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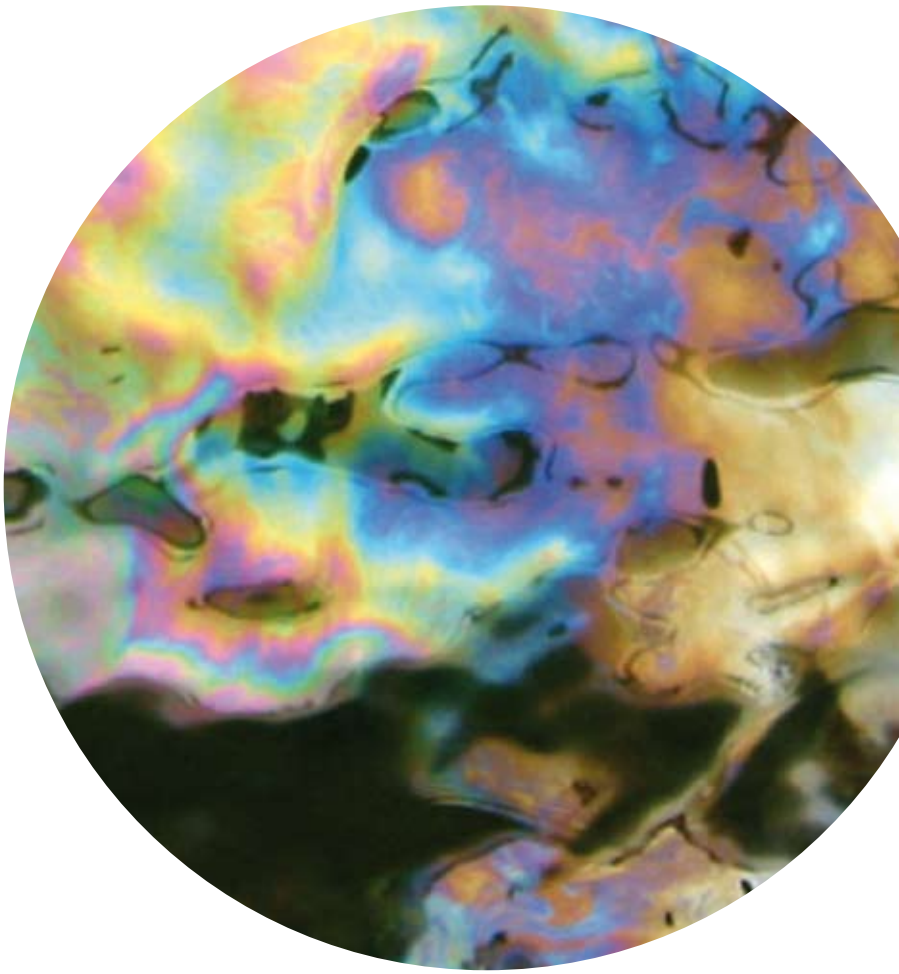

Hooked on oil: breaking the habit with a windfall tax

The UK Exchequer's dependence on fossil fuel income

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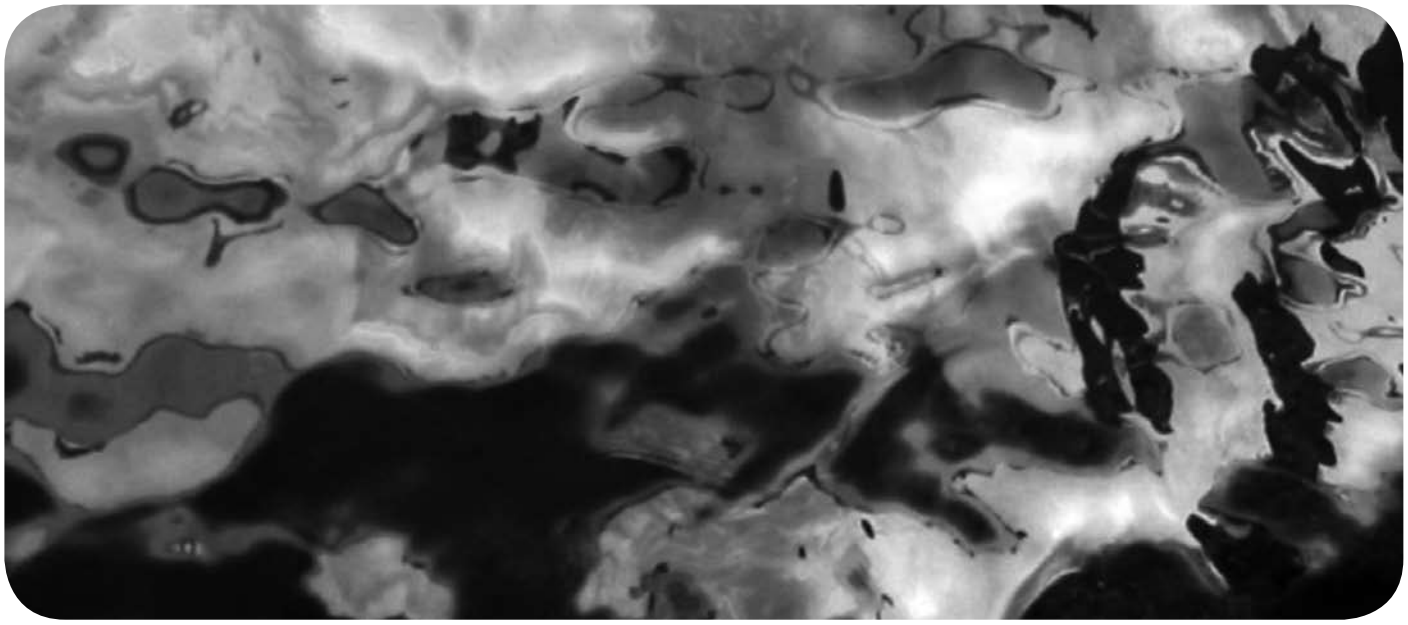
nef (the new economics foundation) is a registered charity founded in 1986 by the leaders of The Other Economic Summit (TOES), which forced issues such as international debt onto the agenda of the G7/G* summit meetings. It has taken a lead in helping establish new coalitions and organisations such as the Jubilee 2000 debt campaign; the Ethical Trading Initiative; the UK Social Investment Forum; and new ways to measure social and economic well-being.



Hooked on oil: breaking the habit with a windfall tax

The UK Exchequer's dependence on fossil fuel income – a briefing from **nef** (the new economics foundation) for WWF

Contents

Executive Summary

This briefing provides a snapshot of the UK Exchequer's reliance on revenue from fossil fuel industries. Nearly half of the UK economy depends in one way or another on petroleum-based products in order to function. Today, several major decisions hang over the future of those parts of the economy that are heavily dependent on fossil fuels. Which path should energy policy take?

