Evaluation of the Sciencewise Programme 2012-2015

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Executive Summary

Evaluation Objectives

The overall Sciencewise objective for the 2012-2015 programme is:

> *"To improve policy making involving science and technology across Government by increasing the effectiveness with which public dialogue is used, and encouraging its wider use where appropriate."*

In 2013, the programme carried out a "Theory of Change" process involving inputs from the Sciencewise programme team, the Steering Group and Citizens Group. The outcome of this exercise was the development of three interim goals that would support the delivery of its overall objective. The three interim goals are:

1. Effective Advocacy – to create greater acceptability for the place and value of public dialogue (both by decision makers and by public participants),

2. Structural and cultural change – to create the structures and systems needed to support the use of public dialogue (by developing official guidance, incentives, rewards and skills), and

3. Creating evidence – to demonstrate the effectiveness of dialogue processes (by delivering and evaluating projects to provide evidence and learning for policy and decision making).

The focus for this evaluation has been to review the overall activities, achievements and impacts of the current Sciencewise programme, which runs from April 2012 to March 2015, and to draw out lessons and opportunities for the future.

Approach and Methodology

A series of evaluation questions and indicators of success for each of the interim goals identified by Sciencewise in the Theory of Change process were developed to act as the basis for analysis in the evaluation and were presented in a detailed Evaluation Plan agreed between the evaluation team, Sciencewise programme managers and the Evaluation Oversight Group for this evaluation.

A detailed documentation review was conducted in order to gather evidence of progress under each of the indicators and included individual dialogue reports and evaluations, dialogue project case studies, previous programme level evaluation reports from 2010 and 2013 and internal programme reports. The evaluation team approached sixty-three and subsequently interviewed forty-nine individuals during the course of the evaluation. Those interviewed included members of the Sciencewise Programme Board, Steering and Evaluation Oversight Groups and management team, the programme's Dialogue and Engagement Specialists, academics and representatives from NGOs, BIS (the programme's funder), public dialogue contractors/evaluators and staff of commissioning bodies, including wider government stakeholders.

Main findings

Dialogue Projects

Over the 2012-15 period, Sciencewise co-funded and supported the implementation of 27 dialogue projects. This is a significant increase in activity compared to earlier Sciencewise funding cycles (15 projects during 2008-2011 and 7 dialogues pre-2008). Under the current programme, Sciencewise has come close to achieving full expenditure under its projects budget. However, the programme remains the main generator of leads and dialogue projects, with very few commissioning bodies making independent approaches to Sciencewise. Nevertheless the number of commissioning bodies that Sciencewise has supported increased from 11 to 18 under the current programme period, although approximately 70% of Sciencewise project funding has been allocated to projects implemented by two main partners (BIS and Defra) and their various agencies.

During the current period, there has been a shift in the policy timing of dialogues. Out of the dialogues completed so far, five concerned "upstream" policy issues, exploring future scenarios without a currently pending policy decision. The majority (eleven) fitted broadly under an "honest broker" model of engagement, while ten concerned "downstream" issues with scientific topics where policy developments are relatively advanced[1]. This represents a shift from earlier funding periods where there was a higher emphasis on more upstream dialogues.

Information gathered from the interview process and project evaluation reports confirms that a number of different types of impacts have resulted from the public dialogue projects co-funded by Sciencewise. Sciencewise supports public dialogue projects in order to inform policy making, and in all cases the body responsible for the policy area has commissioned the project. Approximately 50% of dialogues analysed under the current programme have influenced the development of new decision-making processes, most commonly through the recognition of how public dialogue or public engagement can help remove policy barriers. Furthermore, 50% of the dialogues resulted in increased knowledge for commissioning bodies regarding the nature of conflicts and potential conflicts and approximately 35% of dialogues appeared to have directly fed into policy decisions. However in these last cases, the public dialogue findings largely agreed with commissioning body or expert viewpoints and it is unclear what impacts may have resulted in the event that there were significant disagreements.

Non-project Activities

Significant work continues to be undertaken by the Sciencewise team to generate and disseminate evidence to promote the value of public dialogue. The programme has produced a wide range of materials around public dialogue, including guidance documents on how to conduct effective and meaningful dialogue which have been made available via the programme's website and handed over directly to interested bodies. The programme has identified a number of events, policy contacts and decision makers and targeted these to further disseminate information and engage those responsible for developing policy.

However, many of those interviewed often found it difficult to use these materials to promote the use of dialogues to their colleagues. Recently, Sciencewise has reacted to this by producing shorter, clearer summaries of the impacts of dialogue and is working with departments to further improve

[1] Based on models developed by Macnaghten and Chilvers (2014): "Upstream" refers to exploration of possible future policies; honest broker dialogue often involves balancing pros and cons of different options; downstream dialogues discuss topics where some policies are already drafted or in place. Some dialogues fit more than one model. The total number of completed dialogues assessed for this model is 20.

how dialogue can sit alongside other forms of evidence used in policymaking. In addition, social intelligence reports produced by Sciencewise are being well received by policymakers seeking rapid insights into public views. Despite this work, the activities of Sciencewise programme still remain little-known outside of a small circle of regular partners according to many of those interviewed during the evaluation, although the fact that the number of commissioning bodies is increasing suggests that this may be changing to a degree.

Embedding Dialogue and Capacity Building

Sciencewise has continued its mentoring of civil servants through contact time with the Dialogue and Engagement Specialists. There is now evidence that some research councils and departments are confident enough to carry out their own dialogue without Sciencewise support, although the expertise provided is valued and considered crucial for complex dialogue activities. Sciencewise has made links with the Open Policy Making team at the Cabinet Office and collaborated on several events and projects. In December 2014, Civil Service Learning formally incorporated public dialogue training material from Sciencewise into their training courses on Open Policy Making.

Building evidence and promotion of effective dialogue processes

Sciencewise has continued to place a heavy emphasis on identifying possible learning from each of the programme's activities. Independent evaluation reports are published for each of the completed dialogue projects, providing details of the dialogues themselves, identification of what worked and what did not and providing information, where available, on outcomes regarding influence on institutional learning and policy. The project evaluations are effective in capturing the impacts on the participants and stakeholders in terms of raising their awareness and forming attitudes and opinions. However, the timing of these evaluations sometimes means that it is too early to observe any direct influence of the outcomes of the dialogue on policy development or institutional learning. Under the 2012-15 programme, projects have been revisited on an annual basis to identify evidence of longer term learning and policy influence, which over time is likely to provide more concrete examples of the full value of public dialogue.

The implementation of public dialogue projects has generated significant amounts of information regarding the process of dialogue as well as the outcomes that have arisen. Sciencewise publishes all evaluation reports and case studies and disseminates these through its website. However, the extent to which these reports and other information on public dialogue (e.g. guidance materials, thought leadership and social intelligence pieces, webinars and blogs etc.) are reaching beyond those individuals from commissioning bodies who have been directly involved in the public dialogues is unclear, with usage statistics and interviews suggesting only limited numbers of visits and accessing of documents.

Key messages

Key messages coming out of the evaluation are as follows.

1. Sciencewise is unique as a co-design model of undertaking policy engagement and embedding it into policy making

2. The programme has delivered both hard and soft impacts on actual policy formation. Providing evidence of the impacts that the programme has achieved remains difficult. However, some clear evidence and good examples of reporting practice have been identified, for example those resulting from the dialogues on mitochondrial replacement and managing radioactive waste safely

3. Sciencewise's funding, expertise and support throughout the entire dialogue process are strong incentives for government departments when deciding whether or not to approach the programme. Sciencewise project co-funding remains a significant enabler for many departments, in particular due to low level of funding for departmental R&D budgets

4. Sciencewise as a programme is exceptionally ambitious (both in the national and international contexts) and is making good, albeit uneven, progress in relation to its objective of embedding dialogue into the business of policymaking. Barriers exist to both structural and cultural change within government departments, but steps have been taken by Sciencewise to help overcome these and there is some evidence of a growing recognition of the value of public dialogue.

Key Recommendations

Recommendation 1 - Sciencewise has a relatively low profile with policymakers (and the public alike), possibly contributing to periodic weak project pipelines and underspend on dialogue budgets. Explore further opportunities for improving "visibility" of Sciencewise with policymakers, including those from potential new commissioning bodies previously unaware of Sciencewise. The cross-departmental events held by Sciencewise in 2014 have been shown to go some way toward this. Further develop communications strategy to promote the programme (whilst ensuring that commissioning bodies' public dialogue work remains in the limelight), including improving the use of on-line and social media tools as part of advocacy and to demonstrate effective dialogue processes.

Recommendation 2 - The programme should explore the use of a greater variety of approaches and methods to further enhance the quality and encourage wider use of dialogue.

Recommendation 3 - A high proportion of funding goes to dialogue projects involving a relatively limited number of commissioning bodies/partners. Consider capping the level of funding for repeat users at a rate lower than the current 50% level, possibly on a sliding scale whilst still providing the required expertise, which itself may be reduced as capacity within those commissioning bodies increases over time. Sciencewise support to upstream dialogue projects has decreased over time, with a higher proportion of projects supported falling under the "honest broker" categorisation of dialogue. Consider introducing differentiated levels of funding for different categories of public dialogue. Downstream dialogue topics are likely to have higher departmental budgets associated with them and therefore may be more likely to support dialogue independently. A higher percentage of funding could be made available for upstream policy issues or for those policy areas considered particularly controversial, complex or difficult to encourage using public dialogue approaches in areas where there is less policy pressure and therefore less of an incentive for departments to make funding available for exploring future policy options and solutions.

Recommendation 4 - Evaluations of dialogues are carried out close to the end of a project when it is often too early to be able to identify the actions taken by commissioning bodies as a result, whether these are policy or learning impacts. It is recommended that individual project evaluations are completed only after the commissioning body has reported on the use of the dialogue findings, as a condition of receiving funding. In terms of identifying longer-term impacts, projects are being followed up on an annual basis to identify new policy impacts arising but there are more limited efforts to identify new learning based on the public views identified in past dialogues. It is suggested that the programme explores how findings of the public views expressed in previous dialogues could be applied to new public dialogue topics. The programme should work directly with the policy profession on how best to present dialogue results to policy makers.

1 Background to the Evaluation

1.1 An introduction to Sciencewise

Sciencewise was established in 2004 and is now the UK's national centre for public dialogue in policy making involving science and technology issues. It aims to improve policy making involving science and technology across Government by increasing the effectiveness with which public dialogue is used and by encouraging its wider use where appropriate. More particularly, Sciencewise provides co-funding to Government departments and agencies to develop and commission public dialogue activities to inform policy decisions involving science and technology. It also undertakes a range of complementary activities which support and promote the wider use of public dialogue in policy making.

Sciencewise is currently nearing the end of its third major funding period (2012–2015). The programme has been jointly managed and governed through a partnership between the British Science Association, Involve and Ricardo-AEA and sponsored by BIS. The overall Sciencewise objective for 2012–2015, agreed with BIS as the basis for funding, is:

> *"To improve policy making involving science and technology across Government by increasing the effectiveness with which public dialogue is used, and encouraging its wider use where appropriate."*

In 2013, the programme carried out a "Theory of Change" process involving inputs from the Sciencewise programme team, the Steering Group and Citizens Group. The outcome of this exercise was the development of three interim goals that would support the delivery of its overall objective. The three interim goals are:

1. Effective Advocacy – to create greater acceptability for the place and value of public dialogue (both by decision makers and by public participants),
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3. Creating evidence – to demonstrate the effectiveness of dialogue processes (by delivering and evaluating projects to provide evidence and learning for policy and decision making).

Evaluation has always been a major element of the Sciencewise programme, and full programme evaluations were undertaken internally in 2010 and in 2012. It was decided that it was timely and appropriate for an independent external evaluation to be undertaken of the activities, achievements, impacts of, and lessons from the current Sciencewise programme.

1.2 Aims of the evaluation

The aim of the evaluation is to review the overall activities, achievements and impacts of the 2012 - 2015 programme and to draw out lessons and opportunities for the future. In addition to the three interim goals, the Theory of Change process[2] identified an aspirational, long-term vision for the programme:

> *"All decision making involving science and technology takes public voices into account, at the right time and in the right way, that is better, more effective and fairer as a result".*

While the above vision serves to guide the future Sciencewise activities, the current programme will not be evaluated against this goal. Instead, it helps to frame the conclusions and recommendations reached in this evaluation.

The evaluation considers the Sciencewise programme as a whole during the period April 2012 – March 2015, covering the context within which Sciencewise operates and the activities carried out over this period.

1.3 Organisation of this evaluation report

The remainder of this report is organised as follows:

- Section 2 provides a description of the policy context within which Sciencewise operates. For comparative purposes, a short discussion of related international bodies is provided
- Section 3 describes the methodology adopted for the evaluation
- Section 4 describes activities undertaken by Sciencewise in order to achieve the interim goal on Effective Advocacy
- Sections 5 and 6 provide similar information and analysis for activities undertaken to achieve programme interim goals on Structural and Cultural Change and Creating Evidence
- Section 7 focuses on programme level issues, and
- Section 8 sets out a summary of findings and presents the conclusions drawn from the previous sections.

