

REGULATORY AND ENVIRONMENTAL IMPACT ASSESSMENT
THE CONTROL OF POLLUTION (OIL STORAGE) (ENGLAND)
REGULATIONS 2001

Title

1. The Control of Pollution (Oil Storage) (England) Regulations 2001.

Purpose and intended effect of the measure

(i) Identify the issue and objective

2. There has been a rising trend in oil-related water pollution incidents in England in recent years, which have now stabilised at a high level. In 1998, oil accounted for 4,940 water pollution incidents, around 30% of all water pollution incidents. Incidents were mainly due to leaks from unbunded tanks, inadequate storage facilities and equipment, vandalism and poor management/human error. Oil is considered to be a “List I” substance within the meaning of the *EC Directives on Dangerous Substances (76/464/EEC) and Groundwaters (80/68/EEC)* and the environmental damage caused as a result of these incidents can be significant and expensive to remediate. The UK Government is required by the directives to prevent pollution of the water environment from toxic substances rather than to treat pollution incidents after the event. The proposed regulations would contribute to the implementation of the EC directives by complementing and enhancing existing water pollution controls in England. They should ensure that, in the future, contamination of controlled waters by oil is prevented or minimised.

3. The proposed regulations would set design standards for new and existing above ground oil storage facilities, mainly affecting the industrial, commercial and institutional sectors. The key requirement would be provision of secondary containment (a “bund” or “drip-tray”) to ensure that any leaking or spilt oil cannot enter controlled waters. The proposals would come into force in three stages following the introduction of the proposed regulations in Parliament:

- new tanks would have to comply within six months (in 2001);
- existing tanks at “significant risk” (defined as facilities which are located within 10 metres of a watercourse of 50 metres of a borehole or well – though the EA would have flexibility to issue a “transitional notice” where there were other circumstances which it considered posed a significant risk) would have to comply within two years (in 2003); and
- remaining existing tanks would have to comply within four years (in 2005).

4. The objective of the proposed regulations would be to reduce the number of oil-related water pollution incidents by the year 2005 by about 2,700 per annum compared to 1998 levels. The proposals would mainly affect industrial, commercial, institutional (residential and non-residential) premises with new and existing above

ground oil storage facilities in England and would affect all such existing unbunded and inadequately banded tanks (approximately 60% of the overall existing stock), and any similar new stock. It should reduce the number of oil-related water pollution incidents by three-fifths, since the EA believe that unbanded and inadequately banded existing stock is 5 times more likely to have a pollution incident. This view is supported by a sample study carried out in 1993/94 by the predecessor of the EA, which found that 60%-90% of oil-related pollution incidents resulted from poor storage facilities, eg unbanded tanks, leaking tanks and pipes, faulty valves, overfilling, vandalism, mobile plant, poor management and construction practices. In addition, some further reduction in incidents may be achieved from the impact of the proposals on inadequate equipment, vandalism or management practices.

(ii) *Risk assessment*

5. Oil spills are objectionable aesthetically but, more seriously, place all aquatic organisms at risk. Oil forms a film on the surface of rivers and lakes, which prevents or greatly reduces the rate at which atmospheric oxygen can be absorbed into water. This causes distress and even death to aquatic life. Oil may adhere to the feathers and coats of birds and animals reducing their natural waterproofing and has toxic effects. It also contaminates drinking water supplies and water used for irrigation, stock watering and many industrial purposes and gives rise to problems in recreational waters. These effects cannot be monetised, but are clearly severely detrimental to environmental ecosystems.

Options

(i) *Identify options*

6. Three options have been identified to reduce the number of oil pollution incidents from industrial oil storage facilities and compared to the ‘business as usual’ or ‘do nothing’ option, as follows:

- Option 1: do nothing, or ‘business as usual’ scenario;
- Option 2: introduce a voluntary scheme;
- Option 3: use economic incentives such as grants and tax breaks; or
- Option 4: regulate.

(ii) *Issues of equity or fairness*

7. The proposed regulations would create a ‘level playing field’ for oil consumers, ie those who own oil storage facilities in the industrial, commercial and institutional (eg public and voluntary organisations and institutional-residential premises and multi-occupier dwellings) market sectors. They would introduce similar requirements to control oil storage facilities in the agricultural sector implemented under *The Control of Pollution (Silage, Slurry and Agricultural Fuel Oil) Regulations 1991* (amended in 1997). Although waste oil stores would be

exempt from the proposed Regulations, it is intended that the same requirements would be introduced in revisions later in 2001 to the waste oil storage provisions of the *Waste Management Licensing Regulations 1994 (as amended)*. The proposed Regulations would thus ensure equity and fairness throughout all sectors of the economy, except for single dwellings in the domestic sector. The cost of meeting the minimum standards proposed by the regulations would be likely to be proportionally greater for operators of small tanks, such as small businesses and voluntary groups.