Should we expand our airports? What is the broader future for transport policy and the construction industry? Questions, too, are being raised about whether or not the UK will reach its self-imposed climate-change target to cut greenhouse gas emissions by 60 per cent of levels in 1990, by the year 2050.

This briefing shows that the public purse has come to rely on a high and fairly stable income stream from fossil-fuel-related activities. It raises two major issues. First, with so much income from fossil fuels, is there a powerful disincentive for the government to 'kick the fossil fuel habit?' For example, when the UK's target for reducing emissions from industry under the European Emissions Trading Scheme was announced in June 2006, it was widely suspected that pressure from the Treasury weakened aims supported by the Department for Environment, Food and Rural Affairs (Defra), allowing an additional two million tonnes of carbon to enter the atmosphere. This leaves the Government 4 per cent short of its 20 per cent cut target for 2010.

The second issue is how the country will handle the changed income effects if we do successfully kick the fossil fuel habit? As the UK becomes a net importer of oil and gas, the incentive to develop alternatives grows. Careful planning and effective action to minimize the impacts of climate change could allow a smooth transition. It is time the polluters paid.

With oil companies reporting staggering profits from the rising price of oil, there is no better time to take a reality check on the economy's addiction to oil.

Compared to Norway, another producer, Britain has frittered away its oil income without investing adequately in a sustainable long-term energy supply. It is, therefore, long overdue for the proceeds from liquidating our fossil fuel assets to be put to better, and more appropriate use. This briefing suggests that, in a world of steeply rising oil prices, the Government is likely to view the scope for substantial new consumption taxes as limited. Although approaches such as road pricing and a more fully evolved air passenger tax are almost certain to become more common.

For that reason, we propose the establishment of an Oil Legacy Fund. The fund will be paid for primarily by a Windfall Tax on oil and gas company profits. The need is enormous, not only because the chance to prudently invest the benefits from oil is slipping away, but also because the scale of necessary re-engineering of the economy is so great, and the degree of support needed for individuals to make changes is so high.

Part 1

Saving for the future: prudential management of fossil fuel income

Like Britain, Norway was lucky enough to win a geographical lottery. It found itself sitting on a vast reservoir of fossil fuel wealth. Unlike Britain, Norway saw that the profit windfall from exploiting its accidental inheritance wouldn't last forever. It prudently set up a substantial fund to invest its oil surpluses with the aim of making sure that future generations would benefit once the oil was gone.

The Norwegian Petroleum Fund is much more than a politically correct gesture toward future generations. At the end of 2005 it stood at $210 billion. To put that figure into perspective, the fund is currently worth around $45,000 each to every man, woman and child living in Norway today.

Canada and Venezuela, among other countries, have also developed oil funds. Sweden has taken a different approach, committing itself to becoming oil-free by 2020. This report shows that Britain still has an opportunity to invest for the future the proceeds from its own once-in-an-eon windfall of natural fossil fuel wealth. It is yet to do so, however, and the Treasury's dependence on oil income raises other important questions about the Government's ability to meet the twin challenges of tackling climate change, and responding to the coming economic shocks related to the peak and decline of global oil production.

Norway is more dependent than the UK on income from oil and gas. It represents nearly one-fifth of the country's GDP and 44 per cent of its exports. But, In Britain, around £1 in every £12 of government income comes from the oil and gas sector. This money currently enters government coffers to be spent on anything from obvious public goods, like schools and hospitals, to subsidising more controversial areas, like new roads and airport expansions, and to paying for quangoes and spin doctors. But day-to-day political pressures make it extremely difficult for governments to earmark funds for long-term projects that won't reach fruition, or their benefits be seen, within their own, guaranteed term of office.

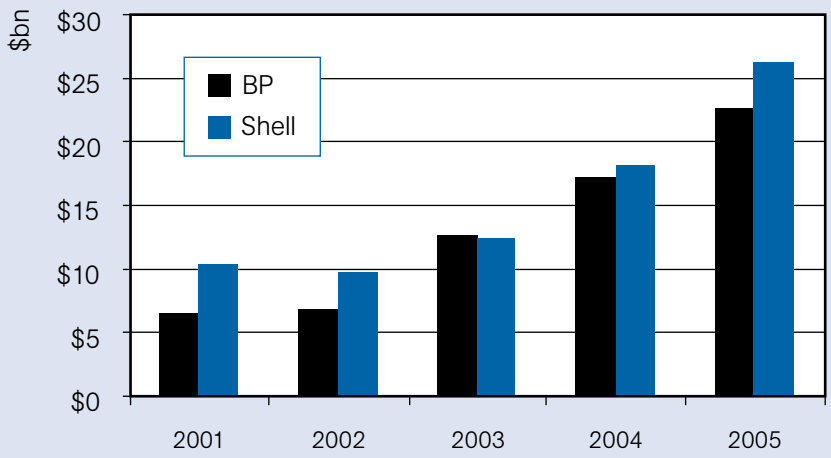
Why action is needed now

We face a paradox. Just as the price of oil and the profits of oil companies hit record highs, perversely the chance to invest these gains for the future is slipping away. Unless we act quickly, we will lose the extraordinary economic gains from using what remains of our fossil fuels that are still safe. We will have followed a path with the signpost, 'get rich quick, stay poor long'.

As a nation, the UK is missing its own targets for reducing its greenhouse gas emissions. Our emissions are in fact rising when, to stay within relatively safe targets to minimize global warming, we need to be making cumulative cuts of more than 3 per cent per year. In spite of advertising their green credentials, oil companies like BP and Shell are investing huge sums in exploring for more oil, rather than shifting to safe, renewable energy technologies.

The time has come to force the issue by setting up an Oil Legacy Fund designed to invest in the urgent, wide-scale transition to a sustainable energy system. Such a fund would, we believe, be the most appropriate memorial to a fuel source that has brought both great wealth and great problems.

Figure 1: Pouring profit: BP and Shell's five-year profit trend ($m)



Pyrrhic profits, false accounts

Table 1: Pouring profit: BP and Shell's five-year profit trend ($m)

	2001	2002	2003	2004	2005
BP	6,617	6,872	12,618	17,262	22,632
Shell	10,301	9,656	12,313	18,183	26,261

Source: Company annual reports

In early 2006, Exxon's global record profits of $36 billion foreshadowed Shell's UK profit record of £13 billion, and BP's £11 billion profit. But things are not all they appear to be. Government estimates suggest an environmental damage cost per tonne of carbon dioxide of around £20.[1]

In 2004, BP was directly responsible for 82 million tonnes of greenhouse gases (CO_2 equivalent) entering the atmosphere from its production cycle, and a further 1,376 million tonnes from the use of products it sold.[2] Together, this means that 6 per cent of global greenhouse gas emissions from fossil fuel use can be traced back to this one company.