[2] Theory of Change report available at: http://www.sciencewise-erc.org.uk/cms/assets/Uploads/Evaluation-docs/Sciencewise-ToC-for-strategic-planning-April-2014.pdf

2 The 2012-2015 programme and context for the evaluation

2.1 A brief history of Sciencewise in the UK

Sciencewise has been in existence for more than ten years. This milestone was marked by the "Best of Sciencewise" report and associated activities[3]. Over this period, Sciencewise has had to respond to changes in political priorities and administrations, to a new set of scientific and technological developments (hence new topics for dialogue) and to innovations in carrying out public dialogue. The growing use of the internet has occurred over the life of Sciencewise (the number of people using the internet on a daily basis doubling from 2006 to 2013[4]) and, as a result, there have been marked changes in the way the public accesses information and services. This has impacted on Sciencewise activities, with a greater emphasis placed on digital engagement activities, particularly towards the end of the last period (such as in the DECC sponsored Energy 2050 dialogue) and during the current funding period. A considerable amount of debate on the use of digital engagement has taken place within Sciencewise and amongst engagement practitioners more generally (e.g. see the Sciencewise-sponsored thought leadership paper, "In the Goldfish Bowl") and this is in part a response to the wider Cabinet Office push toward "digital by default"[5]. This debate is an acknowledgement that there remain significant questions on how digital engagement is best used to inform policymaking.

In addition, the Civil Service Reform Plan has called for change within government over the current Sciencewise funding period of 2012-2015[6]. In particular, the Plan calls for changes in both the efficiency and the transparency of the policy making process. As a practical step, the Plan proposes Open Policy Making as a way of accessing additional expertise (whether that of traditional "experts"[7] or the public's[8]). Digital engagement is recognised as one of the new suite of tools needed for improving policy making capability.

Every few years or so BIS commissions a survey on public attitudes on science (PAS) carried out by IPSOS MORI[9]. The most recent 2014 PAS survey (the fifth survey to date) reports two areas where public attitudes appear to have shifted since 2011. While generic trust in scientists and engineers appears to have increased, regardless of the institutions they work for, the proportion of those who claim they have no option but to trust those governing science has also increased (from 60% to 67%)

3 *"The best of Sciencewise reflections on public dialogue"*. Sciencewise report, Sept 2014. Available at www.sciencewise-erc.org.uk/cms/assets/Uploads/Best-ofFINAL.pdf, accessed 14 January 2015.

4 In Great Britain in 2013, 73% of all adults used the internet on a daily basis in comparison to 35% in 2006. Source: *"Internet Access – Households and Individuals, 2013"*, Office for National Statistics, August 2013, http://www.ons.gov.uk/ons/dcp171778_322713.pdf, accessed 14 January 2015.

5 *"Digital by default proposed for government services".* Cabinet Office press release, 23 November 2010. Available at https://www.gov.uk/government/news/digital-by-default-proposed-for-government-services, accessed 19 January 2015.

6 *"The Civil Reform Plan".* HM Government report, June 2012. Available to http://resources.civilservice.gov.uk/wp-content/uploads/2012/06/Civil-Service-Reform-Plan-acc-final.pdf, accessed 14 January 2015.

7 *"Open policy making: the new default?".* Open Policy Making blog, 8 October 2014. Available at https://openpolicy.blog.gov.uk/2014/10/08/open-policy-new-default/, accessed 19 January 2015.

8 *"Open policy making isn't just about the experts"*. Sciencewise blog, 12 January 2015. Available at https://openpolicy.blog.gov.uk/2015/01/12/roland-jackson-expertise/, accessed 19 January 2015.

9 *"Public attitudes to Science 2014".* Ipsos Mori report, March 2014. Available at https://www.ipsos-mori.com/Assets/Docs/Polls/pas-2014-main-report.pdf, accessed 23 January 2015.

suggesting an "increasingly resigned trust" (page 4). In addition, the percentage strongly agreeing that scientific research directly contributes to UK economic growth has risen (from 23% to 28%), while the percentage strongly disagreeing that government science funding should be cut because the money can be better spent elsewhere has increased (from 23% to 30%). Compared to 1988, when the survey was first carried out, the survey finds that more people now think the benefits of science outweigh the risks (55% agree, versus 45% in 1988); that people are now more comfortable about the pace of change – just a third (34%, versus 49% in 1988) now agree that science makes people's lives change too fast; that fewer now see a conflict between science and faith – just three-in-ten (30%, versus 44% in 1988) now think we depend too much on science and not enough on faith; and that more now agree that it is important to know about science in their daily lives (72% agree, versus 57% in 1988).

The need to acknowledge uncertainty and the breadth of opinion and debate on an issue was set out in the UK Chief Scientific Adviser, Sir Mark Walport's, 2014 Annual Report "Innovation: Managing Risk, not Avoiding it"[10]. Adopting a holistic approach, the various chapters written by experts on risk perceptions and risk governance promoted a number of clear messages: that each decision about the risks and benefits created by applications of new science and technology needs to be considered in the round; that robust decision-making and debate needs to take account of the different ways to achieve the same or a similar goal; and that science is usually one lens amongst several through which we view and debate innovation and risk. As it states: "[d]ebates about risk are also debates about values, ethics and choices; about how benefits and risks are judged; and about fairness, or who benefits and who carries the risk" (page 6).

Calls for a greater commitment to open science and to broader citizen engagement was echoed in BIS's "Our plan for growth: science and innovation" report (2014). The report outlines the joint BIS and HM Treasury long-term science strategy[11] with calls for greater "openness" in science across different traditional science stakeholders – universities, research institutions and business – while also recognising the growing involvement of "citizen scientists". The report acknowledges that the move towards greater openness implies "democratic scrutiny" from the public and that "researchers and innovators must be prepared to engage in discussions with all of those who support their work".

Both the Chief Scientific Adviser's and BIS reports refer to Sciencewise-supported public dialogues as examples of how dialogue can help bring the interface between the public and policymakers closer. Both reports call for greater openness and for increased democratic engagement of the public in helping to steer science. These principles align clearly with those of Sciencewise.

2.1.1 International context

In the international context, the evidence gathered indicates that there are few comparable examples of government-funded programmes that operate within the cross-departmental space that Sciencewise occupies (some further international initiatives are discussed in Annex 2). Furthermore, while some countries may set out guidelines for departments to engage with the public, there seems to be no programme that provides an equivalent pool of expertise and funding, which Government officials can draw upon to conduct their own public dialogues. The Sciencewise programme can therefore be deemed almost unique in terms of its approach and support provided.

[10] "Innovation: managing risk, not avoiding it". Government Office for Science report, November 2014. https://www.gov.uk/government/publications/innovation-managing-risk-not-avoiding-it, accessed 14 January 2015.

[11] "*Our plan for growth: science and innovation".* HM Treasury and Department for Business, Innovation & Skills report, December 2014. Available at https://www.gov.uk/government/publications/our-plan-for-growth-science-and-innovation, accessed 14 January 2015.

2.2 The Sciencewise programme 2012 to 2015

2.2.1 Overview of programme structure

The governance, management and implementation structure of the Sciencewise programme consists of:

- A Programme Board
- A Management Team
- A Steering Group (& Citizens Group)
- Dialogue and Engagement Specialists (DESs), and
- Dialogue "Delivery Teams" (from commissioning bodies and contractors).

The relationships between these different actors are illustrated in the organogram in Figure 2-1 below[12].

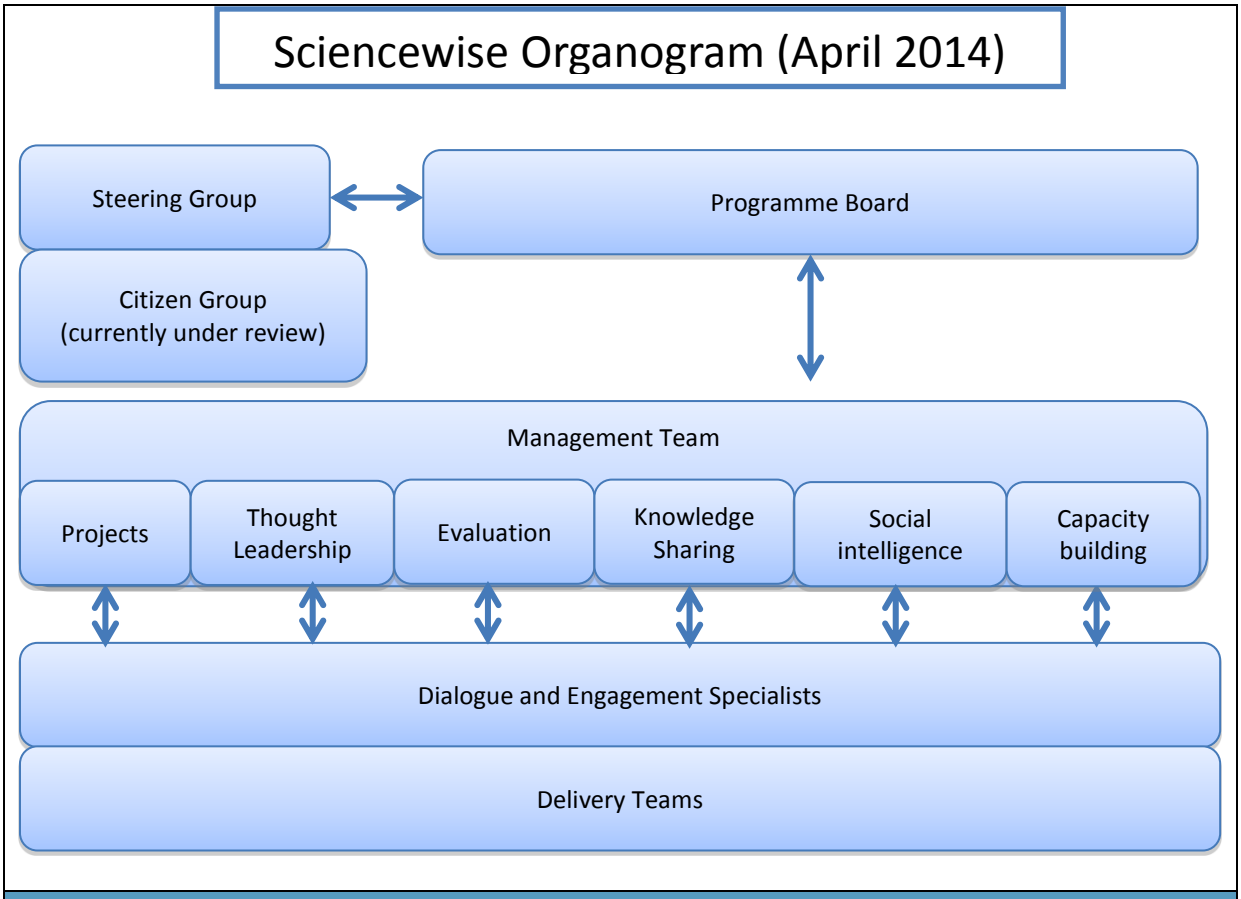

Figure 2-1: Sciencewise Organogram (Warburton, Sciencewise Programme Evaluation 2014 –DRAFT, 2014)

The above structure was introduced in 2012 and was one of several changes brought about in the overall management and governance structure of Sciencewise. These changes included:

[12] As reproduced from the Draft Sciencewise Programme Evaluation Update 2014, July 2014.

- Development of the role of Dialogue and Engagement Specialists (DES) resulting in a reduced and more focused number of individuals in government departments rather than reliance on a broader team
- Withdrawal of the role of Sciencewise Ambassador[13], which had been active in the previous period, and
- Creation of a Citizens Group set-up to feed into governance discussions of Sciencewise's Steering Group.

The following sub-sections explain the role of each of these groups, in order to provide a description of the way Sciencewise organises its activities. This organisational structure is also referred to in Sections 4, 5 and 6 when the roles of the different groups in helping Sciencewise achieve its objectives are discussed.

2.2.2 Programme Board and Management Team

Over the 2012-2015 funding period, the programme board and management team have consisted of:

- Programme Board – 4 members: Executive Chair (formerly Chief Executive of BSA), one from each of Ricardo-AEA and Involve plus BIS as Sciencewise sponsor, and
- Programme Management Team – 6 people, each of whom act as area managers for the different Sciencewise activities.