8. Householders occupying single dwelling houses in the domestic sector owning heating oil storage tanks (largely found outside conurbations) would not be required to comply with these proposed regulations, as the risk of water pollution from this sector is less than the costs of compliance with our regulatory proposals. However, similar controls for new build domestic heating oil storage tanks for single dwellings are being considered by revisions to Part J of the Building Regulations to be introduced later in 2001. Those existing domestic tanks in single dwellings where there is a risk of pollution of controlled waters can be dealt with by EA's existing anti-pollution powers, though this would be more burdensome for the EA to enforce.

9. The proposed regulations are likely to affect the market for tanks and bunds and may encourage production of less expensive plastic integrally bunded tanks at the smaller end of the market, which would be likely to benefit small businesses and voluntary groups as the costs of installation are lower. If this happens, it would affect some tank manufacturers and firms installing brick or concrete bunds, whose markets may shrink unless they can diversify.

Benefits

(i) Identify the benefits

10. The principal benefit of the proposals would be the reduction in the number of oil-related water pollution incidents in England. This would reduce the risk to wildlife and help to safeguard surface waters, groundwaters and drinking water supplies. These measures would help to protect the water environment. Additionally, the reduction of further pollution to land and controlled waters would reduce the costs of remediation of contaminated land in the future.

(ii) Quantifying and valuing the benefits

11. It is difficult to quantify the benefits of the proposed regulations to the sustainability of the water environment. However, the main quantifiable benefits of the 'do something' options (2-4) would stem from reducing the costs of remediating land and waters, ie lower clean-up costs.

- Option 1 - *do nothing or 'business as usual' scenario*. There are no benefits as industrial sites would be uncontrolled and the risk of pollution would continue at current high levels, except to the extent that businesses take voluntary action.
- Option 2 - *introduce a voluntary scheme*. This is similar to the Option 1 'business as usual' case. The EA has produced several "Pollution Prevention

Guidelines” concerning the safe handling of oil, including oil storage, and has conducted a moderately successful Oil Care Campaign since January 1995. The EA has worked closely with the oil industry and businesses to educate operators about good environmental practices. As a result, the number of oil-related water pollution incidents has fallen from previous levels, but has stabilised at a high level (30% of all water pollution incidents in 1998). We do not consider that a voluntary scheme, such as a code of practice, is likely to achieve much more than the existing guidance and the clean-up costs would remain similar to those at Option 1.

- **Option 3** - *to use economic incentives such as grants and tax breaks.* This option runs against the ‘polluter pays’ principle as the environmental costs are subsidised. The availability of grants would almost certainly encourage tank operators to improve oil storage to reasonable standards. However, there would be no guarantee that grants would lead to an improvement in all tanks. A grant of less than 100% of the marginal costs (ie the extra costs of buying a bunded tank) would still leave tank operators facing extra expenditure and it is likely that a number of them would choose not to comply. Furthermore, it is estimated that there may be around 36,000 new oil storage tanks sold annually in the industrial, commercial and institutional sectors. Providing grants to finance the extra costs for this number of tanks would be far too costly for the public finances.

Zero-rated VAT for new equipment complying with the proposals might reduce the costs for operators who install them, but they would still face additional expenditure. Given the number of tanks involved, such a scheme would be too costly and would not achieve the relatively fast reduction in oil pollution incidents that we are looking for or the ‘level playing field’ between operators.

- **Option 4** - *to regulate.* We consider that this option would be the best way of controlling the number of oil-related water pollution incidents and ensuring equity and fairness between operators, as far as possible. In consultation with environmental clean-up companies, the EA and the Institute of Petroleum, we have estimated a range of benefits based on actual incidents occurring in all sectors and for different tank capacities of about £400-£254,000. The average range of benefits (at 1999 prices) are estimated to be around £11,000-£239,000 per incident in avoided clean-up costs, reimbursement to the EA and replacing lost fuel. For a **typical business** with tank sizes of 2,500-5,000 litres the **benefits would be £11,000 - £30,000 per incident.** In addition, polluters may face prosecution and fines of up to £20,000 per incident.

