

OSO OFFSHORE SUPPLIES & SERVICE COMPANY ASSISTANCE FOR RESEARCH PROGRAMME (OSSCAR) & OSO SUPPORT FOR INNOVATION IN THE OIL & GAS INDUSTRY PROGRAMME

1. INTRODUCTION

1.1 OSSCAR ran from 1992-95 and was then followed by the Support for Innovation Programme which ran until March 1998. Both programmes were similar, their main aim being to encourage the creation of an advanced technological capability in the UK for the supply of products and services to the oil industry in their World wide operations.

1.2 The Support for Innovation Programme provided three types of support:

- part-funded usually collaborative R&D projects of direct relevance to the supplies industry. DTI contributes 25 per cent of project costs but 35 percent may be available for SMEs;
- feasibility studies- projects which are preparatory or feasibility studies leading to the preparation of a proposal which would meet the conditions for R&D projects;
- studies of technology trends in the sector, aimed at stimulating action in the private sector. The Department will normally meet the full cost of these studies so that the results are disseminated.

Table 1: New projects and associated programme expenditure on Support for Innovation 1995/96- 1997/98

	NO OF NEW PROJECTS	COMMITMENT £M	PLANNED \$ COMMITMENT	BUDGET+ £M	EXPENDITURE* £M
1995/96	24	1.601	4.000	4.100	4.120
1996/97	14	1.627	4.000	2.900	2.600
1997/98	13	0.508	4.000	1.600	1.684
	51	3.736	12.000	8.600	8.404

Source: IEP

\$ According to 1995 ROAME statement

+ Allowed by DTI

* Covering projects within OSSCAR and SFI

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1.3 An evaluation of both programmes was undertaken on the ending of the Support for Innovation Programme. The OSSCAR programme had previously been the subject of a review in 1994 but had not been fully evaluated testing of the achievement of its long-term objectives was therefore included.

2. RATIONALE AND OBJECTIVES

Rationale

2.1 The rationale for the Support for Innovation Programme had a number of elements. The two main elements were an information failure relating to difficulties which SMEs had in identifying technological challenges in the UK continental shelf. The second related to asymmetric information resulting in problems for SMEs financing R&D. Another element of the rationale related to attracting companies not already active in the oil and gas supply sector. The evaluation also identified an externalities argument for supporting R&D not contained in the ROAME.

2.2 In assessing the rationale evidence was obtained from participant companies by means of a survey undertaken by the Harris Research Centre. A study undertaken for OSO in 1997 also provided relevant information as did academic and other research relevant to rationales for government support for R&D provided by the Technology, Economic and Statistics Unit of DTI Technology and Standards Directorate.

2.3 The survey evidence did not support the existence of a general difficulty for SMEs in identifying current and expected future technology requirements. The majority of SMEs considered themselves well informed about customers' technology requirements although a high proportion said they would welcome access to a database of operators' future technology requirements.

2.4 The element of the rationale relating to financing of projects by SMEs was at least partly supported. Lack of funding for R&D and the need to encourage oil companies to give financial support to projects were found to be factors in applying for OSO funding for a majority of the companies. However, there was also evidence that the majority of SMEs in the sector used only in-house sources of funding for technology and innovation.

2.5 Neither OSSCAR nor the Support for Innovation Programme had encouraged any significant number of companies not already active in the oil and gas supply sector to establish a presence through R&D into new types of products and services relevant to the sector.

2.6 A further element of a rationale for government support to R&D by suppliers to the oil and gas sectors is the existence of externalities which mean that firms undertaking R&D projects are unable to capture all the benefits.

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Objectives

2.7 It was found to be still too soon to fully assess the achievement of the long term objectives of the OSSCAR programme since the proportion of companies that had completed projects three or more years ago was too low. On the basis of those companies that had done so a target of 40% resulting in commercial products within three years had not quite been achieved but a target of 20% achieving sales had been exceeded.

2.8 In addition to the overall objective of creating an advanced offshore technological capability in the UK the primary objective of the Support for Innovation programme was that at least half the projects should be carried forward into further stages of development and lead to a commercial product. There were in addition a number of specific performance measures.

2.9 The Support for Innovation Programme was found to have encouraged suppliers to the oil and gas sector to improve their capability in technical innovation both in developing new products and services and through the skills and knowledge gained in undertaking this type of project. The impact of the programme had however been reduced by the lower than planned expenditure and the resulting smaller number of projects.