With the exception of changes in the names of roles, the organisation of both the Programme Board and Management Team have remained largely the same. In 2014, some of the previous positions were removed or replaced, leaving the overall structure unchanged, for example:

- The Social Intelligence Manager replaced communication coordination roles
- The Knowledge Sharing Manager replaced the Public Stakeholder and Business Engagement Manager

2.2.3 Steering Group

The Sciencewise Steering Group has consisted of approximately 11–14 members throughout the 2012–2014 period (not including the Citizens Group, Sciencewise team and BIS representatives). The membership is made up of departmental representatives, academics and BIS (as the sponsor of Sciencewise). In addition, the Steering Group is attended by representatives of the Sciencewise Programme Board. Other invited speakers attend on an ad hoc basis. Very recently, the "balance" of academic and departmental representatives on the group has changed, with additional representatives from government departments and from non-departmental public bodies.

2.2.4 Citizens Group

The Citizens Group was brought in as a 2-year pilot initiative[14] to include the public voice within the governance structure of Sciencewise. This group consisted of 6 members although it was expected to have around 8-10 members originally, with two of these sitting on the Sciencewise Steering

[13] http://www.scienceinparliament.org.uk/wp-content/uploads/2013/09/sip65-4-12.pdf

[14] A summary of the initial scope of the Citizens Group can be found at: http://webarchive.nationalarchives.gov.uk/20130503032104/http://www.sciencewise-erc.org.uk/cms/assets/Uploads/Community-of-Practice/FREQUENTLY-ASKED-QUESTIONS-Citizen-Group-Post-selection-FINAL.pdf, assessed 15 January 2015

Group. The Citizens Group meetings were held immediately prior to the Steering Group meeting to discuss the agenda and papers associated with Steering Group meeting. The two representatives were then expected to feed any comments and viewpoints discussed to the Steering Group. The pilot ran from October 2012 until February 2014, with the originally planned timeframe to continue until October 2014. Following a review process, the Citizens Group was disbanded in the spring of 2014, pending decisions on how to involve Citizens in future governance[15]. Since then the Programme Board and Steering Group have supported the development of a deliberative citizen panel to be convened as opportunities arise to discuss particular science and technology topics.

2.2.5 Sciencewise-ERC Ambassador

Starting in 2008, Sciencewise included an Ambassador position as part of the team. The most visible activity for this role consisted in the creation of a series of YouTube videos in 2008; there is no outwardly obvious activity in the current evaluation period. The role is not mentioned in the 2012 Interim Evaluation of Sciencewise and was removed from the Sciencewise website in the summer of 2014.

2.2.6 Dialogue and Engagement Specialists

The number of DES has reduced from the pre-2012 period, from 17 to 6/7 in the current evaluation period. According to the previous evaluation report (Warburton, 2012), the number had risen to 16 by 2009. The number reduced at the start of the new structure in 2012. After this, the total number of the Sciencewise DES team has been seven and has remained relatively constant thereafter. A further change from the previous period was that the role of DES has changed from the more ad hoc development of projects to becoming "account managers" associated with particular departments, while retaining their project development role.

2.2.7 Brief summary of activities undertaken under each interim goal

As noted in the preceding section, Sciencewise was set up to offer Government departments help in improving the use of public dialogue in policymaking. It offers the following services to assist in this regard:

- One to one advice on public engagement and dialogue
- Advice and guidance on all aspects of best practice in dialogue with the public
- Support to the successful management and delivery of dialogue projects, and
- Mentoring and training to individuals and/or teams to help raise understanding and appreciation of the value and the opportunities for dialogue.

Dialogue projects

The focus of this evaluation is on the activities carried out in the financial years April 2012 through to April 2015. However,some activities from the previous period (2008 to April 2012) are also used to provide a comparison of how Sciencewise operated then as to now. Macnaghten and Chilvers (2014) have proposed three models of public engagement; Upstream, Honest Broker and Issue Advocate for dialogue projects carried out prior to 2012. This evaluation uses a similar approach for the projects carried out in 2012-2015, as discussed below.

[15] See blog by Simon Burall, Head of Dialogue for Sciencewise. Available at http://www.sciencewise-erc.org.uk/blog/?p=2306#more-2306, assessed 23 January 2015.

The first model of dialogue focuses on 'upstream' engagement whereby the objective of the process is to engage with the public in exploratory conversations on a range of issues and questions posed by science and technology at a relatively early stage in the innovation process. In contrast, the 'honest broker' model of dialogue looks at science or technology issues that are more developed and deliberates on the pros and cons of different courses of action. It also attempts to identify the conditions under which different policy options are acceptable. Finally, the 'downstream' model of dialogue seeks to engage with the public on different areas of a policy's implementation and explore how its goals can best be realised.

Based on the typology above, the evaluation has categorised all of the completed projects in the current programme under three separate models. The current period includes 27 dialogue projects and their relative positioning based on these idealised models is described in detail in Annex 3 – Typologies.

The dialogues that were considered to be "upstream" were those where no immediate policy decision, to which the dialogue could feed into directly, was mentioned in the project case study, evaluation or project reports. For example, the horizon scanning project was aimed at identifying technologies that may develop into policy issues in the next 5-10 years and as such no specific policy was already on the table. The discussions therefore centred on the possible ethical and social issues that could arise from future applications of technology.

"Honest broker" dialogues were identified as those that were deliberately aimed at decisions which were pending or exploring solutions for on-going policy issues. For example, there was a clear policy decision pending for the Leap seconds dialogue. This was a topic where only a few people knew about the issue and as such Ministers were unlikely to understand what the public views are on the matter. The dialogue on Leap Seconds was carried out at the request of the Minister, David Willetts, to gain a better understanding in preparation of giving the UK position on the matter.

Dialogue projects were considered to be "downstream" where significant policy decisions were already in place regarding the topics and the focus of the dialogue was to discuss issues regarding policy implementation. For these projects, the understanding of public views could still be used to inform future policy on the same areas or understand how concerns regarding the policy are best explained to the public to ensure understanding. It must also be stressed that, unlike the some of the dialogues in 2011 which were allocated in the "Issue Advocate" model by Macnaghten and Chilvers (2014), these dialogues all have a closer link to the Guiding Principles of Sciencewise. As a result, the downstream nature of their policy areas should not be interpreted as a failing and the impacts resulting from these dialogues are discussed in Section 5.1.

Table 2-1 categorises the completed projects within the current period under the models explained above[16]. There are six projects that are currently not considered in the analysis. This is because these projects are on-going or recently completed and their project reports have not been published. There is a degree of overlap in some of the projects due to a variety of policy areas being covered by the same dialogue. These projects are considered to have elements of the two different models and are therefore counted for both categories[17].

[16] These categorisations have been based on the findings from the literature review and overall consultation are justified further in Annex 3 – Typologies.

[17] Therefore the totals for each category do not equal the total number of actual projects considered in the analysis. However, the relative numbers in each model are comparable.

Table 2-1: Summary of topics of past dialogues and activities supported by Sciencewise-funding						
Year	**1) Upstream**	**Overlap***	**2) Honest Broker**	**Overlap***	**3) Downstream (or 'Issue Advocate' for pre-2011 dialogues)**	**Other project activities or unallocated (not counted in total)**
Sciencewise: 2004-7 (10 projects, 7 dialogues)	**'3'/7**	-	**2/7**	-	**'3'/7**	Communication working lunches, democs card game, nanotechnology engagement group
	nanodialogues, sciencehorizons, community x-change**	-	**hybrid and chimera embryos for research, drugsfutures,**	-	**Risky business, community x-change**, Trustguide (cyber risk)**	
Sciencewise-ERC: 2008-11 (15 dialogues in total)	**'3'/10**	-	**'5'/10**	-	**'4'/10**	LWEC citizens advisory panel, - Ways to wellbeing, Planet under pressure, data openness, science trust and public engagement, Review of RCUK public dialogues
	synthetic biology, industrial biotechnology,**	**Geoengineering**	**animals containing human material, forensic use of DNA, stem cell research, landscapes and ecosystem futures,**	-	**Energy 2050, LCCC, big energy shift, industrial biotechnology****	
Sciencewise: 2012-2015 (20 dialogues considered out of the total 27 dialogues carried out to date)	**'5'/20**	**(1)**	**'11'/20**	**(3)**	**'9'/20**	John Innes Centre, Flood risk Communications, Generic Design Assessment, Marine Scotland, UK food supply challenges, Patient data
	Wellbeing**, Spaceweather, Horizon scanning, Stratified medicine	Nanotech-nologies,	Longitude prize, Mitochondrial replacement, Water Catchment Planning, Patient and public engagement, Leap Seconds, Animal Research, Bioenergy	NEA, SWMIs, Cambrian Mountains,	Wellbeing**, Bovine TB, Shale gas, Rothamsted, MRWS, CCC	
Total up to end of 2014: **49 dialogues (27 in 2012-2015)**. Number and titles of activities based on Sciencewise evaluation report 2011, 2013 and Sciencewise impact reports. Grouping for pre-2011 projects are as used in Macnaghten and Chilvers (2014) and marked in **bold.** *Overlapping projects represent both models and therefore their sum is greater than the total number of projects across the categories. ** Indicates project allocated in both category 1 (Upsteam) and category 3 (Downstream/Issue Advocate) models, these are counted twice in the total.						

Other activities

In addition to the dialogue projects listed above, Sciencewise carries out other programme activities to support its goals. These activities fall into five different areas for funding purposes, with these set out in Table 2-2 below. The activities correspond to a total annual budget of £1.2 million. Each areas of activity is managed by an area manager. In addition to the programme budget, there is a separate allocation for co-funding of dialogue projects of £1.5 million per year.

Some of the more specific actions that fall under these broad areas and not already mentioned include:

- High-level networking
- Blog posts, webinars, training events
- Social intelligence pieces for departments, and
- Thought leadership articles (13 since 2012).

These additional activities are also considered crucial to meeting Sciencewise's operational objectives.

Table 2-2: BIS Programme Management funding by area of activity and financial year

Area of Programme Activity	2012-13 % of Management Budget	2013-14 % of Management Budget	2014-15 % of Management Budget
Implementing Dialogue – projects development, evaluation, oversight and reporting	13%	16%	14%
Thought Leadership and social intelligence	16%	17%	12%
Programme Evaluation	6%	5%	5%
Raising awareness/knowledge sharing	26%	23%	19%
Capacity building – support, guidance and advice to policy makers	34%	34%	42%
Governance and Management	5%	5%	8%

Notes: The above breakdown applies to the total programme management budget of £1.2 million per year. In addition Sciencewise provides £1.5 million per year in project co-funding. The total programme budget is £2.7 million per year. Note that totals from original source add up to 101%, assumed due to rounding.
Source: Steering Group Minutes, February 2013.

The division of the programme management budget appears to have been relatively constant throughout the course of the 2012-15 programme. A slight increase in the capacity building budget can be seen from 34% in 2012-13 to 42% in 2014-15. This increase appears to have been primarily at the expense of Thought Leadership and Social Intelligence (down from 16% to 12%) and Raising Awareness/Knowledge Sharing (down from 26% to 19%). However, consultation with the programme team confirms that this has not been a major shift in emphasis, rather a relatively small variation in activities with an increase in training/supporting commissioning body staff and some reductions in published materials such as thought leadership pieces.

3 Evaluation scope, objectives and approach

3.1 Introduction

As noted in Section 1, the aim of this evaluation is:

> "*To review the overall activities, achievements and impacts of the Sciencewise programme 2012–2015 and to draw out lessons and opportunities for the future*."

The focus of the evaluation is on the activities undertaken by the programme, including:

- the public dialogue projects co-funded by Sciencewise
- the support and guidance Sciencewise provides to improve the quality and effectiveness of the public dialogue projects it co-funds
- Sciencewise activities to raise awareness, build capacity and contribute to the field of public dialogue through publications, events, meetings, evaluation, etc.
- the governance structure within Sciencewise (including Steering Groups; other decision making processes)
- the specific national policy context within which Sciencewise operates, and
- any other related activities.

In order to meet the aims for the evaluation as set out above, the terms of reference for this evaluation identified two specific objectives as follows:

- to gather and present objective and robust evidence of the nature and quality of the impacts, achievements and activities of the programme in order to come to conclusions, and
- to identify lessons from the programme to support future work in this area.

The Invitation to Tender (ITT) document recognised that whilst the evaluation should include some audit elements, the main focus should be on identifying the impacts and lessons from the design, delivery, outputs and outcomes of the programme overall, requiring both quantitative and qualitative analysis.

With the end of the current programme falling in 2015, it is understood that this evaluation will contribute to ongoing discussions around the potential future and subsequent format of BIS support to public dialogue in the science and technology sector.

3.2 Structure of the Evaluation

A high level Evaluation Oversight Group was established in order to safeguard the independence of the evaluation and enable the evaluation team to draw on a wider pool of expertise and knowledge. The full Terms of Reference for the group are attached as an annex and their role was:

- To guide the development and delivery of the evaluation
- To offer advice on key elements of the evaluation research process - such as methodology, sampling and analysis
- To help identify and address potential issues or challenges with the evaluation
- To act as a sounding board for ideas and help test the approach to the evaluation
- To help sustain the quality and robustness at all stages of the evaluation.