For businesses overall, we estimate that there are **total quantifiable recurring benefits of some £15m-56 million per annum** for new tanks (at 1999 prices). If we also regulate existing tanks as proposed (those at significant risk within 2 years and the remainder within 4 years), we expect the **total benefits of the proposals at 1999 prices would be £250 million** by the target year of 2005. These one-off benefits would be in addition to the recurring benefits of regulating new tanks.

Compliance costs for business, charities and voluntary organisations

(i) Business sectors affected

12. The proposed regulations would have an impact on the following sectors:

- Consumers: Oil consumers, ie operators of oil storage facilities in England in the industrial, commercial, institutional sectors, would be responsible for meeting the requirements of the proposed regulations. A large number of consumers would be affected. In 1998, there were estimated to be 818,423 existing above ground oil storage tanks (of which 99,960 were in the industrial, 468,563 in the commercial and 249,900 in the institutional sectors) in the non-domestic consumer market. An estimated 36,378 new above ground tanks are purchased annually (of which, 5,831 are in the industrial, 18,222 in the commercial and 12,325 in the institutional sectors) most of which are likely to replace existing tanks (which are assumed to be replaced every 25 years).
- Suppliers: Tank manufacturers, oil distributors/deliverers, and firms fitting, installing and maintaining tanks and bunds would be affected indirectly. Suppliers would need to meet the increased demand for tanks, pipework and bunds to the standard required in the regulations within the timescale for compliance. Thereafter, annual sales could be expected to stabilise at a lower level. There are only a few suppliers of oil equipment in the UK. Suppliers have been consulted about any cost-benefit information in the small business 'litmus test'.

(ii) Compliance costs for a 'typical' business

13. The costs of Options 1-3 would be minimal for business. In consultation with the EA and OFTEC the oil trade association, we have carried out a cost-benefit study of the costs of the proposed regulations (Option 4) in England for the types of business or organisations most likely to be affected, ie oil consumers in the industrial, commercial and institutional sectors. The study estimates the one-off costs of installing new integrally bunded tanks, which are likely to be cheaper than buying an unbunded tank and building a separate brick bund; and the one-off costs of upgrading existing tanks within 2 years for those at "significant risk" and within 4 years for the remainder. The costs will vary according to the total oil storage capacity at each premise. For convenience, we have estimated the cost of purchasing or upgrading an individual tank at different tank capacities and consider that small businesses and those with small oil storage facilities should anticipate costs at the lower end of the range.

Non-recurring costs:

14. The main compliance costs to firms is the one-off cost of upgrading an existing tank or installing a new tank to the required design specification, and in particular providing a bund. The costs will vary depending on tank capacity, which can be 1,000 litres at the lower end and 150,000 litres at the upper end. Most tanks

affected by the proposed regulations will have a capacity of about 2,500-5,000 litres and we consider that these will be typical businesses. Small businesses are likely to have a tank capacity in the range of 1,000-2,500 litres.

Costs of installing new bunded tanks

15. It is assumed that new integrally bunded above ground tanks are purchased. There are no additional labour costs beyond the cost that would have been incurred under the “business as usual” scenario. There may be marginal additional costs for pipework and mobile tank requirements, but we have been unable to cost these. We estimate that the **typical business is likely to face additional costs for installing new bunded tanks of £265 - £487**, and **small businesses are likely to face additional costs of £211 - £265**. The full range of costs for different tank capacities is below:

Tank capacity (litres)	1,000	1,500	2,500	5,000	30,000	50,000	150,000
Extra cost of bund	£211	£263	£265	£487	£1898	£2960	£12,647

(1999 prices)

Costs of upgrading existing tanks

16. The additional costs of upgrading existing above ground tanks will vary enormously depending on the amount of work that is needed to bring the facilities up to the standard in the proposals and the age of unbunded tanks. Tanks may require remedial work or have to be completely replaced with a new integrally bunded tank.

17. The **typical business is likely to face additional costs in year 4 for upgrading existing tanks of minimal - £845**, and **small businesses are likely to face additional costs of minimal - £449**. The full range of costs for different tank capacities is given below, assuming a ‘worst case’ scenario.