3. EVALUATION EVIDENCE

3.1 The main source of evaluation evidence was a telephone survey undertaken for DTI by the Harris Research Centre. This included seventy OSSCAR participants (76% of the total excluding three that were interviewed face-to-face) and 33 Support for Innovation participants (80 per cent of the total excluding three interviewed face-to-face).

3.2 The survey results showed that just over a quarter of supported projects (19) under the OSSCAR Programme had so far been carried through to commercial development with a product or service available to customers in the oil and gas industry. A further 40 per cent (28) had completed their project and were still expecting to develop it commercially, most in the next one to two years. Seven projects (10%) had not yet been completed although all expected to develop these commercially once completed. Of the 35 respondents that did not yet have a product or service available commercially but expected to do so, 7 (20%) said that this would be in less than a year, 13 (37%) in one year and 9 (26%) in two years. Of the remaining six respondents four gave between three and five years and two said that they did not know.

3.3 Amongst 20 OSSCAR participants whose projects were closed before May 1995 (at least 3 years ago), 7 (35%) now had a product or service available to customers. A further 5 participants whose projects closed before May 1995 claimed they would have such a product or service available to customers in one year or less.

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3.4 Nearly a quarter of respondents (16) said that they had completed the project but were not expecting to develop it commercially. Various reasons were given for this including that the project did not work out as envisaged, they had not intended to develop commercially and lack of further funding.

3.5 Of the 19 respondents with a resulting product or service 12 (63%) had already achieved sales, including exports in the case of nine. Amongst the 20 respondents whose projects were closed three years or longer ago 5 (25%) per cent had achieved sales. The total revenue so far from sales for 10 respondents who provided this information was over £9 million. At the lower end of the range two firms claimed sales achieved of less than £50,000 whilst at the top end two firms claimed sales revenue of between £1m and £2m and another firm of between £2m and £5m. The median figure for sales was £100,000 which on the basis of respondents' expectations about future revenues should increase to £1million in two years. In the case of five firms all their sales were exports and for the other four firms that had exported their product or service these were a significant element of their total sales. Four of the seven firms that had not so far achieved sales expected to do so up to five years from now.

3.6 Asked about how far they were towards achieving the commercial objectives of the project only a small proportion of respondents who had developed, or were developing the project commercially, indicated that they were close. On a scale of 1-100% towards achieving their objectives just under 40 per cent of respondents gave a figure of over 50 per cent and only 9 per cent gave a figure of over 80 per cent. Nearly 60 per cent of respondents, however, expected to have fully achieved their objectives within two years.

3.7 When asked what, if any, additional benefits they had achieved through undertaking the project a third of respondents mentioned that it had enhanced their skills/ knowledge base and a similar proportion mentioned that it had increased their exposure to the oil companies. A much higher proportion of respondents in both cases agreed that the project had provided these benefits when prompted by the interviewer. When prompted a high proportion of respondents (83%) agreed that it had increased their understanding of oil companies' needs, allowed them to diversify (73%) and shown which technologies are not feasible (63%). Asked how significant these additional benefits had been 22 (31%) said they had been very significant and 44 (63%) fairly significant. Only 4 (6%) said that they had not been at all significant.

3.8 Sixty four per cent of respondents when asked whether they thought a competitor company in the UK would have undertaken the development of the product or service if they had not done so said no and 36 per cent yes they would have done so.

3.9 Of the 33 Support for Innovation projects that respondents were questioned about two-thirds (22) had been completed and of these 10 had been carried through to commercial development with a resulting product or service available. Of the remainder that had completed their projects 11 were expecting to develop this commercially and one was not. Eleven projects were still underway and in all cases

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respondents were still expecting to develop these commercially. Of the 22 respondents that were expecting to develop the project commercially but who did not yet have a product or service available, either because the project was still underway, or because they had not reached this stage, nearly two-thirds expected the new product or service to be available within the next year. Five expected it to be two years and the remainder longer or in one case they did not know.

3.10 Seven out of 10 firms that had a product or service available from the research had achieved sales and a further two expected to do so within the next year. The total revenue so far amounted to £35.5 million, although the majority of this was accounted for by one firm on a very large contract. Of the remainder 2 had achieved sales of up to £50,000, 3 of between £51,000 and £100,000 and 1 of between £101,000 and £200,000. The median figure for sales revenue of £100,000 would increase to £500,000 in two years time on the basis of information provided by respondents about the amount of revenue they expected to have been generated by that time. Sales revenue for four of the respondents included revenue from exports, accounting in the case of two for between forty and sixty per cent of the total revenue. Three of those exporting the product or service expected export sales to increase as a proportion of total sales over the next two years, and one for it to decrease.