The evaluation was structured in accordance with three phases identified in the Invitation to Tender.

1. Detailed planning - early discussions were held between the consultants and the Oversight Group, the Sciencewise Programme Manager and the Sciencewise Evaluation Manager at a Start-Up Meeting. The overall evaluation approach was discussed. Adjustments to the approach were agreed, focusing on a shift in emphasis away from document review, use of social media and a survey type approach towards a greater use of interviews with key stakeholders, designed to gain a greater depth of understanding of the programme's outcomes and the mechanisms by which Sciencewise seeks to achieve its objectives. Following the meeting, a detailed evaluation plan was developed and agreed.

2. Interim review and findings - An interim evaluation report was submitted following review of available documentation and completion of a first set of interviews with stakeholders, including the Sciencewise team and some commissioning bodies. The report included limited analysis and feedback was provided by the Sciencewise team and members of the Evaluation Oversight Group.

3. Final assessment – This final evaluation report includes detailed analysis of the evaluation questions, in accordance with the format agreed between the consultants, Sciencewise team members and the Oversight Group.

3.3 Evaluation Approach and Methodology

3.3.1 Evaluation questions and development of indicators

The evaluation approach and methodology was set out in detail in the Evaluation Plan, and is summarised below.

The approach adopted focuses on the three interim goals of the Sciencewise programme articulated during the Theory of Change development exercise, as described in Section 1 above. The evaluation questions, initially provided in the Invitation to Tender document and then agreed upon in the Start-Up Meeting, have been grouped under the relevant interim goals as appropriate, with additional questions focusing on programme level and cross-cutting issues. Where necessary, evaluation questions have been broken down into a series of linked questions as shown in the analysis for each of the interim goals in Section 1.1. The overarching questions are listed below:

A. What differences / impacts has the programme made on policy and related decisions?
B. How far and by what means has public dialogue improved such policy decisions and policy-making?
C. In what ways has Sciencewise involvement contributed to the improvement of policy development involving science and technology?
D. What does Sciencewise mean to stakeholders inside and outside government? How visible and understood/appreciated is the programme?
E. How familiar are stakeholders with what Sciencewise actually does?
F. Have the benefits of the programme justified the costs and to what extent has the programme added value in the various ways such value can be identified and measured?
G. What are the lessons, opportunities and continuing barriers for effective public dialogue in the future?
H. Does Sciencewise have a future and, if so, what does it look like?

Indicators also have been developed against which programme progress and outcomes are assessed. The final set of key indicators for each of the interim goals is set out in Table 3-1 below.

Table 3-1: Programme Progress and Outcomes Indicators	
Programme Interim Goal	**Indicators**
Effective Advocacy: Creating acceptability for the place and value of public dialogue by decision makers and public participants	Number of departments using Sciencewise including changes over time Range of policy issues including changes over time Grades of those involved including changes over time Appropriate diversity of stakeholders involved (i.e. the right stakeholders at an appropriate level of seniority) Examples where there has been a demonstrable change in policy Timing of involvement (point in policy lifecycle) Evidence of changes in emphasis on public dialogue
Structural and Cultural Change: Creating the structures and systems needed to support the use of public dialogue	Changes to government guidance to require increased dialogue / engagement Diversity of policy areas Diversity in who is involved Changes in Sciencewise's role over time Changes in frequency of requests for help Number of staff trained in public dialogue and engagement Timing of involvement (changes over time in point in policy lifecycle when approached) Changes in who is involved Changes in Departments requesting help
Creating Evidence: Demonstrating effective dialogue processes	Number of times outputs from PD have been referenced or cited in policy documents Approaches to SW for novel types of activities Existence of and number of participants in networks established and/or supported Changes in activities over time Programme management data References to SW activities in other newsletters, blogs, etc. General changes in the level of PD in science policy Hits on SW website, frequency of presentations and other SW events

3.3.2 Describing impacts on participants, experts, policymakers and policy

Public dialogue is a process during which members of the public interact with scientists, stakeholders (for example, research funders, businesses and pressure groups) and policy makers to deliberate on issues relevant to future policy decisions[18].This evaluation has explored the impacts of public dialogue on the policymaking process and how this has been reported by Sciencewise and

[18] From Sciencewise (2013). *The Government's approach to public dialogue on science and technology.* http://www.sciencewise-erc.org.uk/cms/assets/Uploads/Publications/Sciencewise-Guiding-PrinciplesEF12-Nov-13.pdf

others. In order to enable the various impacts to be described, this evaluation has used the TAMI (Technology Assessment; between Methods and Impacts) typology developed by Decker and Ladikas (2004)[19] shown in Table 3-2. A key advantage of this typology is that it helps to frame the potential "soft" impacts that can arise from public dialogue i.e. those which are hard to measure from policy documentation itself such as different forms of policymaker learning.

Table 3-2: TAMI Impact Typology as defined in Decker and Ladikas (2004)

Issue	Impact		
	Raising knowledge	Forming attitudes/opinions	Initialising actions
Technological / Scientific Aspects	**Scientific Assessment** a) Technical options assessed and made visible b) Comprehensive overview on consequences given	**Agenda Setting** f) Setting the agenda in the political debate g) Comprehensive overview on consequences given h) Introducing visions or scenarios	**Reframing of debate** o) New action plan or initiative to further scrutinise the problem decided p) New orientation in policies established
Societal Aspects	**Social mapping** c) Structure of conflicts made transparent	**Mediation** i) Self-reflecting among actors j) Blockade running k) Bridge building	**New decision making processes** q) New ways of governance introduced r) Initiative to intensify public debate taken
Policy Aspects	**Policy analysis** d) Policy objectives explored e) Existing policies assessed	**Re-structuring the policy debate** l) Comprehensiveness in policies increased m) Policies evaluated through debate n) Democratic legitimisation perceived	**Decision taken** s) Policy alternatives filtered t) Innovations implemented u) New legislation is passed

When considering the likely impacts of dialogue activities according to the TAMI typology, it is unlikely that all types of impact will be observed. For example, dialogue is not consultation and the views expressed by the public participants are not sought to gain their support or to make decisions on behalf of Government. Therefore, it is less likely that dialogue activities would lead directly to impacts under the "Decision taken" impact, however it is likely that a "New decision making processes" may be developed as a result or perhaps "Reframing of debate" could occur. The impacts of Sciencewise activities will be further explored throughout the rest of the evaluation using the TAMI typology. These impacts have been drawn from the case studies, dialogue evaluation reports and interviews with commissioning bodies for dialogue projects.

3.3.3 Data collection

A range of data collection methods was adopted throughout the evaluation to gather both quantitative and qualitative information on Sciencewise programme's activities and outcomes. These are described below.

[19] Decker, M. and Ladikas, M. (2004): *Technology Assessment in Europe; between Method and Impact – The TAMI Project*, In: Decker, M., Ladikas, M., Stephan, S. and Wütscher, F., Bridges between Science, Society and Policy, Berlin, Springer.

Attendance at Sciencewise meetings

To understand the governance structure and activity base of Sciencewise, RPA attended meetings with the Sciencewise team at various levels of project administration and activity. These included meetings to discuss the development of upcoming or potential PD projects and project partners, Steering Group meetings and webinars held after the conclusions of PD workshops[20].

Literature Review

With the assistance of the Sciencewise team, coupled with searches on the Sciencewise website, key documents on programme activities and outcomes were sourced. These documents were reviewed to help identify key topics for discussion with interviewees with stakeholders. The topics were then incorporated into interview protocols for each of the stakeholder groups. A detailed list of documents reviewed is provided in Annex 1.

Whilst the evaluation was required to focus on the Sciencewise programme as a whole, research included a brief review of individual dialogue projects carried out during the period 2012-2015. This sub-set of dialogue projects also provided the focus for the selection of the interviewees approached from government departments and other commissioning bodies.

Interviews

A range of interviewees was identified, covering four main groups as follows:

- Those involved with the delivery of the Sciencewise programme (Sciencewise team, contractors, Programme Board members, including BIS)
- Recipients of Sciencewise's services (government departments, other commissioning bodies)
- Those with oversight responsibilities (Steering Group members, Evaluation Oversight Group members, project oversight group members, Citizens Group), and
- Other stakeholders with an interest in Sciencewise (academics, NGOs).

The different types of people approached and interviewed are set out in Table 3-3 below. With respect to the interview findings, it is important to note that a significant percentage of those interviewed are either part of the Sciencewise team or are DES contracted by Sciencewise.

Table 3-3: Breakdown of Interviews

Category of interviewees	Approached	Interviewed by role
Dialogue and Engagement Specialists	7	7
Sciencewise team members	13	11
BIS	3	3
Ex Sciencewise team member	1	1
Citizens Group	2	1 (1 also gave email comments)
Sciencewise Steering Group	6	4
Sciencewise Oversight Group	2	2
Public dialogue commissioning bodies (users & non users)	26	20
NGO/academics/stakeholders	9	5
Contractors/evaluators	4	3
Wider government stakeholders	3	3
Totals	**76**	**60**

[20] Dialogue & Engagement Specialists; 16 October 2014; Steering Group meeting, 30 October 2014; PD project Webinars: 15 October, 5 November, 19 November 2014.

Commissioning body staff represented 33% of all those interviewed by role and were the largest group interviewed, followed by Sciencewise team members (18%) and DES's (12%).

Interviews in general lasted between 60-90 minutes, with a few exceptions. Interviews were conducted either face-to-face (circa 20%) or by telephone (circa 80%). Interviewees not directly linked to Sciencewise (i.e. commissioning bodies, academics, etc.) tended to express a preference for telephone based interview. It is noted that some of the interviewees appear in more than one category, so the number of individual people interviewed by role was 59, the actual number of individuals interviewed was 49.

Individual interview protocols were developed for each of the main stakeholder groups. Interview questions were linked to the overall evaluation questions, as they applied to each of the groups, to ensure that all the key evaluation questions were covered as well as to ensure consistency of approach and to facilitate analysis. A number of questions appeared in multiple protocols, thereby ensuring that different perspectives on key issues were gathered across the stakeholder groups. Interviewees were provided with a list of topic areas to be covered in advance of the interviews to assist them in preparing themselves; they were not provided with the detailed questions in order to facilitate a more open discussion of the issues to be covered. The questions asked in relation to each of the interim goals are set out in Sections 4 to 6, and are not also presented here for the sake of brevity.

The interviewees were informed that their interview notes would be kept confidential and that anything used would be anonymised, unless they gave explicit permission to identify their affiliation. After the interview, the interviewees were provided with notes summarising the conversation and given the opportunity to correct misunderstandings and to clarify any points. The amended and agreed notes were then used as the basis for the evaluation.

3.3.4 Data Analysis

The data analysis focuses on activities undertaken by Sciencewise, segmented under the three interim goals respectively. Sections 4 to 6 identifies activities undertaken for each interim goal and analyses them in terms of quantity (how many?), quality (how well?) and timing in relation to stated outcomes and objectives.

The indicators set out in Table 3-1 above provide measures against which Sciencewise's programme activities have been assessed for each of the three interim goals. As noted above, documents provided by the programme team, along with those identified through Sciencewise's and departmental websites (and more generally), were reviewed and relevant quantitative and qualitative information was extracted.

This analysis was supplemented with detailed information gathered from interviewees, where responses were grouped together under emerging themes to identify views across and within different stakeholder groups. Responses were also cross checked for consistency with information obtained from the various documents examined during the literature review. Sections 4 to 6 of this report provide the analysis for each of the three interim goals, identifying the source of information from which conclusions are developed and explaining the basis for any interpretations made.

3.4 Limitations

3.4.1 Introduction

The Sciencewise programme involves a range of partner organisations from the public, private and non-profit sectors in promoting and utilising public dialogue approaches in order to incorporate public voice into policy-making. As such, it is a complex entity, incorporating both advocacy and capacity building objectives utilising a range of interrelated activities.

Within the context of such a programme, perspectives on the degree to which the 2012-2015 Sciencewise programme has been effective in promoting the use and improving the quality of public dialogue in policy making, as well as the impacts of the dialogues themselves on final policies and the quality and effectiveness of those policies, are likely to vary across different organisations and individuals. Similarly, perspectives regarding the best approach to take and the activities most likely to achieve the programme's objectives are also likely to differ. Consequently, a significant element of the evaluation methodology involved extensive consultation with those directly and indirectly involved with the programme and an emphasis on conducting interviews as opposed to more detailed documentation review was stressed at the evaluation start-up meeting.

3.4.2 Numbers interviewed

The evaluation team sought to identify individuals across a broad spectrum of those that have been involved with the various different Sciencewise activities and public dialogues. However, the number of interviews carried out was restricted by the budget allocation for the evaluation (set at a maximum of £30,000 + VAT in the published specifications) and sixty-three individuals were approached for an interview during the course of the evaluation. Unfortunately, of these 63 approached, fourteen were not interviewed for a variety of reasons, further limiting the number of people interviewed. The reasons for these 14 interviews not taking place are set out in Table 3-4 below.

