

►Spar, says that it was clearly the best option on the basis of all three of the major criteria used; even the environmental risks, says Faulds, are higher for the onshore disposal option because of the danger that the buoy might break up as it was being towed to shallow waters.

But the oil company reversed its decision when Greenpeace attacked its disposal plan, with protesters trailing the Brent Spar to its proposed watery grave, and hundreds of thousands of sympathetic motorists boycotting Shell, particularly in Germany, where service stations were firebombed.

Of course, there is no certainty that even the best scientific information could have defused the conflict. But the company now admits that its process for selecting deep-sea disposal should have been more transparent. And all parties might well have benefited from a more thorough and systematic risk assessment of the various options being studied.

Now, with the Brent Spar towed to a deep-water site in a Norwegian fiord, such an assessment is finally under way. An independent group of scientists, headed by John Shepherd of the Southampton Oceanography Centre, has been given the task by the UK Department of Trade and Industry.

The new study may lay to rest some of the disagreements about the potential environmental impact of the original deep-sea disposal plan. In particular, it is expected to conclude that Shell's own analysis was substantially accurate in its assessment of the impact.

But public statements by Greenpeace suggest that, whatever the outcome of the Shepherd review, its own preference for land disposal is unlikely to change. In particular, the environmental group claims that the impact of cumulative disposal of many such structures over very long time periods remains unresolved, and argues that the Brent Spar's materials should be recycled.

Last year's high drama is now over. But a decision about the fate of the Brent Spar still needs to be made. In October, Shell invited proposals from individuals and contractors for the disposal or recycling of the storage buoy. Later this month, it will announce a short list of six, and these will be further assessed not only on the usual criteria of safety, cost and environmental risk but also, as a result of last summer's events, public acceptability.

Meanwhile, Greenpeace's most successful argument is likely to be that no amount of scientific argument can offset a gut feeling that the sea should not be used as a toxic dumping ground under any circumstances. Shepherd himself acknowledged that it is not only scientific considerations that should be considered in reaching an eventual decision. "If people have an emotional response to pristine areas like Antarctica or the deep sea, and want them to remain unpolluted, it is not up to scientists to say this is irrational," he says. **Alison Abbott**

## Brent Spar's risks: who says what

**London.** Throughout the Brent Spar affair, Shell has argued that its choice of sinking the oil storage buoy off northwest Scotland was based on a careful analysis of the environmental impact and health risks, using independent expertise. Documents made public by the company cite several reports that it commissioned to examine the Brent Spar disposal, including those produced by researchers at the University of Aberdeen.

But Greenpeace has disputed Shell's claim to have made a dispassionate assessment of the various options. It has argued that Shell chose the most convenient option, that its conclusions were questionable, and that the company was unduly secretive about the data it used. Despite subsequently acknowledging that faulty sampling methods had led to its own incorrect assessments of sludge on the buoy, Greenpeace continues to insist that its own arguments still rule out deep-water disposal.

Following Greenpeace's victory over Shell, the two sides have continued to cross swords over the disposal of the Brent Spar through a flurry of public statements — including allegations about the use of science in the affair. Two of the key themes have been:

### Decision-making framework

Greenpeace questions Shell's decision to treat the disposal of such installations on a case-by-case basis. The group argues that this excludes consideration of the cumulative impact of future disposals, and that it therefore runs counter to the tide of international opinion, potentially establishing a precedent for dumping other wastes into the sea.

Greenpeace also points out that all signatories to the 1958 Geneva Convention on the Continental Shelf (including the United Kingdom) are committed to removing abandoned installations completely. It also says that, as the effects of dumping toxic material into the sea are unknown, Shell's position runs contrary to the "precautionary principle" enshrined in a number of international agreements to which the United Kingdom is also a signatory.

Greenpeace maintains, moreover, that Shell wrongly excluded options that, according to an analysis commissioned by Greenpeace, would allow 99 per cent of Brent Spar materials to be recycled or made harmless.

Shell responds by pointing out that Brent Spar is a one-off structure and therefore does not set any precedent. The company alleges that Greenpeace is conducting "single-issue campaigning" — that it is concerned only with the potential toxic effects of the structure on the ocean bed.

The oil company, on the other hand, argues that the impact of waste on one area of the environment cannot be considered in isolation from other areas — such as land and the atmosphere — nor can it be considered in isolation from the impact on human health, safety and cost. Furthermore, says Shell, Greenpeace "have not seen the full details of studies undertaken by numerous expert bodies", which it intends to publish in full.

### Bad science

Both sides accuse the other of poor use of science. Greenpeace claims that Shell kept many scientific documents confidential for commercial reasons, that "there was no open, rigorously critical appraisal of the science" and that Shell had been selective in its choice of experts consulted.

Greenpeace asks, for example, why Shell did not take advice from the Scottish Association for Marine Science (SAMS) and the Natural History Museum, two bodies with long experience whose scientists criticized the Shell proposal once it was made public.

Shell has responded by saying that it now welcomes comments by SAMS scientists, and that it is "willing to support any rational forum in which they can be further discussed". But the company points out that "the points made by these scientists were all addressed by the UK government's licensing authority" and that, over a three-year period of study into the planned disposal, it had consulted many independent experts.