Using conventional accounting, the liquidation of our fossil-fuel inheritance is seen as a benefit to the economy. But the picture changes when a more comprehensive spreadsheet is used that subtracts environmental damage. Then an assessment of BP's performance would, conservatively, subtract a carbon damage bill of £1.64 billion from its final profits for direct emissions, and a further £27.5 billion from the use of its products. Together, this produces a total environmental cost bill of just over £29 billion (not far short of all government revenue from fossil fuels), making the company effectively bankrupt. This is an indication of how unsustainable the economy has become.

The same calculation for Shell, which claimed far lower, total related greenhouse gas emissions of 874 million tonnes CO_2 equivalent from production, manufacturing, delivery and products put Shell £4.5 billion ($8 billion) in the red, even as it reported its £13 billion ($23 billion) profit.[3]

The sensitivity of such figures might explain an extraordinary change in the way that BP calculated the scale of emissions linked to its business when new data were published in 2006.[4] Applying a new methodology to account for the emissions stemming from their direct operational emissions, and the products they sell – had the effect of more than halving the total.

Applied retrospectively, the emissions figures quoted in BP's 2004 sustainability report (published in 2005) from products sold globally (not including direct

Box 1. Mining money: 2005 a bumper year for oil

Exxon Mobil 2005 profits reached $36.1 billion[5]

Shell The Anglo-Dutch energy giant generated profits of $22.94 billion (£13.12 billion)

BP Profits for 2005 went up to $19.31 billion (£11.04 billion) up nearly one-third on last year when it set a UK record with profits of $17.59 billion.[6]

Chevron's $14.1 billion profit for 2005 was a company record [7]

emissions from its operations which are mentioned separately), shrink from 1,376 million tonnes of $C0_2$ equivalent – to just 606 million tonnes. Somehow, over 750 millions tonnes of climate change culpability vanished into the atmosphere, although even this smaller figure, using the Treasury methodology would still carry a carbon-related environmental-damage figure of £12.1 billion. Perhaps the sheer scale of related emissions was deemed incompatible with the company's aggressively marketed new green image and strapline of 'beyond petroleum'.

Nevertheless, in spite of BP's emphasis in its advertising on renewable energy, it conceded in summer 2006 that, "Our main activities are the exploration and production of crude oil and natural gas; refining, marketing, supply and transportation; and the manufacture and marketing of petrochemicals."[8] Even more to the point, its pattern of investments in research and development shows that this is how things will stay. In 2005, only around one-twentieth of its investment went into what it termed 'alternative energy' (a definition in which BP includes some fossil fuel, gas-powered generation). On the other hand, over 70 per cent of its capital investment went towards finding even more oil and gas. Shell, which also likes to promote clean, green credentials in its advertisements, was even worse. Just 1 per cent of its investment went towards renewable energy compared to 69 per cent to explore for more oil and gas.[9]

Why a 'windfall-type' tax

How should we raise the money for an Oil Legacy Fund? There are several options. Carbon-intensive products could carry environmental taxes at the point of sale to make the consumer pay directly. Or, a levy could be made at the point of production. In principle, for markets to function properly, the price of a product should take account of its full costs, including those to the environment. One of the greatest criticisms of current economics is that a natural resource like oil is treated in national accounts as 'free income'. Neither the costs of its depletion – a rough equivalent to how a company would have to account for the depreciation of its assets – nor the costs of environmental damage from its use are currently included in the price. This means that the appropriate signal to the consumer to change behaviour, sent through the price, doesn't happen.

In a world in which global demand for oil outstrips supply, the price will inevitably go up. But, not in a way guaranteed either to preserve the availability of fossil fuels for future generations, or to change behaviour, reducing greenhouse gas emissions to prevent runaway climate change.

Consumer pricing will change, but as oil prices rise anyway, this briefing suggests that this is likely to limit the scope for new consumption taxes, suggesting that – in the short term at least – a producer tax is more viable (without taking away from the importance of moving to full-cost accounting over time). The fuel protests witnessed as petrol reached £1/litre in the UK and $3/gallon in the US are evidence of consumer resistance to fuel taxes.

The UK Government taxes the tobacco industry heavily to try and reduce consumption and cover the costs to the NHS of treating tobacco-related diseases. At present, the rate of tax on hydrocarbons does not reflect the urgent need to tackle our addiction to oil and is not enough to cover the costs of climate change.

Box 2. Carbon footprints of major revenue sources

Producer taxes:

- The UK produced 95.4 million tonnes of oil in 2004.[10] While carbon emissions vary widely between end uses, the average may be in the order of 3 tonnes of CO_2 per tonne of oil. This suggests total emissions in the order of **286.2 million tonnes of CO_2 or 78 million tonnes of carbon**.

- The UK produced 9.5 billion cubic feet of **natural gas** per day in 2004. Since each 1,000 cubic feet of natural gas produces 120.6 pounds of CO_2, this indicates total emissions of **186.7 million tonnes of CO_2, or 50.9 million tonnes of carbon**.[11]

Fuel duty, VAT and vehicle excise duty:

- The Department for Transport (DfT) estimates put total carbon emissions from road transport in the UK at **32.4 million tonnes of carbon (118.9 million tonnes of CO_2)** in 2005.[12]

Airline Passenger Tax:

- Total UK consumption of aviation fuel was 11.9m tonnes in 2004.[13] Since one barrel of aviation fuel generates 771 pounds of CO_2, this suggests that each tonne of aviation fuel generates 2.58 tonnes of CO_2, or 0.7 tonnes of carbon, giving total emissions of **30.7 million tonnes of CO_2 or 8.4 million tonnes of carbon**.[14]

Background

Windfall taxes provide a kind of precedent for how an Oil Legacy Fund could work, based on a new producer levy. Our fossil fuel wealth is – regardless of recent price rises – a windfall from nature.

In the 1981 Budget a Special Tax on Bank Deposits was imposed by Conservative Chancellor Geoffrey Howe. It was justified on the grounds that raised interest rates led to substantially higher profits for the main clearing banks.

Set at 2.5 per cent on banks' non-interest-bearing current account deposits (above a minimum threshold) the tax was estimated to raise £350 million (substantially more at today's prices).

In the 1997 Budget, the Government announced there would be a "Windfall levy on all the excess profits of the privatised utilities." They stated that this was due to the fact that the privatised companies such as British Gas and British Telecom, had been sold too cheaply. Regulators had been too lax and some companies were considered to be exploiting a degree of monopoly power.

The money raised by the tax would be used to fund a 'welfare-to-work' programme aimed at helping the young and long-term unemployed back to work.[15] In the event, the Government collected one or two instalments of about £5 billion.

Windfall taxes were considered by the Treasury and the Deputy Prime Minister to rescue London's £5 billion cross rail link and the £33.5 billion rail network which had run out of money but never happened, and called for help to finance improvements to the London underground.[16]

In 2001, the Government came under pressure to impose a windfall tax on oil companies after BP announced record profits of £9.75 billion as the price of petrol to consumers was considered high.[17] But Gordon Brown resisted.