Table 3-4: Reasons for interviews not taking place

Reason for no interview taking place	Number of individuals
No response	7
Not available/scheduling issue	1
Suggested someone else or felt they could not add anything	4
Provided information by email instead	2
Total	**14**

In relation to the 14 individuals included above, seven of those approached but who did not take part in an interview were from the PD commissioning bodies category, five from NGOs/academics/stakeholders, one from the citizens group, two from the Sciencewise Steering Group and one from the Sciencewise Management Team/Programme Board. It is noted that this totals 16 and this is explained by the fact that some people fulfil multiple roles and appear in more than one category of interviewee.

However, representatives of each of the main categories of organisations and individuals involved around the Sciencewise programme have been interviewed and a broad cross-section of views and opinions has been gathered and analysed throughout the evaluation.

3.4.3 Categories of people interviewed

An obvious limitation imposed by the size of the evaluation budget and agreed at the Start-up meeting was the absence of any consultation with public participants of dialogues. As a result, the perspective of public participants on the effectiveness of the dialogues funded by Sciencewise and the overall Sciencewise approach has been limited to information documented in evaluations of different public dialogues and previous evaluations of the programme.

It is also noted that on the commissioning body side, those interviewed tended to be those who have been directly involved in designing and implementing public dialogue projects as opposed to those with overall responsibility for policies and policy making. This has meant that a lot of the analysis has been based on those involved with the implementation of public dialogue projects as opposed to those within commissioning bodies making decisions on overall commitments to public dialogue being used in policy-making. However, in a number of non-departmental commissioning bodies, those responsible for taking decisions on the involvement of public dialogue in policy making were actually involved directly in the implementation of dialogues and these people were interviewed as part of the evaluation.

A further category of stakeholder where it proved difficult to identify people to interview was in terms of those public departments and bodies involved in science and technology that have not engaged with Sciencewise. Consequently, there is a lack of detailed information on the reasons why particular bodies choose not to work with Sciencewise on public dialogue, whether or not they have engaged in public dialogue activities on their own or adopted alternative methods for engaging with the public, or whether in fact they choose not to use public dialogue or engage with the public at all within a particular policy making situation.

3.4.4 Method of interview

80% of the interviews were held by telephone, with the majority of face-to-face interviews being held with Sciencewise management team/Programme Board members. Whilst in some cases, direct face-to-face contact may have led to more open responses, in others the opposite may have been true where the relative anonymity of talking by telephone may have enabled people to talk more freely regarding their opinions of the Sciencewise programme and its impacts. The evaluation team did not feel there was any significant difference in the responses received using the two different approaches and in many cases the interviewees themselves requested to have a telephone discussion as opposed to a direct face-to-face meeting.

4 Interim Goal 1: Effective Advocacy – To Create greater acceptability for the place and value of public dialogue (both by decision makers and public participants)

4.1 Introduction

This interim goal is built on the premise that "there is a continued lack of understanding and acceptance within public bodies on the value of including public voices in decision-making"[21]. A survey carried out as part of Sciencewise's own internal evaluation[22], covering approximately 6 months of the current programme to November 2012, found that 81% of survey respondents[23] felt they knew little or nothing about public dialogue, with 60% being of the view that this applied across government as a whole. Similarly, the evaluation report concluded that the extent to which public bodies had mainstreamed public dialogue was limited and that significant challenges remained.

A range of activities have been carried out during the 2012–2015 programme in support of this interim goal and are identified in Section 4.2 below. Section 4.3 then goes on to assess the effectiveness of these activities as measured by the various indicators set out in Table 3-1 in Section 3.3.1 above, drawing on documentary evidence provided by the evaluation team, as well as responses provided by the stakeholder interviews.

4.2 Activities undertaken by the Sciencewise programme in support of Effective Advocacy

Of the range of activities carried out by Sciencewise, many are designed to contribute to the programme's objectives of supporting effective advocacy. The activities essentially fall into three main areas:

- Using Sciencewise–funded dialogue projects and their evaluations to demonstrate the practical benefits of public dialogue as well as the benefits and effective use of its outputs
- Production of materials to provide information on public dialogue more generally as well as on specific areas and projects, designed to engage readers, to increase interest and to disseminate knowledge on how to conduct dialogue effectively, and
- Networking/participation in various fora to gain access to policy makers, and to those involved in engaging with the public, to foster relationships and to promote both public dialogue and the Sciencewise programme itself.

Brief descriptions and specific examples of these types of activities carried out by Sciencewise during the period under consideration are presented in Table 4-1 below.

[21] Sciencewise "Theory of Change 2014-2015" p.7
[22] Sciencewise - Interim Evaluation 2012, published March 2013
[23] Survey circulated to the Government Science and Engineering (GSE) network

Table 4-1: Activities undertaken to support Effective Advocacy	
Activity area	**Examples**
Making use of evidence generated from dialogue projects supported by Sciencewise to promote the use of dialogue in policy making.	Independent evaluation of all projects funded by Sciencewise (minimum of 10% of project budgets allocated to this) Publication of all dialogue evaluation reports along with project case studies on the programme's website Annual follow-up on impacts of all projects funded under the current programme C Convening "wash up" meetings with project partners Briefing provided to commissioning body's dialogue project team on lessons learned from evaluations of previous projects Providing observer places at public dialogue events Briefings for government departments using information from evaluations (e.g. for Defra on the costs and benefits of public dialogue, March 2014; for the Open Policy Making team at the Cabinet Office on the Theory of Change approach and indicators for measuring impacts)
Engagement with Parliamentary Committees	Providing written evidence to the Public Administration Select Committee inquiry on Public Engagement in Policy Making and the House of Lords Secondary Legislation Scrutiny Committee on consultations.
Publication of "thought leadership" papers[24] and blog articles	Topics covered included: "FAQs about public dialogue" "Which Publics?" "In the Goldfish Bowl" "Experts, publics and open policy making" "The best of Sciencewise reflections on public dialogue" "Dialogue for governance and regulation: Engaging citizens in the long-term" "Revisiting Past Participants" "Changing hats"
Social Intelligence,	10 Social Intelligence briefing papers covering: "Public Views on Advanced Materials - nanomaterials and grapheme" (2013) "Robotics and Autonomous Systems: what the public thinks" (2013) "Public views on Open Data" (2013) "Public Views on Synthetic Biology" (2013) "Public Views on Energy infrastructure" (2013) "Public views on the commercial application of space" (2013) "Public views on energy storage" (2014) "Public attitudes to quantum technology" (2014) "Big Data" (2014) "Public views on regenerative medicine" (2014) Blogs on the use of Social Intelligence papers are published on the BSA website.

[24] It is noted that other strategic research and papers relating to good dialogue practice, whilst developed and published in 2009 i.e. before the current programme, are still available on the Sciencewise website and have been accessed a number of times. These include: Departmental Dialogue Index, report and tool; Evidence Counts; The Use of Experts in Dialogue; International Comparison of public dialogue, IZWE; Widening public involvement in dialogue; Review of RCUK dialogues; Consultation and Communication; Enabling and Sustaining Citizen Involvement; Future Directions for Scientific Advice.

Table 4-1: Activities undertaken to support Effective Advocacy	
Activity area	**Examples**
Sciencewise blog, Twitter, Yammer and Facebook	Sciencewise also has Twitter and Facebook accounts which are used to publicise reports, publications and Sciencewise work.
Publication of monthly digests	A monthly digest, designed for policymakers, is circulated to a range of interested parties (including 136 past public participants as of June 2014)
High-level networking	Programme Board members were charged with the task of spreading the understanding and awareness of Sciencewise and the support it can provide.
Sciencewise events	The programme has run a number of events promoting public dialogue, including among others: “Open Policy Making and public dialogue event” (February 2014) “National Science and Engineering Week at BIS” (March 2013) “Event at BIS exploring changing landscape of open policy making” (September 2013 “Public Dialogue in policy - experts, publics and open policy”, House of Lords event (January 2013) “Low Carbon Workshop, Scotland” (2014)
Participation in various science and technology related events	Examples include: Science Communication Conference (May 2013) GSE Annual Conferences (February 2013 and March 2014) British Science Festival (September 2012 and 2013) Cheltenham Science Festival (June 2013) Civil Service Live (2012, 2013 and 2014) Institute of Technology Assessment Forum on Citizen Partnership, Berlin (2013)
Webinars	Various webinars have been hosted by Sciencewise including: Space weather webinar (21 January 2015) Public communication and engagement on risk (19 November 2014) Embedding wellbeing in decision-making webinar (15 October 2014) Launch of Sciencewise's publication "In the Goldfish bowl: science and technology policy dialogues in the digital world" Discussion of Sciencewise's publication "Which Publics? When?" Webinars to look at Sciencewise is Social Intelligence gathering on innovations in energy infrastructure and storage Open Data and Dialogue and the connections between public dialogue and transparency Making Responsive Research Matter
Sciencewise Website	Publicly available website providing information on the programme and public dialogue projects funded by Sciencewise, various publications, guidance, thought pieces etc. Detailed above
Community of Practice	The “Community of Practice” was set-up in 2013 to build relationships between policymakers and share information regarding dialogue. The “generic events” were stopped for 2014/15 favour of more targeted webinars and events.
Sources: Sciencewise - Interim Evaluation 2012, published March 2013; Sciencewise Impacts Evidence 2012-2014, published June 2014; Sciencewise Evaluation Update 2014 (Draft); Steering Group Minutes Consultation with Sciencewise team.	

4.3 Identified outcomes and impacts

4.3.1 Approach

Five success criteria and metrics to be used to measure the success of the programme as a whole were agreed by the Sciencewise Steering Group in July 2012[25] as follows:

- Positive influence of public dialogue on government policy and policy making
- Increased quantity and quality of public dialogue projects
- Increased willingness and ability of public policy bodies to undertake public dialogue (embedding)
- Increased awareness and understanding of public dialogue by public policy bodies and other stakeholders, and
- Increased recognition of the value of Sciencewise from key stakeholders.

The Evaluation Plan developed in the first phase of this evaluation referred to these metrics to develop a set of indicators to be used in the assessment of this interim goal and the extent to which it is being achieved by the programme. These appeared in Table 3-1 and are repeated below for ease of reference. A literature review of all documents identified during the evaluation was carried out in order to identify information relating to the indicators described above.

Table 4-2: Indicators for Effective Advocacy
Number of departments using Sciencewise and change over time
Range of policy issues and change over time
Grades of those involved and change over time
Appropriate Diversity of stakeholders involved (i.e. the right stakeholders at an appropriate level of seniority)
Examples where there has been a demonstrable change in policy
Timing of involvement (point in policy lifecycle)
Evidence of changes in emphasis on public dialogue

The series of questions developed during the first phase of the study to obtain information and perceptions of interviewees around the extent to which public dialogue has become accepted and valued within government departments and other commissioning bodies are provided in Table 4-3 below.

Table 4-3: Evaluation questions relating to Effective Advocacy discussed during interviews
What are the barriers to the implementation of dialogue in policy making? How have the activities of Sciencewise helped overcome these barriers?
Who has asked for Sciencewise's help (and by default, who has not and why)? Are these the right departments and are the participants the right ones?
Why did Departments approach Sciencewise for help? What was Sciencewise's remit? How did they use the outputs of Sciencewise's involvement?
At what point in the policy cycle did they approach Sciencewise?
Were the right stakeholders involved and with the appropriate capacity in the public dialogue activities?

[25] Sciencewise - Interim Evaluation 2012, published March 2013, p.4

Table 4-3: Evaluation questions relating to Effective Advocacy discussed during interviews
How have perceptions in Government changed about the value of taking public views into account when making decisions and the extent to which this happens?
What lessons can be drawn in terms of what the dialogue was intended to achieve? Are there policy areas or types of dialogue where Sciencewise is most effective?
How do Departments deal with a dialogue that produces findings that do not align with current policy (where the dialogue is being specifically used to review or amend a policy) or a policy that is in the process of development?

Where evaluation questions are covered by an individual indicator, the analysis of the individual evaluation question appears under the appropriate sub-section below. The remaining evaluation questions relating to the Effective Advocacy interim goal are then grouped together and analysed in Section 4.3.9.

4.3.2 Indicator: Number of departments using Sciencewise and change over time

This indicator relates to the evaluation question:

- Who has asked for Sciencewise's help (and by default, who has not and why)? Are these the right departments and are the participants the right ones?"