3.11 Asked how far (on a scale of 1-100%) the commercial objectives of the project had been achieved so far 8 respondents said that they were between 71 and 80% towards achieving their objectives and 1 said between 81 and 90%. As might be expected, with some projects completed at different times and some still under way there was variation in the extent to which most companies had so far achieved their objectives. However, twenty three of those who were developing the project commercially (72%) expected to have fully achieved their commercial objectives in 2 years time.

3.12 When asked what, if any, additional benefits they had achieved through undertaking the project 11 (33%) said that it had increased their exposure to the oil companies, 6 (18%) that it had enhanced their skills/knowledge base and 6 (18%) that it had led to diversification of their business. When prompted a much higher proportion of respondents agreed that each of these had been additional benefits from the project. When asked about the significance of these additional benefits 18 (55%) considered them very significant and 13 (39%) fairly significant. Table 17 lists the additional benefits mentioned both unprompted and when subsequently prompted.

4. COST EFFECTIVENESS

4.1 It was only possible to make a provisional assessment of value for money achieved by the Programme because of the number of projects that were on-going or still in the process of commercialisation. Because of the uncertainty relating to the extent of displacement for those projects that had already achieved sales it was difficult to determine the value for money achieved for those OSSCAR projects that had subsequently resulted in sales of products and services. Excluding any displacement, these 10 OSSCAR projects had achieved sales of £4.2 million for total

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expenditure of £2.5 million. On the assumption of paying back the initial investment on the project R&D over 5 years, applying a discount rate of 8 per cent, these firms would need to achieve annual sales of over £0.7 million over a five year period. In practice because of costs other than those for R&D, returns from product sales are not a pure gain. Therefore additional sales would need to be rather higher to recover the full costs incurred by the relevant companies. The Support for Innovation projects were too recent to adequately assess the value for money achieved.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 Reference was made above to the conclusions relating to the rationale and objectives of the Programme and the value for money. There was evidence of high additionality in terms of both the projects undertaken and the sales achieved but also evidence that assisted firms under the Support for Innovation Programme might be displacing firms which would otherwise have entered the market.

5.2 Wider research on the sector undertaken for OSO by outside consultants indicated that in terms of the total number of suppliers within the sector more action was required to develop their capabilities in technical innovation than it had been possible for these programmes to address.

5.3 The evaluation recommended:

- The rationale for a future programme providing support for R&D projects by suppliers to the oil and gas sector should adequately cover the existence of externalities or spillovers as an important element of the rationale.
- In evaluating the follow-on Competitiveness of the Oil and Gas Supplies Sector Programme (COGSS) a further brief survey should also be undertaken of a sample of OSSCAR and Support for Innovation Programme participants to obtain a more complete picture of the number of products and services and value of their sales generated by the two programmes.
- Programme objectives and performance targets in the ROAME statement for the follow-on programme covering support to R&D by suppliers to the oil and gas industry should be amended (at that time) in response to any significant changes in either the programme budget or other aspects of its coverage or operation
- For future programmes the longer term objectives relating to commercialisation of the project outcomes be linked to achievements four or five years after project completion.

7. ACTION TAKEN AS A RESULT OF EVALUATION

7.1 In drafting the ROAME for the follow-on Competitiveness of the Oil and Gas Supplies Sector Programme comments on the rationale for the Support for Innovation

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Programme were taken into account. The previous procedure of tracking projects for two years after completion has been extended to four years. The recommended further survey of OSSCAR and Support for Innovation Projects will be undertaken as part of the evaluation of the COGSS Programme.

7.2 In considering the report the Energy IPC noted the relevance of work being undertaken by the Oil and Gas Industry Task Force to the arguments for government support for R&D in the oil and gas supply sector. It is therefore proposed that the IPC look again at this area of activity once the work of the Task Force is complete.