In January 2005, Martin O'Neill, Labour Chair of the Commons Trade and Industry Select Committee, said a windfall tax should be used to help people in fuel poverty, saying, "It is not unreasonable to assume that the profits that come from these companies should be directed, at least in part – either voluntarily or fiscally – to the UK's disadvantaged energy consumers." Vince Cable, Treasury spokesman for the Liberal Democrats, a party usually proud of its commitments to the environment and social justice, rejected the idea on the grounds that it would put off investors and threaten jobs in the sector. Interestingly Cable is a former chief economist at the oil company Shell.[18]

How it could work

Windfall taxes are, however, usually of a one-off nature. This is appropriate in circumstances where oil companies make unearned super-profits due to occasional upward fluctuations in price.

But the case argued here is somewhat different. First of all, in an important sense fossil fuels are themselves an unrepeatable economic windfall and, especially given the harm they are doing to the atmosphere, there is a strong argument that they should be taxed accordingly. Secondly, because of the clash between rising demand for oil, and limited supply and production capacity, oil prices are likely to stay high and rise still further. That means that the current situation of high prices is not a blip, but a permanent new situation.

This argues in favour of new royalty charges that will have to take into account conditions written into existing contracts. In other words, there is a need for a separate levy, constituted as a tax on production. In practice, this would need to take account of extraction costs – accepting that difficulties faced by the most costly forms of production will themselves send an important economic signal – existing royalty obligations and oil prices. It raises the point that existing contracts probably should already include sufficient claw-back provisions for higher, world oil prices, to cater for just such eventualities.

In effect, we need a permanent automatic windfall tax, determined by world oil prices, and based on a formula linking tax to the world oil price, and also linked to new spending demands incurred as a consequence of climate change. The additional revenues from existing royalties and taxes when oil prices are high could also go to the fund. Importantly, such a fund could also operate as a stabilisation fund, in the less likely scenario when, if for any unforeseen reason, low oil prices result in a deficit, in which case the fund would pay money back to the Exchequer.

How it could be spent

At least compared to Norway, Britain has frittered away its oil income without investing adequately in a sustainable long-term energy supply. For example, we can only conjecture how much further advanced our domestic renewable energy sector would be, had it enjoyed the same level of public investment over the last half a century as that received by either the roads programme or the nuclear industry.

It is, therefore, long overdue for the proceeds from liquidating our fossil fuel assets to be put to better, and more appropriate use.

Investing in transition

This briefing suggests that, in a world of steeply rising oil prices, the Government is likely to view the scope for substantial new consumption taxes as limited. Some approaches are, however, almost certain to become more common, such as road pricing and a more fully evolved air passenger tax.

Yet the need for an Oil Legacy Fund is enormous, not only because the chance to prudently invest its benefits is slipping away, but also because the scale of necessary re-engineering of the economy is so great, and the degree of support needed for individuals to make changes is so high.

We believe that the proceeds from an Oil Legacy Fund could, for example, be invested in:

- A fund for innovation, development and the promotion of micro, small and medium-scale renewable energy technologies.
- Local planning. An advice service to help local planning authorities with the complexities of managing new, decentralised renewable energy services and technologies.

- An advice service to help householders who want to adopt small-scale renewable energy technologies to find their way through local planning requirements.
- An expansion of the use of school buses to tackle both congestion – the 'Chelsea Tractor gridlock – and energy-inefficient private-vehicle use on the school run.
- Lowering the age for free public transport.
- Allowing adults with children to go free on public transport.
- Making energy-efficient alternatives – such as low-energy light bulbs – available for at least the same price as less efficient versions. This would have the double benefit of increasing uptake and lowering production costs.
- Making household-energy-monitoring devices available in order to increase awareness of current energy use and to make people aware of opportunities to improve.
- Supporting standards for sustainable new-build eco homes, which have built-in energy efficiency.
- Enabling fast-track access to the national grid for renewable energy supplies.

Conclusion

It is clear to us that the record profits of the oil companies can only possibly be justified if they are used appropriately. To begin with, that means a major rollout of renewable energy technologies and a redesign of the UK's inefficient energy system and national grid, in favour of a more efficient, decentralised system. In these circumstances, the UK might even stand a chance of reaching the greenhouse gas emission reduction targets set by the Government. The UK, then, also would have no excuse not to meet its overdue contributions to the special global funds set up to help poor countries adapt to climate change.

Part 2 of this briefing is a detailed assessment of the current dependence of the public purse on revenue from the fossil fuel sector. It shows how, long after the peak of North Sea oil, the dependence of the Exchequer is still high. And, unless urgent moves are made to use those proceeds to shift the economy onto a sustainable footing, Britain will be left acutely exposed to both high global prices and, ultimately, a shortfall in supply. We will, in effect, be like addicts who can no longer either afford or find our fix, and be facing a long, hard period of drying out.

Part 2

Revenues from oil- and gas-related taxes and duties since 1978/9[19]

Total oil- and gas-related revenues increased rapidly in the first half of the 1980s, reaching a peak of £40.2 billion (at 2000 prices), or 14.6 per cent of HM Revenue and Customs receipts. This largely reflected the development of the North Sea fields, coupled with continued high prices following the major 'oil shock' increases of 1973/4 and 1979. However, revenues fell sharply after 1985/6, halving to £20.6 billion in 1992/3, reflecting the dramatic fall in oil prices in 1986, and the temporary drop in North Sea production in the late 1980s and early 1990s. Despite the restoration of previous production levels and higher world prices, revenues have recovered only partly, to a peak of £32.6 billion in 2000/01, and have fallen slowly since, to £31.1 billion in 2004/5. This figure, however, excludes around £6 billion in VAT bringing the total to over £37 billion.[20]

Figure 2: Revenues from oil- and gas-specific taxes and duties 1978/9–2004/5 (UK £bn, 2000 prices)

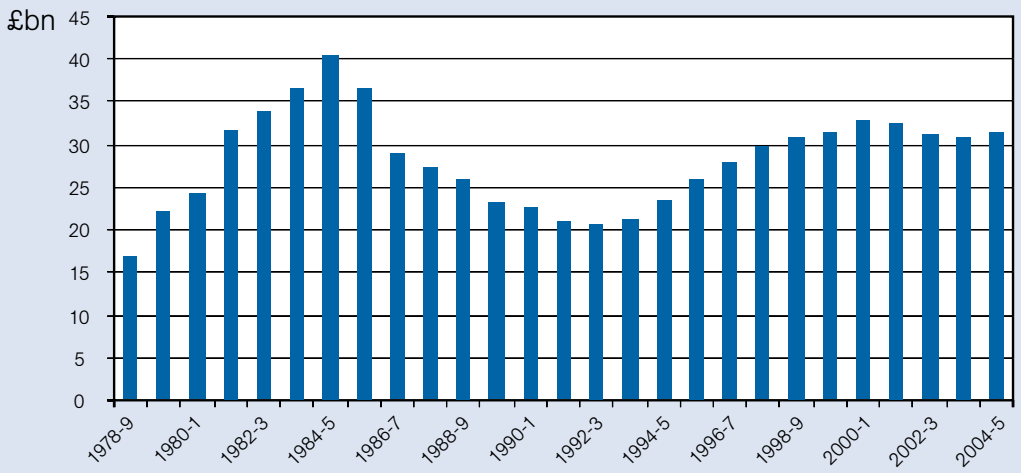


Figure 3: Revenues from oil- and gas-specific taxes and duties, 1978/9–2004/5 (% of total HMCE net receipts)