The number of departments and numbers of dialogue projects supported within them by Sciencewise have direct relevance to all of the first three programme success measures identified above (positive influence of public dialogue on government policy and policy making, increased quantity and quality of public dialogue projects, increased willingness and ability of public policy bodies to undertake public dialogue, i.e. embedding). It is also likely that Sciencewise's coverage, in terms of the numbers of projects and commissioning bodies it works with, is also a measure of the level of recognition of the value of the programme, as well as a measure of awareness and understanding of public dialogue by public policy bodies and other stakeholders. These are all likely to increase as increased numbers of dialogue projects are undertaken. An internal report[26] setting out measures designed to support the effective advocacy interim goal highlights the following as being new to the 2012-2015 programme and as likely to increase the number of leads for new public dialogue projects:

- High-level networking
- Policy analysis
- The creation of the Account Managers – focused on eight departments, four that have been significant users of Sciencewise and four with fewer projects
- The Workshop at CSaP, which considered ~60 opportunities and later refined these to 30, and
- The adoption of a cross-cutting approach (in 2014/2015). This was introduced in the May 2014 Steering Group meeting to facilitate Sciencewise into a convening role between departments on certain technological issues.

In addition to increasing the overall number of dialogue projects supported by Sciencewise, and their spread across commissioning bodies, the measures were also aimed at developing relationships

[26] Review – projects development - July 2014

with new departments. The internal review report indicates that the results were variable. Whilst more leads were identified in 2012-2013 (43) than in the previous year (38), this increase was marginal. Fewer leads were identified in 2013–2014 (20) and 2014–2015 (5 by July 2014). In part, this reduction may to be due to the fact that the number of leads identified was viewed as sufficient to account for the available budget.

The internal report also notes the significant time that has resulted between the identification of initial leads and their conversion into actual projects. The mean length of time required to develop a project from first contact to approval is reported to have been around 11 months with an upper limit of 31 months. When project implementation and reporting requirements are included, the mean time is 25 months, with the maximum extending to 47 months. The time from dialogue approval to the publication of the dialogue report was 13 months on average, with the maximum time extending to 32 months.

The report also highlights the likelihood that there may be no major projects arising from any contacts established after September 2014, primarily due to the fact that there can be a significant time lag between identifying a contact and developing a dialogue project through to approval and implementation and because future funding for the programme beyond March 2015 was not yet approved and so the programme was not seeking further projects into the 2015/2016 tax year.

Notwithstanding the considerable time lags that continue to take place between initial leads and their conversion into actual projects, the number of dialogues carried out in the 2012–2015 period is far greater than the number of dialogues in the past, as discussed further below.

Number and status of dialogue projects

Prior to 2008, seven dialogues had been carried out with Sciencewise funding. Between 2008–2011, 15 completed dialogue projects were undertaken. In contrast, so far for the 2012–2015 period, there have been 27 active projects across 18 different commissioning bodies.

There are currently[27] 28 projects that fall within the remit of this study (i.e. those that have been completed, stopped or are still on-going during the period 2012–15). More recently, there have been further projects approved that will carry on into 2015/2016 but these have not been considered in the analysis below. Table 4-4 provides a list of the relevant projects by status, partners/commissioning body and budget size. Projects have been grouped together based on the commissioning body/main partners involved.

[27] 9 December 2014, including 1 cancelled project

Table 4-4: Sciencewise dialogues completed, stopped or on-going in 2012-2015				
Commissioning Bodies	**Project**	**Sciencewise Allocation/£**	**Sciencewise % of budget**	**Status***
Defra	Nanotechnologies	42,700	50.0	On-going
Defra	Citizen dialogue on bovine TB	185,000	56.7	Completed 2014
NERC	National Ecosystem Assessment	318,000	12.6**	On-going
Natural England	Nature Improvement Areas	240,000	42.3	On-going
Environment Agency (EA)	Flood risk communications	140,000	50.0	On-going
Environment Agency (EA)	General design assessment	56,000	49.6	On-going
Environment Agency (EA)	Significant water management issues	100,000	50.0	Completed 2014
Environment Agency (EA), NERC and Defra	Water quality and sustainability	239,000	11.1	Completed 2013
BBSRC	Bioenergy distributed dialogue	56,800	62.2	Completed 2014
BBSRC/ John Innes Centre	John Innes Centre Science Strategy	50,000	50.0	On-going
BBSRC/Rothamsted Institute	Rothamsted	51,000	55.4	Completed 2014
HRA	Patient data	66,700	50.4	On-going
HRA	Patient and public engagement	80,800	53.3	Completed 2013
DECC	Shale Gas	50,000	40.9	Completed 2014
DECC	MRWS Sitting	167,000	38.0	Completed 2014
BIS	Horizon Scanning	50,000	100	Completed 2014
BIS and Nesta	Longitude Prize	49,000	31.1	Completed 2014
Committee on Climate Change	Trajectories for carbon emission reductions	21,700	49.9	Completed 2014
National Measurement Office	Leap seconds	84,000	47.8	On-going
Marine Scotland Directorate	Marine Scotland – Marine Planning and Policy Joint Consultation	158,000	35.7	On-going
STFC	Space weather	120,000	55.0	On-going
Cabinet Office	Embedding wellbeing science in decision making	223,000	76.6	On-going
Government Office for Science	UK Food Supply Challenges	42,000	58.3	On-going
HFEA	Mitochondria replacement	72,000	32.7	Completed 2013
Countryside council for Wales	Cambrian mountains – landscape and ecosystems	21,000	46.1	Completed 2013

Table 4-4: Sciencewise dialogues completed, stopped or on-going in 2012-2015				
Commissioning Bodies	**Project**	**Sciencewise Allocation/£**	**Sciencewise % of budget**	**Status***
Medical Research Council	Openness in Animal Research Dialogue	36,000	52.9	Completed 2014
Technology Strategy Board (now Innovate UK)	Stratified medicine	108,000	52.2	Completed 2014
[Confidential]	*[Confidential]*	58,000	50.0	Stopped
** "On-going" include projects where: the public dialogue has finished but the evaluation report is yet to be published; the public dialogue process is still on-going; the public dialogue is about to begin or the project has been commissioned and the invitation to tender (ITT) has only just been sent out.* *** The budget quoted is the percentage that Sciencewise funding represents for the whole NEA programme but not the percentage contribution to the dialogue element which had a much lower budget.*				

Projects pipeline and Sciencewise' funding contribution to dialogue projects

The previous table shows that nine projects had a total budget £100,000 or less while six projects had a budget of more than £250,000 and that the smallest contribution from Sciencewise was £21,000 for the Cambrian mountains - landscape and ecosystems project, with the largest contribution being the £318,000 made to the National Ecosystem Assessment project. Hence, there is a wide variation in total budgets and contributions from Sciencewise.

The average contribution of the Sciencewise programme project is 49.5%. This is the average rate of contribution across all the individual projects (i.e. it is the average of the figures in the "Sciencewise % of budget" column in Table 4-4 above) but excludes the Horizon scanning project that was solely funded by the Sciencewise programme, as well as the National Ecosystem Assessment project (where the 12.6 % contribution figure represents the Sciencewise contribution to the overall project and not just the public dialogue element), and the Water Quality and Sustainability project (where the 11.1% contribution is also likely to be a contribution to the overall project and not just the public dialogue element). This average level of funding, and indeed the actual level of funding given to the majority of projects, is very close to the maximum contribution that should be made available from Sciencewise (50%). Again excluding the three outlying projects in the table above, 20 out of 25 projects received Sciencewise allocations of between 40% and 60% of the project budget.

The fact that the vast majority of dialogue projects are funded at or almost at the maximum 50% Sciencewise contribution confirms the importance of the programme as a funding stream for public dialogue. The following examples from interviews have confirmed this

"The team was familiar with SW from previous experience and it seemed like a good fit. The availability of co-funding made it a stronger case." (Commissioning body)

"The programme looked like a useful funding stream for the types of work ….. were doing at the time" (Commissioning body)

"The funding is definitely a factor." (Commissioning body)

Clearly, funding from Sciencewise is an important part of the programme for commissioning bodies. The fact that so many projects received funding very close to the maximum percentage contribution from Sciencewise may suggest that public dialogue activities are sometimes being designed around the availability of Sciencewise funding as opposed to the public dialogue needs of a particular policy. This was not a question pursued during the interviews but may be an area the programme could usefully explore at a later date to investigate whether the maximum funding level is restricting the

scope and nature of dialogue projects. If this were to be the case, it may also be a limiting factor on the number of public dialogues being put forward to Sciencewise.

Notwithstanding the above, it is noticeable that during the 2008–2011 period, five projects were funded that received more than 70% of their overall funding from Sciencewise and two of these received 100%. These five projects represent a third of all the projects completed during this period, and is a significantly higher proportion of projects than in the period 2012–2015 where the proportion of projects receiving more than 70% of funding was only 7% (2 out of 28 projects). Agreeing funding contributions in grant programmes in excess of guideline maximum amounts can sometimes be an indicator of a weak pipeline of projects, and underspends under previous as well as the current programme does indicate that there have been issues in terms of allocating all of the project funding. However, the programme team has indicated that Sciencewise contributions to dialogue projects were not increased above the 50% level for this reason and that higher allocations were made on the basis of justifications made by the commissioning bodies. In any event, there has been a significant decrease in the number of projects receiving funding contribution from Sciencewise in excess of 50%.

It is important to note that the projects pipeline has improved under the current programme and evidence to back this up is documented in the P02 Project Development paper submitted to the Steering Group for the October 2013 SG Meeting[28]. This paper indicates that requests for funding were exceeding the funds available and suggested a range of strategies to deal with this, including maintaining the strict allocation of a maximum of 50% financing from Sciencewise, as well as reducing this figure for repeat funding requests from the same department/agency.

This latter strategy in particular could be more than just a way to manage excessive demand for funding support; it could also represent part of what could become a phased exit strategy for Sciencewise. It may encourage those commissioning bodies which have experienced the value of public dialogue projects, and have potentially increased their own capacity to deliver them, to allocate increasing amounts of their own funding to the implementation of dialogue projects. The example of the DECC commissioned project on Shale Gas provided in the Project Development paper, where DECC allocated a further £20,000 of its own funds to the project when the Sciencewise contribution was capped at £50,000, is a clear indication that such a strategy can work. Such an approach would not necessarily have to exclude funding particularly innovative projects at a higher level. In addition, it is recognised that it is often more difficult to fund public dialogue around upstream issues where it is more difficult to identify a clear policy hook, and any strategy could be adapted to provide alternative funding levels to encourage commissioning bodies to identify this type of project.

It is noted that by the time of the October 2014 Steering Group meeting, the situation described above (regarding the number of potential projects exceeding the available funding) appeared to have changed, as potential leads had not been turned into concrete proposals which met Sciencewise's funding criteria. A paper submitted to the meeting (SW SG October 2014 Supporting Information, Financial Summary Information) indicated that £1,183,000 of the £1.5 million budget for April 2014 to March 2015 had been allocated and that there was only a very small probability of further projects being approved and incurring spending in 2014/2015. Even assuming there is a 100% spend against the forecast amount to March 2015 on existing projects, this represents an overall underspend in the year of 21%.

[28] http://www.sciencewise-erc.org.uk/cms/assets/Uploads/Meetings/SW-SG-October-2013-P02-Projects.pdf

Allocation of funding by commissioning body

It is clear from Table 4-4 that some commissioning bodies have worked with Sciencewise on a significant number of projects. Table 4-5 below expands on Table 4-4 and provides a summary of the allocation of Sciencewise funds by commissioning body for the periods from 2008–2011 and 2012–2015. It is noted that the amounts indicated represent allocations over the life of the projects, some of which may have been initiated under the previous programme.

Table 4-5: Allocations by commissioning body for projects active during 2008-2011 and 2012-2015

Commissioning Body	Sciencewise allocation/£	% of total
2008 to 2011		
DECC (3 projects)	712,100	33
DOH (2 projects)	261,250	12
BIS (2 projects)	386,000	18
Others with single projects (8 bodies/projects)	810,422	37
Total (15 projects)	2,169,772	100
2012 to 2015		
Defra + EA (7 projects)*	738,700	26
BBSRC (3 projects)**	157,800	6
Commissioning bodies with 2 projects (DECC, BIS, HRA)***	463,500	16
Others with single projects **** (12 bodies/projects)	1,467,700	52
Total (28 projects)	2,827,700	100%

*Includes 2 projects that Defra commissioned alone, 3 commissioned by EA alone and one project jointly commissioned by Defra, EA and NERC but does not include NERC's budget allocation of £24,000, which is included in the allocation for "Others with single projects"
**1 BBSRC project commissioned with John Innes Centre and 1 with the Rothampsted Institute
***1 BIS project commissioned with Nesta,
****Includes one project commissioned by NERC involving Defra and Welsh Government as partners, and one project commissioned by Natural England with Defra and EA as partners
It is noted that the cancelled project identified in Table 4-4 above is not included in these calculations

When considering the body directly responsible for commissioning the projects, Defra and the Environment Agency together account for approximately 22% of the projects that Sciencewise has funded during the 2012-2015 period (6/27 projects) and 26 % of the Sciencewise funding allocations to all projects. A further three commissioning bodies (DECC, BIS and HRA) account for another 16% of funding. It is noted also that 70% of dialogue project funding (67% of projects) is allocated to projects either directly to or associated with Defra and BIS i.e. to the Departments or associated Executive Agencies or Non-Departmental Public Bodies (NDPBs). The latter include EA, Natural England, Innovate UK and all the research councils.