OSO Support for Innovation Programme Key Evaluation Information

Heading	Performance Indicator	Explanatory Narrative
Inputs	<p>Key: Total cost and cost to DTI</p> <p>Programme costs 1995/96-1997/98 £8.404 million</p> <p>1995/96 £4.120m 1996/97 £2.600m 1997/98 £1.684m</p> <p>Early stages of the Programme running costs about £200,000 per annum. In latter stages a reduction in staffing has reduced running costs to nearer £100,000 per annum.</p>	
Activities Supported	Principal support was 25%-35% funding of collaborative research projects of direct relevance to the supplies industry to the oil and gas sectors. Other support is for feasibility studies and studies of technology trends in the sector.	
Additionality of activity	12% of respondents to evaluation survey said they would have abandoned the project without DTI funding; 42% said that it would have been carried out in part/scaled down; 33% that it would have been delayed postponed and 24% that it would have been carried out over a longer timescale. None said that it would have been carried out in full.	Evaluation survey questionnaire included questions to programme participants to identify whether there was whole project, scale, or acceleration additionality.
Participants/Beneficiaries	Between 1995/96 and 1997/98 there were 51 new projects. Thirty nine out of 51 projects (76%) over the life of the programme involved SMEs	
"client" satisfaction	On a scale of 1 to 4 the average score for respondents satisfaction with a number of aspects of advice given was 3.24. The average	

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	score for satisfaction with other aspects of the Programme and how it was managed was 3.3.	
Immediate Outputs and Intermediate Outcomes	<p>Over three fifths of respondents had obtained additional financial support for their projects either at the same time or after obtaining OSO support. 14 out of 20 companies said OSO funding very influential and 5 fairly influential in getting this additional support.</p> <p>Of 22 projects completed at the time of the evaluation 10 had already resulted in a product or service and the remainder were expected to lead to a product or service within a year or so.</p> <p>One third of respondents had increased their exposure to oil companies; 18% had increased their skills/knowledge base and 18% had diversified their business.</p>	
Additionality of immediate outputs and intermediate outcomes	Given the extent of additionality of the projects themselves this is likely to be reflected in the level of the additionality of the immediate outputs and intermediate outcomes.	
Business Outcomes	<p>Of 22 completed projects 10 had reached the stage of having a resulting product or service. Seven firms with projects costing around £1m had achieved sales amounting to over £1m, although a large part of this was accounted for by one firm from a large contract.</p> <p>4 levels of business impact indicators:</p> <p>[x] effects on knowledge/skills; [] effects on processes/methods; [] effects on intermediate business outcomes (e.g. reduced down time; won new customers; obtained patent; reduced production costs) [x] effects on core business performance indicators (profitability; turnover; productivity; employment)</p>	
Additionality of business performance outcomes	<p>There was some evidence of displacement. Four respondents (19%) thought that another UK company would have developed the product or service if they had not done so. Unclear however whether such firms would also have required assistance with R&D before they would do so. Nine respondents said that similar products or services to those they were working on were already offered by UK companies and a further three said that there were UK competitors in the process of developing something similar.</p>	Too few projects completed so far or projects completed too recently to adequately assess the additionality of business outcomes.
Wider/economic effects: value for money	At the time of the evaluation it was too soon to determine the value for money achieved since one-third of projects had yet to be completed	

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	and of those that had only ten had been developed to the stage of having a product or service.	
Research evidence	Yes. Evaluation drew on an extensive review of literature on support for R&D undertaken by TESE. Also research undertaken for OSO by SQW was used.	Research on rationales for government support to R&D extensive. More limited research on requirements of the SME supply sector.
Rationale: Types of economic (market failure) rationale assessed by the evaluation	<p><input checked="" type="checkbox"/> externalities/spillovers;</p> <p><input checked="" type="checkbox"/> collaboration/co-ordination failure;</p> <p><input type="checkbox"/> public good/free rider problems;</p> <p><input checked="" type="checkbox"/> lack of awareness/under-estimated benefits (uncertainty);</p> <p><input type="checkbox"/> barriers to entry/access;</p>	Information failure relating to difficulties which SMEs have in identifying technological challenges in the UK Continental Shelf. Assymmetric information resulting in problems for SMEs financing R&D. Evaluation also assessed case for and identified an externalities argument for supporting R&D not contained in the ROAME.
Activity scale: Evidence of appropriateness relative to needs	Expenditure under the Programme is very small compared to expenditure on R&D by the sector as a whole. However, the majority of this is financed from internal sources and there is no need for government support to these projects. If displacement by supported projects is identified expenditure may actually exceed appropriate level.	

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