Tank capacity (litres)	1,000	1,500	2,500	5,000	30,000	50,000	150,000
Cost for tank where bund requires some remedial work	£200	£200	£200	£200	£200	£200	£200
Marginal cost for tank requiring complete replacement*, including £200 installation cost	£380	£449	£530	£845	£3,037	£4,637	£16,230

(1999 prices)

* **Note:** This cost is dependent on the age of the tank after 4 years when the proposed regulations come into force. It provides an example of the most expensive scenario, a 4 year old tank which - assuming an average lifespan of 25 years - would have had another 21 years of use.

Recurring costs:

18. The main recurring cost is likely to be routine maintenance to ensure the reasonable standards proposed in the regulations are met at all times, through an annual inspection and service. Maintenance proposals would not be onerous as storage tanks have few mechanical features and brick or concrete bund construction is very durable. Plastic integrally bunded tanks have minimal maintenance

requirements. These costs have not been included as routine maintenance could be incurred whether or not the proposals are introduced.

19. There are likely to be recurring costs for the minority of businesses in the supplier market. For many firms this is likely to be increased demand for products to meet the timing proposals in the regulations, followed by some reduction in sales and thus lower profits in the interim years until new tanks are purchased. However, the cyclical nature of the loss of profits may be offset to some extent by the number of existing tanks which currently meet the proposals in the regulations and the timing of any maintenance required. We have not been able to quantify these costs.

(iii) *Total compliance costs*

20. We estimate that the total recurring and non-recurring compliance costs for the oil consumers affected by the proposed regulations in the industrial, commercial and institutional sectors would be as set out in paragraphs 21-23.

21. The number of new tanks purchased per annum in all sectors is 36,378 (based on 1998 figures provided by OFTEC). The EA estimate that some 60-90% of new tanks purchased in the absence of regulations would have been bunded anyway and would comply with our proposals. Therefore, the extra cost of the proposed regulations (mainly the bund) would be for those 10-40% of tanks which otherwise would have been bought unbunded. Taking this into account, the total recurring compliance costs for new tanks in all sectors in England is estimated to be **£1.6 - £5.5 million** (at 1999 prices).

22. Based on 1998 OFTEC data, it is estimated that there are 818,423 existing tanks. The EA estimates that 60% of these are bunded and, of these, 33% have an inadequate bund. If we take a 'worst case' scenario, where we assume that 60% of existing stock is unbunded or inadequately bunded, and the additional cost of the proposals would require complete replacement of the bund. The total non-recurring costs (at 1999 prices) for existing tanks in all sectors in England to comply with the proposals (within 2 years for tanks at significant risk and 4 years for the remaining tanks) is estimated to be **£114-116 million over 4 years (by 2005)** (at 1999 prices).

23. We estimate that the combined total compliance costs of our proposals at paragraph 22 can be broken down (discounted to 1999 prices) as follows:

All sectors and tank sizes	Expected total costs
Additional recurring costs of purchasing <u>new</u> tanks	£1.6m - £5.5m per annum
Additional non-recurring costs of upgrading existing tanks at 'significant risk' within 2 years	£14-15million
Additional non-recurring costs of upgrading remaining existing tanks within 4 years	£100-101million

Consultation with small business: the 'litmus test'

24. We have consulted selected small businesses in the consumer (industrial, commercial and institutional premises) and supplier sectors prior to the consultation period by carrying out a litmus test, which assessed the impact of the proposals in the

regulations on small businesses. Although for most businesses there were some additional costs, the test showed it was not likely to affect their competitiveness or profitability. Overall the test found that there would be no significant impact to business and that the costs were in line with those used in the regulatory impact assessment.

Identify any other costs

25. We have estimated the costs to the environment of options 1 and 2. These figures become the benefits to the environment of regulating (option 4) by avoidance of clean-up costs.

26. It is possible that the oil consumer sector would pass on the costs of compliance with the proposed regulations to citizens by increasing the prices of goods and services. However, many may simply absorb the additional costs and overall we estimate that the impact on inflation would be minimal.

27. There would also be costs to Government. As regulator and enforcer, the EA would monitor and enforce the proposed regulations at an estimated cost of £70,000 in 2001/02. There would probably be further enforcement costs for the proposals in two and four years after the introduction of regulations, but these are unquantified at this stage. Costs would be at a minimal maintenance level thereafter to ensure that the maintenance proposals were met. These costs are significantly lower than the cost of using existing powers at individual sites and the costs to the EA of cleaning up a pollution incident. The proposed regulations would therefore significantly reduce the burden on the EA of oil-related water pollution incidents.