As was the case in 2012-2015, a significant proportion of the funding was allocated to projects of a limited number of commissioning bodies in the period 2008-2011. Three bodies (DECC, DOH and BIS) completed seven different projects (47% of projects) and accounted for 63% of the total Sciencewise allocations for projects completed during the 2008-2011 period, with 37% of the funds being shared between 8 other bodies.

From this comparison, it is clear that the overall number of bodies commissioning projects has increased under the current programme, rising from 11 in 2008-2011 to 18 in 2012-2015, with a further three bodies acting as partners on individual dialogue projects.

Commissioning body "relevance" level

Table 4-6 summarises information on the number of projects approved by the "relevance" level assigned to different commissioning bodies by Sciencewise. As can be seen, over the 2012–2015 period, 62% of the projects approved were with commissioning bodies that the programme already had contacts with as they had previously commissioned one or more dialogue projects. This suggests that the programme has been relatively successful in building up a base of regular partners and that there is a significant incidence of commissioning bodies returning to Sciencewise after previously receiving co-funding and support for a project. The programme appears less successful in terms of generating dialogue projects with commissioning bodies identified as being potential partners, covering only 17% of the identified bodies in this category as compared with 41% of those with whom it had previously worked. The programme has achieved limited success with commissioning bodies considered unlikely to be involved with Sciencewise (4% of projects fell into this category) and also worked with three commissioning bodies that were not actually classified in 2012 (and which presumably were not on the programme's horizon) on four projects.

Table 4-6: Commissioning Bodies with projects approved in 2012-15 by Sciencewise relevance level

Potential relevance to Sciencewise (Apr 2012)	No. Commissioning Bodies	No. of Commissioning Bodies with projects approved 2012-15	Percentage of bodies in category	No. of Projects	Percentage of total projects
Priority	2	1	50%	2	8%
High	22	9	41%	16	62%
Medium	18	3	17%	3	12%
Low	14	1	7%	1	4%
Not rated in 2012	-	3	n/a	4	15%
Total	56	17	-	26	100%

Source: Sciencewise team
Priority – Priority body for Sciencewise
High – Sciencewise already has contacts, they have commissioned a project
Medium – Possible commissioning agent for Sciencewise dialogue
Low – Considered unlikely to be involved in Sciencewise

There is some debate around the extent to which it is desirable for Sciencewise to expand on the number of commissioning bodies it works with, both in terms of numbers as well and in terms of policy areas. It has been highlighted that the programme's new focus on social science has allowed Sciencewise to undertake projects with new departments. One Sciencewise team member even went as far as to say that there is no reason why the programme cannot work with all departments, as long as the work on hard science is not squeezed. However, another respondent from the Sciencewise team, highlighted that there has been a long debate within Sciencewise on whether to work with a smaller number of departments in order to ensure that public dialogue activities are more embedded. It would appear that this discussion is yet to be finalised.

Sciencewise has attempted several measures to improve the diversity of policy areas for dialogue. These steps are:

- Engaging Dialogue Engagement Specialists as departmental "account managers" – introduced during the early part of 2012-2015.
- Cross-departmental initiatives – these were introduced as a way of convening departments and also serve to lower the "barrier of entry" to taking up dialogue, through the sharing of costs and resources, including expertise.

The DES account managers were introduced for several reasons: to allow a more timely interaction with commissioning bodies to allow for public dialogue to be introduced at the 'right time' and to ensure that departments know who to contact.

The DES role is also to help commissioning bodies to identify where dialogue is appropriate and where it isn't and to provide assistance in the preparation of a project concept note and business case. They then work very closely with the commissioning body throughout the project, to provide support and guidance.

The introduction of DES account managers has been a positive step in building stronger links with departments and enabling them to draw on the expertise needed to ensure more timely public dialogue support. The DESs need to be able to dedicate sufficient time to their interactions with commissioning bodies. This includes providing support throughout the process of building a business case to overseeing any public dialogue project, in some cases there is evidence that the level of advice after the business case has been prepared is reduced and commissioning bodies felt that this should be maintained. Importantly, commissioning bodies need to feeL able to call on their expertise when problems arise mid-project. This would reduce the administrative burden for commissioning bodies running projects and ensure better results and learning from the dialogue in the long-run.

Chilvers and Macnaghten (2014) identified that there is a notable absence from the types of departments that Sciencewise has engaged with. Departments associated with defence and home affairs have not in the past carried out Sciencewise-supported dialogues. This has also been noted by Sciencewise. The Home Office has been identified as a "high priority" department to SW with the MoD as a "medium" priority department. In the past, efforts to engage some of these departments is reported as having been limited:

"This could have been because of an unconscious decision to ignore these departments in the past as they were not seen as Sci/Tech oriented" (SW team member)

Other interviewees mentioned that attempts had been made but these were unsuccessful after initial interest.

There appears to be a need for the programme consider in depth and to come to a decision on its strategy regarding how far it wishes to embed within selected commissioning bodies or whether it is best to concentrate efforts on increasing the number of commissioning bodies, perhaps at the cost of developing a deeper level of understanding within those bodies currently undertaking public dialogues.

4.3.3 Range of policy issues and change over time

This indicator relates to the following evaluation question:

- Has there been a change over time in the types of projects that Sciencewise has been involved in?

The diversity of departments who have approached Sciencewise for assistance and the range of topics covered in dialogue projects has been set out above. The conclusion is that the programme had covered a wider range of policy areas than under previous programmes, in part due to the simple fact that the programme has funded more dialogues. However, a wider engagement across many departments may also limit the depth at which they can be engaged for the same amount of funding. Implementing more projects with more commissioning bodies may serve to improve the

Government's awareness of what public dialogue can achieve and of the expertise and funding on offer through Sciencewise but may limit the level of embedding possible at each of the departments:

> *"There's a limit to the "doing all things for all people" approach and it might be easier to build the relationships where the customers ask for your products, if you already have good relationships with them."* (Commissioning body)

On balance, most interviewees felt that working with a wider set of commissioning bodies is beneficial, particularly because the awareness of Sciencewise and public dialogue is low across Government.

4.3.4 Grades of those (staff members of government departments and other commissioning bodies) involved and change over time

One of the main barriers identified to increasing the adoption of public dialogue for policy making identified in previous evaluations of Sciencewise, as well as by a number of stakeholders interviewed during this evaluation, is buy-in and commitment from senior level policymakers (see also Section 5.3). This appears to remain an issue despite the introduction of higher level networking activities in the 2012-15 programme. However, an alternative view was expressed by one academic/contractor interviewee who was of the opinion that senior civil servants and other commissioning bodies "get it" (the concept of dialogue), but it is often hard for those more junior but responsible for delivering the policy to understand why public dialogue is needed.

A number of interviewees within the Sciencewise programme, but also those within government departments, have suggested that senior grade policy makers tend to be London-centric in terms of taking part in public dialogue activities; their participation in dialogues taking place outside of London is very limited. Such involvement is critical to maximising the value/learning from the dialogues themselves.

Interview responses also suggest that this barrier may be more relevant to government departments than it is for some of the other commissioning bodies, where senior involvement in both the design and implementation of dialogue projects takes place (see also Section 5 on structural and cultural change).

4.3.5 Appropriate diversity of stakeholders involved (i.e. the right stakeholders at an appropriate level of seniority)

This indicator relates to the evaluation question:

- Were the right stakeholders[29] involved and with the appropriate capacity in the public dialogue activities?

Issues surrounding the involvement of senior government department officials and those of other commissioning bodies have been discussed above.

The majority of stakeholders interviewed expressed the opinion that, generally speaking, the right expert stakeholders were involved in dialogue events, although a number of issues were raised on how public participants were identified and recruited. The nature of the methodology used in public

[29] The term stakeholders here is used in its broadest sense, referring to all those with an interest in a particular policy area and including the public, interest groups, experts, policy-makers and etc.

dialogue activities, typically involving invited small group in-depth deliberative dialogues, restricts the numbers that can be involved in one single session. One academic/contractor interviewee was concerned that whilst those involved will have learnt a lot about the policy area and have had the opportunity to contribute to the policy-making process, the rest of the population will not have had a similar experience. Consequently, the interviewee felt the challenge was to ensure results could be extrapolated to the wider population, implying there may be issues of representation within some dialogues. The need to develop new (and largely digital) methodologies to increase representation was emphasised by a number of interviewees. Sciencewise guidelines for the recruitment of participants in dialogues provides a valuable tool to guide the process but it was recognised by a number of the interviewees as not being an exact science. It was suggested that public dialogues should be viewed as part of a wider engagement process and that mixed methods for obtaining wider views and involving particular socio-economic groups (which have proven difficult to involve in dialogues) should be explored and utilised.

One academic/contractor interviewee highlighted the potential conflict between guidance notes issued by Sciencewise which claim that public dialogue gives "strong indications" of what the public feels and caveats included in project reports stating that dialogues are not necessarily fully representative. The interviewee goes on to recommend caution in how information is presented as language often implies the results are "what the public wants", as opposed to being indicative and not necessarily fully representative. Many of the dialogue reports themselves also include strong caveats regarding over-claiming representativeness of dialogue results.

The public dialogue evaluation and case study reports have highlighted some issues in terms of stakeholder participation. In some cases, particular stakeholders were not keen on the use of public dialogue. For instance, in the learning report for the dialogue on Water Catchment Planning[30] it was stated that (page 19):

> *"Not all stakeholders were enthusiastic about the incorporation of public dialogue. This was often due to negative experiences in the past of public engagement activities, or because public events were seen as more hassle than they are worth"*

In other cases, such as the Cambrian Mountains project, in spite of the fact that some very senior stakeholders were directly involved (including ministers), some participants felt that more time was needed to fully engage expert stakeholders, including from Government, and to involve other key stakeholders who did not take part (e.g. Welsh Water and utility companies).

Across the responses from interviewees for this evaluation, the selection process for public participants was generally seen as an important part of the project design and many commented that the process works well. The objectives and goals of the individual projects were seen as key determining factors when selecting the right participants. Overall, the majority of responses commented that the right (key and relevant) stakeholders had been included in the activities.

Nonetheless, the process of selecting expert stakeholders was seen as particularly challenging. It was highlighted that there is a difficulty in selecting stakeholders who will stimulate the dialogue. For instance, general practitioners (GPs) are often seen as authority figures that the public may be reluctant to challenge, thus, stifling dialogue. Furthermore, it was stated that organisers have to ensure that all voices are included particularly when there are strong views on either side of the debate.

[30] Support to catchment pilots - facilitation and resources for community participation, Learning report, Dialogue by Design, April 2013

Projects have used various methods to gain insights from the public and expert/interest group stakeholders alike. For instance, the Mitochondria replacement project constructed a consultation website and questionnaire that was open to self-selecting respondents. Furthermore, it conducted 979 face-to-face interviews with a representative sample of the public across 175 random locations and held open public meetings. The Significant water management issues study also conducted an online survey of 867 individuals aged 16-75 years from England using Ipsos MORI's Online Access Panel.

In the health sector, the recognition of benefits that can arise from consulting with wider groups of people as opposed to more restricted "patient groups" when seeking public inputs to wider health policies was recognised as a major learning outcome from the dialogue project, and Sciencewise was identified as being instrumental in encouraging the commissioning body in this direction.

A number of interviewees from government departments expressed interest in cross-cutting approaches to public dialogues. Sciencewise has recognised the value of this approach and has been developing its cross-cutting work in more detail over the past year. A "silo" approach, where individual departments operate independently when seeking to obtain input from the public into policy-making, is likely to lead to missed opportunities. Particular benefits arising from such an approach and that were identified include:

- Cost sharing possibilities, which are particularly interesting for departments in a time of budget cuts
- The possibility of sharing tasks (and therefore time commitments) and expertise between departments as well as mutual learning opportunities
- The ability to consider potential conflicts, complementarity and synergies between different and related policy areas from the public perspective, and
- Reduction of any tendency towards "consultation fatigue", where the different departments maybe consulting the same communities/interest groups on overlapping or related issues.

Interviewees from government departments, other commissioning bodies and the Sciencewise team have emphasised the importance of dialogue oversight groups as a mechanism for including key stakeholder interests (including NGOs and specialist stakeholders such as scientists who often bring valuable information) and for enabling them to participate in dialogue projects. It appears to be the case that dialogues vary in terms of when the oversight group is established. In some cases the group appears to have been established after the business case has been developed and approved; some members therefore may not have had the opportunity to input into the initial conceptualisation of the dialogue. In the event that members are not in place for the development of the business case, the early establishment of the group prior to the launching of the dialogue provides the opportunity to fine tune and correct any omissions regarding key questions to be covered. It was also noted that some dialogue projects have proceeded without oversight groups (e.g. the Horizons Scanning, Longitude and Embedding Wellbeing dialogues).