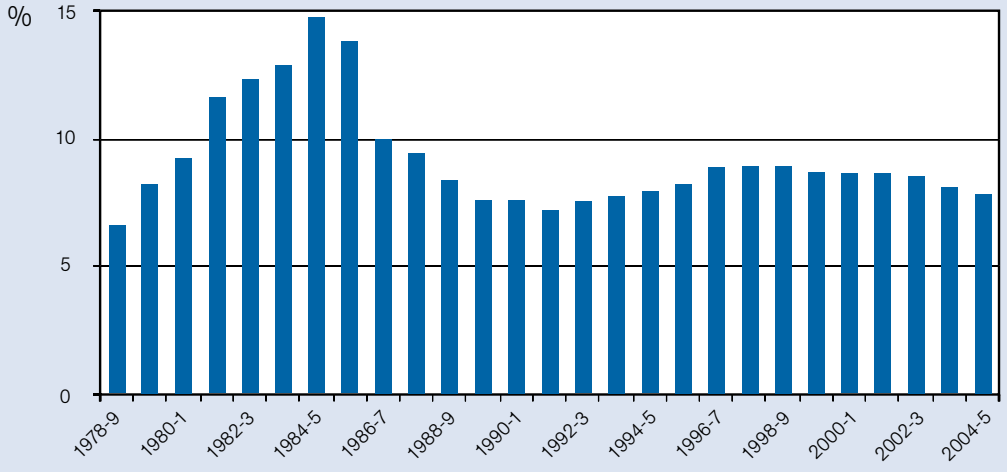


Figure 4: Revenues from oil- and gas-specific taxes and duties, 1978/9–2004/5 (% of total HMCE net receipts)

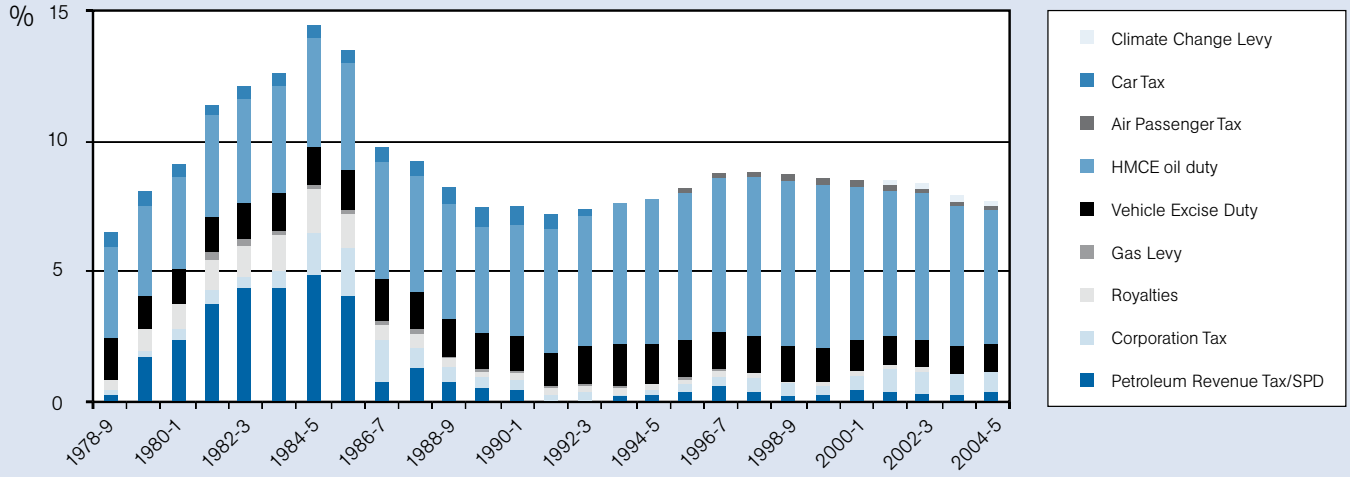
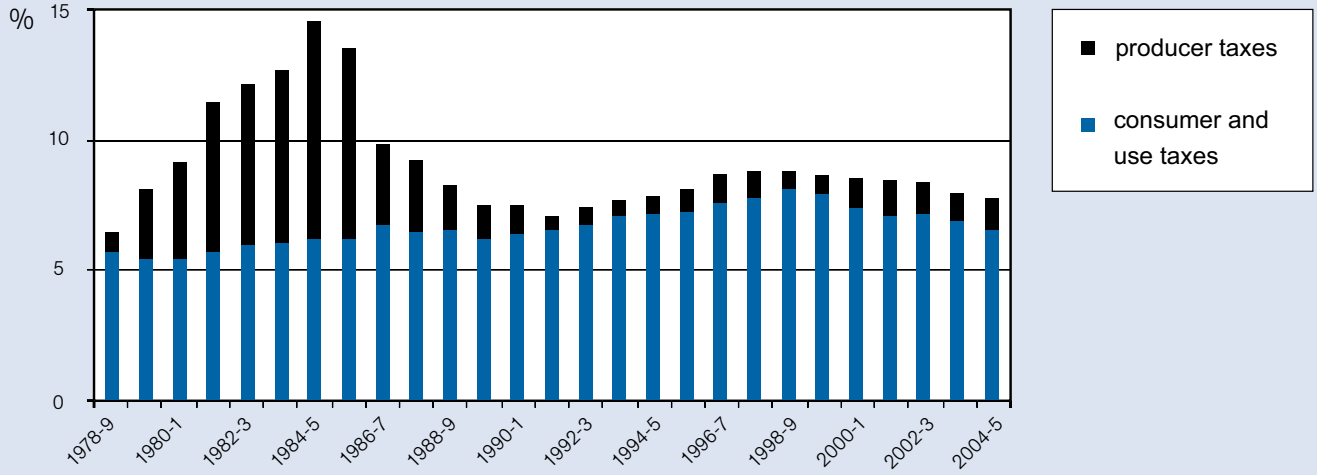


Figure 5: Producer and consumer/use taxes (% of total HMRC revenues)a



As a proportion of total revenue, the trough was 7.1 per cent in 1991/2, and the second peak was 8.9 per cent in 1997/8. The subsequent decline has also been much stronger, reaching 7.8 per cent in 2004/5.

