.1).

(4) It is recommended to give a more structured presentation of the (discarded) option of a time-limited extension. A justification for discarding the time-limited extension option has been given under the heading of ‘Which options discarded at an early stage and why’ (section 4.2).

Annex

Cost estimates resulting from ending supplementary indications

Text retaken for the Report on the Public Consultation on Units of Measurement (June 2007)⁸

Respondents from industry unanimously confirmed the necessity to extend the use of supplementary markings. Many have asked for an indefinite extension. Requiring metric-only would lead to very large costs from having to split production lines and making products in metrics for the EU market and in non-metrics for the US market. Next to that there would be additional costs from having to use different labels and documentation, retraining workers and maintaining increased stocks. Finally, bespoke production runs could become shorter leading to higher prices per item. Some of these operations would have negative environmental consequences such as more scrap, more print runs, more cleaning of presses.

Table 1 Transatlantic trade and estimates of costs of requiring metric metric-only labelling in the EU from 2010

Sector	TA trade	production	labels	stocks	Total costs	Source
Electrical Equipment	\$10bn					NEMA
Cosmetics			\$10.000 per label		\$80 mln for a large company	CTFA
Manufacturing					\$30 mln for a large company	NAM
High tech	\$100bn turnover in EU; 500,000 employees	Disable °F indication = 4 engineering months = \$60.000	8 working days per manual = \$3500	Extra stocks per product = \$10.000 one-off; \$1000 per year	Per firm: \$25-50mln one-off and \$4 mln per year	AeA
Chocolate/confectionary	\$705 mln					NCA-CMA
Plastics	\$13bn	Metric moulds				SPI
Engineering	€63 bn (EU exp)				€125 mln (0.02 – 0.2% of turnover)	Orgalime
Machinery and Transport					€150 mln – €1.5bh (0.02-0.2%)	Business Europe

⁸ http://ec.europa.eu/enterprise/prepack/unitmeas/uni_ms_en.htm

					of turnover)	
Engineering			£1000- £5000 per manual		5% extra costs perpetually	GAMBICA
Meat	85-90% of US meat exp to EU				\$12mln	USMEF
Medical devices (IVD)	€9bn (EU market)		€700 per prod line		€14 mln	EDMA
Toys					0.2% of turnover	Medium company
Art materials			\$250- \$10.000 per item		\$500.000	Medium company
Gas appliances			2.5 man days per manual		£100.000	Medium company
Manufacturing			\$2000 per item		\$30 mln	Large company
Electro- mechanical					€30 – 60 mln	Large company
Electro- mechanical					0.5% TO one off and 0.25% TO annually	Medium company
Small business					Any new investment requires 3 times that amount in turnover to cover cost	FSB

It would seem that enforcing metric-only labelling in the EU from 2010 onwards would lead to considerable costs amounting to 0.02% of turnover for large firms and up to 0.2% of turnover for small firms. Mechanically it could lead to more employment, but it is expected that other employment will be lost in those cases where firms cannot cope with rising costs. With total EU exports to the USA amounting to €315bn, costs of the change between 0.02% and 0.2% could amount to between €63 million and €630 million for European industry.

There do not, however, seem to be any additional costs caused by extending the use of supplementary indications, because there will be no change to the current situation.