28. Local authorities do not bear any enforcement costs, though local authorities storing oil would need to meet the requirements of these proposals.

Results of consultations

29. The proposals and the regulatory impact assessment have been discussed extensively with the oil industry. In December 1996, a preliminary formal three month consultation, including a draft compliance cost assessment, was issued to 284 organisations covering industry, regulatory and environmental interests. The consultation period was extended during 1997 and a total of 937 consultation papers were distributed. Responses were received from 108 organisations and the regulations take account of comments made at that time and subsequently in the April 2000 consultation, and of further legislation.

Summary and recommendations

30. Non-recurring compliance cost-benefits of Option 4 for a “typical business” in the oil consumer market are likely to be:

Typical business	Expected costs per tank @ 2,500 - 5,000 litres	Expected benefits per incident for tank @ 2,500 - 5,000 litres
Purchase new facilities	£265-487	£11,000 - £30,000
Upgrade existing facilities	minimal-£845	£11,000 - £30,000

(at 1999 prices)

31. Recurring costs for maintenance, such as an annual inspection and service, have not been included as they could be incurred whether or not the proposals are introduced. A minority of businesses supplying oil tanks and equipment may incur recurring costs in terms of loss of profits. We have been unable to quantify these.

32. Total compliance cost-benefits of Option 4 for businesses in the oil consumer market and for Government would be recurring for newly purchased tanks, assuming that the level of unbunded or inadequately banded stock remained the same if the proposals were not introduced. We have also estimated that total non-recurring costs of the proposals to regulate existing stock at 'significant risk' within 2 years and remaining existing stock within 4 years. There are no recurring costs of the proposals to regulate existing stock. Estimated total costs (at 1999 prices) are likely to be in the range:

All sectors and tank sizes	Expected total costs	Expected total benefits of reduction in clean-up
<u>Business</u> : additional <u>recurring</u> costs of purchasing <u>new</u> tank, bund	£1.6m – 5.5m per annum	£15m - £56m per annum
<u>Business</u> : additional <u>one-off</u> cost of worst case upgrade of existing tank at 'significant risk' within 2 years and remainder within 4 years	£114 - £116m for existing stock with 2 year and 4 year compliance	£250m for existing stock with 2 year and 4 year compliance
<u>Government</u> : additional <u>one-off</u> costs of monitoring and enforcement	£70,000 in 2001/02, further costs in 2 and 4 years and minimal costs thereafter	Costs avoided of attending pollution incidents, typically £190 - £2,000 per incident

(1999 prices)

33. The historic high incidence of water pollution from inadequate oil storage facilities justifies statutory measures to protect the environment. We recommend that the proposed regulations are brought into force as soon as possible under section 92 of the *Water Resources Act 1991* so that the unquantifiable and the identified quantifiable benefits to the environment can commence.

Enforcement, sanctions, monitoring and review

34. The DETR and the EA would jointly issue a publicity leaflet to alert oil consumers of their responsibility for complying with the proposed regulations. This would be issued to consumers with the help of the oil industry trade associations who deliver oil to industrial, commercial and institutional oil storage premises. The DETR would also issue detailed guidance explaining the proposed regulations.

35. In consultation with the DETR, the EA would issue guidance and undertake training of regional staff to ensure that the proposed regulations were implemented, monitored and enforced fairly and equitably across England.

36. The proposed regulations provide for operators of oil storage facilities (oil consumers) in breach to be prosecuted and for penalties to be imposed. The EA would be sympathetic to the difficulties facing small businesses and organisations and would encourage them to comply with the proposed regulations so that any sanctions for non-compliance were proportionate to the problem.

37. The EA would monitor compliance with the proposed regulations in the data that is collected for the annual report on pollution incident statistics. The EA would ensure that monitoring data is consistent throughout its regions. If the proposals were introduced, we would formally review the effectiveness of the regulations and consider if the reasonable standards are appropriate in the light of further developments five years after the proposals are introduced.

Contact point:

Jonathan Tweney
Water Quality Division (WQ4)
Department for Environment, Food and Rural Affairs
Floor 3/G15, Ashdown House
123 Victoria Street
London SW1E 6DE

Telephone: 020 7944 5348
Facsimile: 020 7890 5209
E-mail: Jonathan.Tweney@defra.gsi.gov.uk

Declaration

I have read the Regulatory Impact Assessment and I am satisfied that the balance between cost and benefit is the right one in the circumstances.

Signed by Lord Whitty 21 August 2001