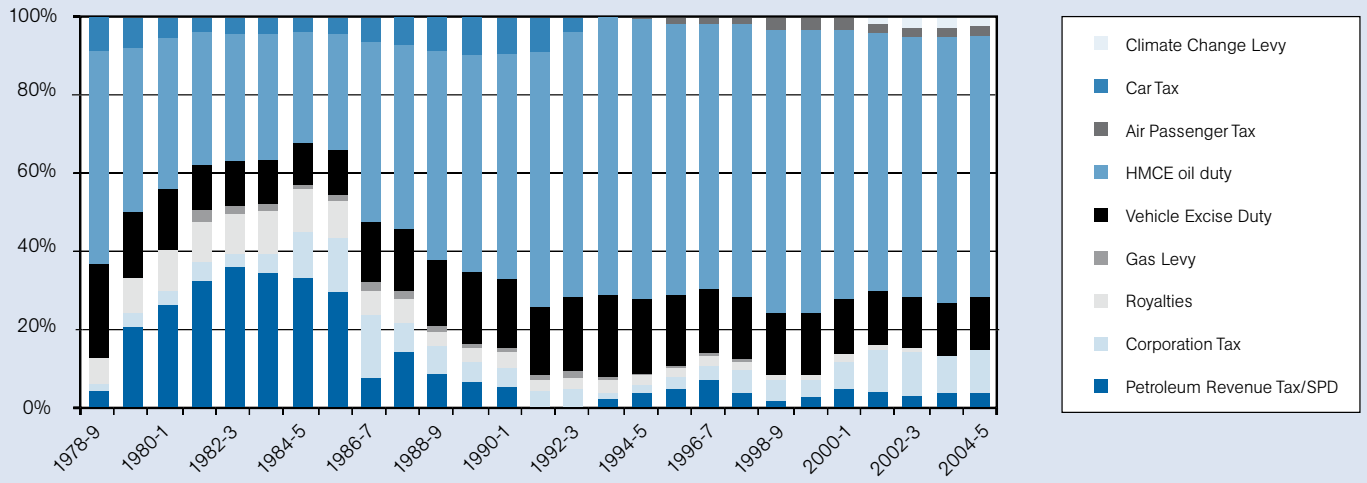
The variation in revenues between 1978/9 and 1986/7 is almost entirely accounted for by petroleum revenue tax, corporation tax, royalties and (in 1981/2 and 1982/3) the special petroleum duty. Other revenues have remained relatively stable.

This has led to a marked shift in the composition change in oil- and gas-related taxes and duties as well as their overall contribution. While taxes levied on North Sea production represented around 50 per cent of the total in the first half of the 1980s, they almost disappeared at the beginning of the 1990s, and have recovered only to a limited extent since.

In 2004/5, North Sea revenues were estimated to be just 15 per cent of the total, taxes and duties on sales, uses and latterly emissions representing the remaining 85 per cent. While there has been some recovery since the late 1990s, this is almost entirely made up of corporation tax rather than oil-specific taxes and levies. Specific climate-change-related carbon taxes remain minimal.

The shift towards revenues from taxes on sales/uses reduces the sensitivity of revenues to the decline in North Sea production. However, it does raise a different concern. In principle, the prospect of much higher world oil prices offers the possibility of increasing taxes on the extractive industry, to capture some of their windfall. Declining North Sea production, however, will increasingly limit the

Figure 6: Composition of revenues from oil- and gas-specific taxes and duties, 1978/9–2004/5 (% of total)



scope for this. Conversely, as oil prices rise, there will be increasing pressure from consumers to reduce taxes on sales and uses of oil to limit the costs to end-users. Since these now constitute the overwhelming bulk of revenues on oil and gas, this could exert substantial pressure on overall receipts.

Chronic low investment in the fossil fuel industry's extraction and production infrastructure points to steeply rising industry costs in the near future. Regular horror stories emerge from the industry about shocking increases in even the daily hire rates for tugs capable of towing exploration rigs from place to place. As reserves decline, these problems combine with the increasing difficulty of exploration, and an increasing average cost of extraction, to further limit the potential for higher North Sea taxes.

In his pre-budget report, Gordon Brown announced that he would double the supplementary charge on oil companies from 10 per cent to 20 per cent.[21] The effect will be to increase the total revenues from North Sea production by a further £2,630 million, following an increase of £3,875 million this financial year. The effect is to nearly double the total contribution of the sector to total revenues, from 1.16 per cent to 2.26 per cent. While detailed projections are not available on other taxes, this is also likely to increase overall oil-and gas-related taxes and duties, both absolutely and as a percentage of the total, and to shift the balance slightly from taxes on consumption back towards taxes on production.

Producer taxes

Revenues from Petroleum Revenue Tax and Special Petroleum Duty were very heavily concentrated between 1979/80 and 1985/6, during which time they accounted for between 2 per cent and 5 per cent of total HMRC revenue. Since 1991/2, they have averaged only around 0.2–0.3 per cent.

Corporation tax receipts from oil and gas companies peaked at 1.6–1.7 per cent of revenues in 1984/5–1986/7, falling dramatically to a trough of 0.1 per cent in 1993/4, but have since recovered to around 0.7–0.9 per cent over the last four years – the highest of any period except the 1984/5–1986/7 peak.

Royalties also rose (very rapidly, though less abruptly) to a peak of 1.7 per cent in 1984/5, falling back very sharply to 0.3 per cent in 1988/9, continuing to decline to 2002/3, and apparently to zero since then.

The gas levy contributed more than 0.3 per cent of revenue in its first year of operation, 1981/2, but fell progressively thereafter to around 0.05 per cent in 1994/5–1997/8, and to zero thereafter.

Oil duties

Oil duties have been the major contributor to oil- and gas-related revenues, except when petroleum revenue duty was at its height in the mid-1980s. It has also been

Figure 7: UK natural gas production and consumption, 1970–2004 (billion cubic metres)

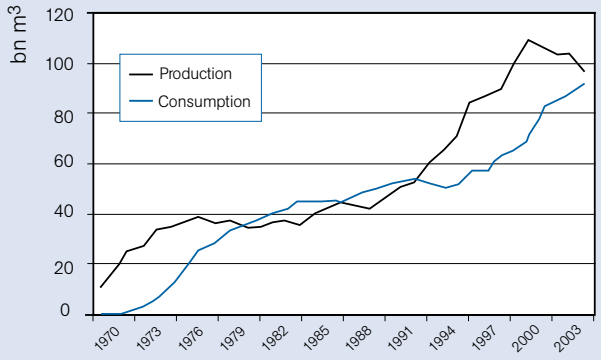
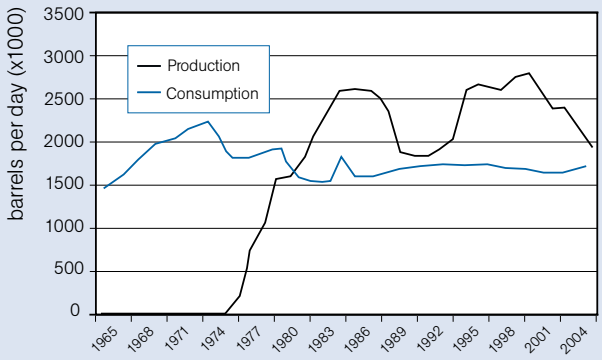


Figure 8: UK oil production and consumption, 1970–2004 (thousand barrels per day)



the most consistent revenue source over time and, while following a somewhat cyclical pattern, it has shown an increasing trend over time, from 3.6 per cent in 1978/9 to 5.2 per cent in 2004/5, with a peak of 6.5 per cent in 1998/9.

VAT on duty (not included above, as data are available only from 1991) adds around 1 per cent of HMRC revenues. The amount collected increased from 0.8 per cent of revenues in 1991/2 to 1.1 per cent in 1998/9 and 1999/2000, before falling back to 0.9 per cent in 2004/5. This will both slightly accentuate the recovery and subsequent decline in overall revenues during this period, and strengthen the predominance of consumption over producer taxes.

Use-related taxes

Vehicle Excise Duty (VED) has been the largest source of revenue from taxes on oil use, but has declined over time from 1.6 per cent in 1978/9 to 1.1 per cent over the last four years, despite temporary increases in the early 1980s and 1990s.

Car tax provided around 0.4–0.7 per cent of revenue until its abolition in 1992/3.

Air Passenger Tax rose to a peak around 0.25 per cent of revenue, falling back to 0.2 per cent over the last four years.

The Climate Change Levy has contributed between around 0.1 per cent and 0.2 per cent of revenue during its four years of operation.

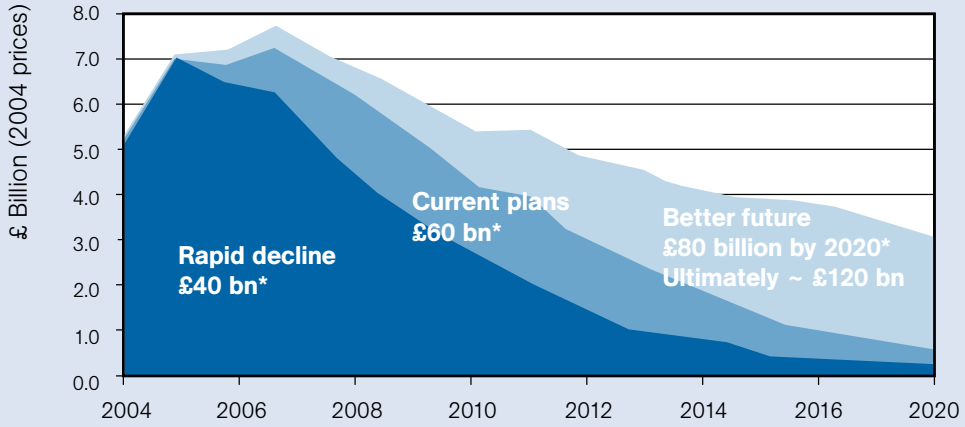
UK oil and gas production

UK oil and natural gas production peaked in 1999 and 2000, since when they have declined at an average rate of 7.0 per cent pa and 3.0 per cent pa respectively (to 2004). Subsequent estimates for oil by the US Energy Information Administration (EIA) show a decline of 7.8 per cent pa, continuing to 2005.[22]

The EIA anticipates a decline in UK oil production to 1.4 mbd (million barrels per day) in 2025. Contrary to general expectations, however, this appears to be based on an assumption of a temporary recovery to 2.2 mbd in 2010 (an increase of 1.6 per cent pa from the actual figure of 2.0 mbd in 2004), suggesting that this may be an optimistic scenario, or use a baseline inconsistent with the historical data. These figures would imply an average reduction of 1.7 per cent pa in 2004–25, and 3.0 per cent pa in 2010–25.

Taken together, these figures suggest a decline in real UK energy production in the order of 5 per cent pa, suggesting that taxation per unit of production would need to increase at a similar rate for total revenues to remain constant. Based on the assumptions for tax per unit of production, as discussed above, this would require an increase in world prices of well over 10 per cent pa.

Figure 9: Estimated revenues from UK Upstream Oil and Gas activities



* Estimate Total Upstream Oil/Gas Tax revenues 2006–2023

Source: UKOOA (2005)

These findings are broadly consistent with the UK Offshore Operators Association's (UKOOA) projections of rapidly declining tax revenues from production taxes as shown in Figure 9, although a direct comparison is not possible because the underlying assumptions for these projections are not specified.[23]

This suggests that, should world energy prices rise considerably faster than is currently envisaged even in high-price scenarios, the potential for production taxes will decline rapidly as a result of increasing production costs and declining levels of production.

Consumption and use taxes: fuel duties, VAT on fuel and VED

Rising oil prices give rise to increasing pressure to avoid increasing taxation on fuel use. Thus, in his 2006 budget speech, Gordon Brown noted that:

> *"It is our policy that each year fuel duties should rise at least in line with inflation, as we seek to meet our targets for reducing emissions and to fund our public services. But for the fourth successive budget, because of high and volatile prices in the oil market, I propose to defer the usual inflation increase until September 1st."*[24]

The extreme manifestation of this – and one that will haunt Chancellors for years to come – was the fuel protests in 2000. In a high-oil-price scenario, therefore, the potential to increase, and perhaps even to maintain, fuel and vehicle excise duties is likely to be limited.

When the fuel protests occurred in 2000, the price of unleaded petrol was £0.76 per litre. Further, more limited protests occurred in 2005, with the price at £0.91 per litre. If we view these observations as representing the limit on the politically feasible price of petrol, it suggests a limit of £0.91 (approximately the current level), rising by around 3.6 per cent pa (1.2 per cent pa in real terms).

Over this period, however, revenues from VED revenues fell from a peak of £4.89 billion in 1999/00 to £4.75 billion in 2004/05, a decline of £0.75 billion in real terms, partly off-setting the effect on motorists of increasing fuel prices. If we assume that it is the total of VED and fuel costs that represents the political constraint, this implies a slower rise in the politically sustainable fuel price of around 0.6–0.7 per cent pa.

In 2005, fuel duty and VAT accounted for 67 per cent of the total price of fuel, the remainder being made up of product cost (26 per cent) and delivery and retailing (7 per cent). If we assume that retailing and distribution costs remain constant in real terms, and that product costs rise in line with world oil prices, this suggests a picture for tax per litre such as that shown in Table 2. If world oil prices remain

Table 2: Oil price scenarios

scenario	% change pa (real)					
	world oil price	producer taxes	duty + VAT	VED	weighted average	relative to GDP
low price	-1.8	-7	+2½	0	+1	-2
mid price	+2.1	-5	+1	0	0	-3
high price	+4.8	-4	-½	0	-1	-4

Note: *Weights are based on 2004/5 revenues: producer taxes 13.9%; duty + VAT 73.3%; vehicle excise duty 12.7%. NB changes in VED are assumed to have an equal and opposite effect on fuel duty and VAT. The final column assumes an annual growth rate of real GDP of 3% pa (in line with HMT's forecast for 2007/8).*

constant in real terms, this will allow increasing space for taxation. As the oil price rises, however, the product price segment will expand, squeezing the tax potential per litre. A further reduction may occur if retail and distribution charges are proportional to final product prices, as this will both increase the effect of rising product prices (by about a quarter) and raise the price implied by a given rate of taxation (by about a tenth of the amount of tax).

This suggests that the potential for increases in tax on fuel will increase by around 1 per cent pa if the oil price remains constant; and that each 1 per cent increase in the world price of oil will slow this rate of increase by around 0.4 per cent.

Total revenues will be determined by the amount of duty and VAT charged per litre and the volume of sales. On the latter, consumption of petrol and diesel for road transport increased by 0.6 per cent pa between 2000 and 2004.[25] However, meeting targets for carbon emissions is likely to require some reduction in this rate of increase, so this figure is viewed here as a maximum. Taking this into account, the break-even point for total revenues is increased to an oil price increase of up to about 4 per cent pa. (The effect of a 1 per cent rise in the world oil price remains at 0.4 per cent.)

A related consideration is road charging, which will have a similar effect in increasing the cost of motoring, and therefore add to downward pressure on fuel and VED. If road charging were applied by the public sector (as in the case of the London Congestion Charge), the effect would be largely an indirect transfer from national to local government (although there would be additional costs for its collection). However, if road charging were used as a means of privatising the road network or incentivising commercial road building, there would be a direct loss of public revenue, off-set only to the extent that public sector road building and/or maintenance was reduced. This would give rise to a substantial net reduction in revenues.

What will happen to prices?

The discussion above suggests the following implications from the three oil price scenarios set out in more detail in Table 2.

This suggests that the potential revenues from these taxes will fall in real terms if the world oil price increases by more than around 1½ per cent pa. Even in the low-price scenario, with real prices falling by 1.8 per cent pa, revenues will fall by 2 per cent pa relative to GDP. In the high-price scenario, the fall is 4 per cent pa. Since these taxes account for around 9 per cent of total HMRC revenues, this suggests that other taxes will need to increase by an average of around 0.2–0.4 per cent pa to off-set this.

While the UK Government's receipts from taxation on oil and gas remains well below their mid-1980's peak, they still constitute an important component (around 8 per cent) of central government revenues – slightly more than corporation tax, and more than twice as much as total duties on alcohol and tobacco. However, their contribution to the total has faced a renewed reduction since the late 1990s.

Moreover, the scope for real revenue increases from oil and gas will be minimal unless world oil prices fall; and even then, revenues will fall significantly relative to

GDP. Even if the Government taxes the sector to the maximum extent feasible, on a plausible range of scenarios for the world oil price, revenues are projected to fall by between 1 per cent and 2½ per cent pa relative to GDP. Neutralising this effect would require an average increase in other taxes of around 0.1–0.2 per cent pa.

World oil-price scenarios

The table below sets out three scenarios for oil prices to 2025.

1. The **low-price** scenario is based on World Bank projections in *Prospects for the Global Economy – Forecast Summary 2004-8* (May 2006) until 2008. Thereafter, the price is projected to fall to the 2010 level projected in the Bank's *Global Economic Prospects, 2005*, and to remain constant in real terms thereafter.

2. The **mid-price** scenario is based on NYMEX oil futures prices (as on 2 August 2006) until 2012. Thereafter, prices are assumed to remain constant in real terms (assuming inflation of 2 per cent pa).

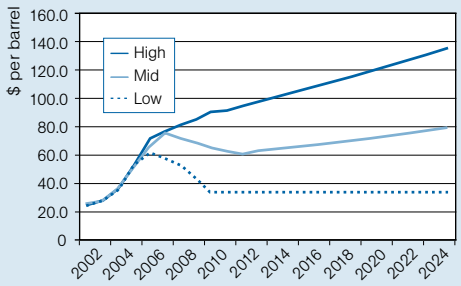
3. The **high-price** scenario assumes that the oil price reaches $100 per barrel in nominal terms in 2010, and $200 per barrel in 2025.

Between 2005 and 2025, the real price falls by an average of 1.9 per cent pa in the low-price scenario, rises by 2.1 per cent pa in the mid-price scenario (virtually all of the increase occurring in 2005–7), and rises by 4.4 per cent pa in the high-price scenario.

Table 3: World oil-price scenarios

	Price ($/barrel)					
	Nominal			2006 prices		
	Low	Mid	High	Low	Mid	High
2002	24.9	24.9	24.9	27.0	27.0	27.0
2003	28.9	28.9	28.9	30.7	30.7	30.7
2004	37.7	37.7	37.7	39.2	39.2	39.2
2005	53.6	53.6	53.6	54.7	54.7	54.7
2006	64.3	69.1	74.3	64.3	69.1	74.3
2007	61.0	78.8	80.0	59.8	77.3	78.4
2008	56.9	77.3	86.2	54.7	74.3	82.8
2009	47.7	75.3	92.8	45.0	71.0	87.5
2010	40.0	73.3	100.0	37.0	67.7	92.4
2011	40.8	71.8	104.7	37.0	65.0	94.9
2012	41.6	70.7	109.7	37.0	62.8	97.4
2013	42.4	73.6	114.9	37.0	64.0	100.0
2014	43.3	76.5	120.3	37.0	65.3	102.7
2015	44.2	79.6	126.0	37.0	66.6	105.4
2016	45.0	82.8	132.0	37.0	67.9	108.2
2017	45.9	86.2	138.2	37.0	69.3	111.1
2018	46.9	89.6	144.7	37.0	70.7	114.1
2019	47.8	93.3	151.6	37.0	72.1	117.2
2020	48.8	97.0	158.7	37.0	73.5	120.3
2021	49.7	100.9	166.2	37.0	75.0	123.5
2022	50.7	105.0	174.1	37.0	76.5	126.8
2023	51.7	109.2	182.3	37.0	78.0	130.2
2024	52.8	113.7	191.0	37.0	79.6	133.7
2025	53.8	118.2	200.0	37.0	81.2	137.3
Real increase, 2005-2025 (% pa)				***-1.8***	***2.1***	***4.8***

Figure 10: Oil price projections, 2002–2025 (2006 prices)



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