More importantly, it was recognised that the oversight groups play a central role in the dialogue projects and consequently that careful selection is required in order to ensure a balanced approach. On occasion, some members have been changed during dialogues, by mutual agreement. The nature of the policy area appeared to be a factor in creating challenges in determining who to involve both on the oversight group and for the dialogue itself. Identifying the full range of individuals/groups who should be involved in dialogues and without whom significant gaps might exist was not always immediately apparent for some interviewees, whereas in other dialogues characterised by strong views on either side of the debate, it was much clearer who needed to be engaged.

Just as the oversight group itself has a powerful role, by extension, so too do those selecting who should be on the oversight group. It was reported by one academic/contractor interviewee that an individual from the commissioning body had expressed the view that they did not want people involved in the dialogue process "who did not think in the same way as the commissioning body". Whilst Sciencewise and/or contractors may be able to challenge such positions when they are co-funding a project, clearly this would not be the case where departments or commissioning bodies are running their own dialogue projects. Overall, however, the main feeling expressed by interviewees was that the selection process for oversight group members for Sciencewise supported dialogue projects had resulted in a good cross-section of stakeholders.

There does appear to be a variation in performance of oversight groups, with some interviewees mentioning this. However, it was not possible to identify any common causes for such variations, and generally interviewees appear to have been broadly happy with the work that the oversight groups have done.

4.3.6 Examples where there has been a demonstrable change in policy

This indicator relates to the evaluation question:

- How did departments use the outputs of Sciencewise's involvement?

Previous Sciencewise programme evaluation and impact reports[31] have identified many incidences where public policies have been influenced by the results of public dialogues. In terms of projects commissioned within the current period, the reports indicate that four projects have had noticeable impacts upon a policy. These impacts are discussed in detail in Section 5.1 alongside other forms learning arising from the dialogue activities.

4.3.7 Timing of public involvement/dialogue (point in policy lifecycle)

This indicator relates to the evaluation question:

- At what point in the policy cycle did they (commissioning bodies) approach Sciencewise?

Sciencewise funded dialogue projects have been classified in accordance with an assessment framework based on topologies determine by the stage at which a particular area of science or technology might have reached within the policy cycle. These different stages ate likely to influences the mode for engaging with the public and the nature of any dialogue project. The topologies developed in Section 2.2.7 have been applied to the 2012-2015 projects in Table 4-7 below. Annex 3 sets out the justification for allocating each project to its respective category. Although based on a relatively small number of projects in the past funding periods, the table indicates that the proportion of 'upstream' dialogues has decreased over time, while 'honest broker' dialogues have increased whilst the proportion 'downstream' dialogues has remained broadly the same.

[31] Sciencewise Impacts and Accolades - Monthly reports started in November 2014; Sciencewise Impacts Evidence 2012 – 2014, published June 2014; Sciencewise programme evaluation reports published in 2011 and 2013, as well as a draft evaluation report for 2014 currently under preparation

Table 4-7: Summary of topics of dialogues and activities supported by SW-funding (see also Section 2.2.7)						
Year	Model of public engagement / policy timing of issue					
	Upstream	Overlap	Honest Broker	Overlap	Downstream (or Issue Advocate for 2004-2011)	Number of dialogues considered (total in period)
2004-2007	**3 (43%)**	-	**2 (29%)**	-	**3 (43%)**	**7 (7)**
2008-2011	**'3'/10 (33%)**	**1**	**'5'/10 (50%%)**	-	**'4'/10 (40%)**	**10 (15)**
2012-2015	**'5'/20 (25%)**	**1**	**'11'/20 (55%)**	**3**	**'10'/20 (50%)**	**20 (28)**
Grouping for pre-2011 projects are as used in Macnaghten and Chilvers (2014). Overlaps counted in both categories.						

Public dialogue is characterised by a deliberative process between policymakers and the public over a period of time. As such, dialogue can take place at any point within the policy cycle from identification and development, through implementation and monitoring and being an integral part of evaluating and refocusing policy, and not something that simply takes place as a one-off exercise at a particular point in the policy cycle.

Sciencewise project selection criteria do not permit it to fund dialogues which are designed to endorse policy decisions already made. However, dialogues intended for exploration of future policies on existing topics (e.g. Bovine TB and Shale Gas) mean that dialogues may be involved where some related decisions have already been taken. Projects that have been funded cover all stages of the policy cycle, from dialogues initiated very early in the policy cycle such as the Stratified Medicine project which was described by an oversight group member as "*upstream enough that all the major decisions haven't yet been made, but not so upstream that there's nothing to talk about*", to those taking place much later in the policy cycle, including DECC's Shale Gas dialogue and the Bovine TB dialogue. Available evaluation and case study reports confirm this spread of dialogue projects across the policy cycle. For instance the Bioenergy Public Dialogue commissioned by the Biotechnology and Biological Sciences Research Council (BBSRC) is a good example of an "honest broker" dialogue. As stated in the dialogue's evaluation report[32] the stated aim of the project was to (page 11):

> *"…allow the diverse perspectives of a range of UK residents, in the area of bioenergy, to be articulated clearly and in public in order that future policies can better reflect these views, concerns and aspirations."*

Examples of upstream dialogues include Stratified Medicine, Horizon Scanning and Wellbeing. Some commissioning body interviewees noted that that there was a "preferred point" in the policy cycle for Sciencewise involvement, with this being somewhere in the middle. Others felt that PD could be appropriate at any point – it depended on the policy in hand, topic, department involved, etc. Holding dialogue later in the policy cycle was identified as carrying the risk that any scope for adapting key elements might become more restricted. Being too late in the cycle carried the risk of the issues being already "too decided". In general, there seemed to be less concern about being early in the cycle, although some suggested that this could make having an impact difficult.

[32] Evaluation of BBSRC's Bioenergy Public Dialogue, Collingwood Environmental Planning, prepared for BBSRC and Sciencewise, April 2014

Policy-making is often complex, involving a number of different strands and initiatives in support of the main policy. Even if a central policy may be relatively fixed there may still be scope for public dialogue work on sub-elements of policy making. For example, whilst an earlier public dialogue could have been undertaken regarding the decision as to whether to go ahead with fracking (and the conditions attached), the dialogue supported by Sciencewise focused on how people might best be engaged in the event that activity looks likely in a specific location. Therefore, it can be valid and appropriate for Sciencewise to support public dialogue at many different stages of the policy cycle depending on the specific issue at hand and the extent to which the institutional framing of policy deliberation for dialogue aligns with public views of the issue at hand.

A number of interviewees were quite explicit about their desire to use public dialogue early in the policy cycle and that they did not approve of using dialogue merely to validate the organisation's own view. Another interviewee from the Sciencewise team emphasised that timing was important in the sense that certain things need to be in place before any public dialogue would be useful. Too early and there is nothing to talk about. For example, some policy areas require a certain amount of research work to be carried out in order to generate information in relation to possible potential options, the impacts they may have, existing public views on the topic etc. so that there is indeed something available to discuss during the dialogue process. This period and the level of information already available or the time it might take to gather certain aspects together varies from policy to policy and so it is difficult to make hard and fast rules about when dialogue should take place. Members of the Sciencewise team suggest that role of DESs acting as account managers with different departments provides an ideal opportunity to identify key points when dialogue might be possible. The combination of public dialogue expertise and regular access to up-to-date information on policy developments puts them in a very good position to start "*talking, nudging and pushing*" departmental staff to consider public dialogue as and when these opportunities arise. Without this intimate knowledge of developments early in the process of developing policies (and even identifying the need for policies), the danger is that if Sciencewise pushes too early, it will be met with resistance and the opportunity for public dialogue later in the policy cycle at a more appropriate time may be lost.

As set out in Table 2-1 and Table 4-7 above, the portfolio of dialogues funded by Sciencwise has been shifting towards those dialogues termed as "honest broker" dialogues, which deliberately aim at decisions which are pending or at exploring solutions for on-going policy issues. This type of dialogue has increased in prevelance in the current programme (55% of dialogues as compared with 29% in the pre-2008 period. SW needs to make a policy decision as to whether or not this is the type of dialogue it wishes to fund into the future, or whether it wishes to move more upstream. The implications of this are that additional support activities or alternative ways of doing things (e.g. funding upstream dialogues 100% and having a sliding scale as the dialogue moves towards the downstream end of the spectum) might be considered to promote a stronger upstream agenda.

No clear balance overall of views from interviewees could be determined on whether or not Sciencewise should be engaging more with government departments and other commissioning bodies at upstream or downstream stages of policy development.

4.3.8 Evidence of changes in emphasis on public dialogue

This indicator relates to the evaluation questions:

- How have perceptions in Government changed about the value of taking public views into account when making decisions and the extent to which this happens?

- What are the barriers to the implementation of dialogue in policy making? How have the activities of Sciencewise helped overcome these barriers?

Perceptions of the value of taking public views into account when making decisions and the extent to which this happens

Numerous reports[33] published by Sciencewise provide evidence of increasing emphasis on the utilisation of public dialogue approaches for policy development.

It is clear that evidence of changes in the emphasis placed on public dialogue within government departments and other commissioning bodies comes in a number of forms. Firstly, the number of public dialogues being undertaken and the number of requests for support from Sciencewise represents a demonstrable commitment to engaging in public dialogue. A second source of evidence is the changes made within organisations to support the implementation of dialogue projects. This area of evidence is the focus of interim goal " Structural and cultural change – Creating the structures and systems needed to support the use of public dialogue" and outcomes on this measure can be found in Section 5.

The number of requests for support from Sciencewise has been covered in Section 4.3.2 above. As explained, the number of Sciencewise projects, as well as the range of commissioning bodies, has increased during the period 2012-2015 in comparison with earlier periods. This certainly suggests increased recognition of the value of public dialogue within government, particularly in a time of budget constraints and overall cuts in funding.

Alongside the fact that the number of departments working with Sciencewise has increased, is the finding of increased uptake of recommendations in policy institutions, evidenced in feedback to the evaluation such as that received from Defra following the Water Quality and Sustainability dialogue project implemented with support from Sciencewise in 25 pilot catchment areas. The department has now rolled out the same approach nationally to catchment partnerships in all of the 87 cross-border catchments, and there are now 107 catchment partnerships operating across the country using toolkits developed as part of the Sciencewise supported project.

Feedback from interviews suggests that whilst there have been positive movements in the utilisation of dialogue findings in the policy making process, public dialogue as a way of contributing to the development and delivery of policy is still very fragile. Reasons for this fragility are attributed to:

- downsizing of the government scientific civil service, and
- continued budget cuts across government departments.

[33] Sciencewise Impacts and Accolades - Monthly reports started in November 2014; Sciencewise Impacts Evidence 2012 – 2014, published June 2014; Sciencewise programme evaluation reports published in 2011 and 2013, as well as a draft evaluation report for 2014 currently under preparation

Barriers to the use of public dialogue in policy making

Key barriers to the implementation of public dialogue identified by interviewees during this evaluation are summarised in Table 4-8 below. These are very much in line with the barriers identified in the earlier evaluation carried out by Sciencewise in 2012, clearly suggesting a degree of persistence.

Issues regarding a lack of buy-in from senior level staff, a lack of understanding of the concept of dialogue and questions regarding value for money from public dialogue, are core reasons for establishing Sciencewise in the first place. Whilst these issues remain barriers to the further utilisation of public dialogue, gradual progress does seem to be being made as explained above. Sciencewise activities described in Table 4-1 at the beginning of this section have been designed to address these issues; in particular, the programme interim goal of Creating Evidence (see Section 6) is designed to play a major role in developing a body of evidence which can be used to persuade policy makers within government departments and commissioning bodies of the value of dialogue.

Table 4-8: Barriers to the implementation of public dialogue in policy making

Barriers identified in the 2012 evaluation	Barriers identified in current evaluation 2014
Credibility of dialogue results.	Lack of senior awareness and buy-in
Representativeness Public participants unwilling or unable to engage meaningfully	
	Lack of understanding within potential commissioning bodies of the concept of dialogue
Concerns over the potential response and backlash from the public	The perception that some policy areas are laden with risk and that such policy areas may be jeopardised by the dialogue process
Availability of staff in departments. Lack of skills	Capacity and capability/skills. A high turnover of staff within the civil service (largely due to rotation policies) acts as a barrier to organising dialogues and increasing staff understanding
Issues of time and timing. Cost.	Resources (both financial and in terms of time), exacerbated by concerns over value for money.

4.3.9 Other evaluation questions not covered by specific indicators

This sub-section provides an analysis of the other evaluation questions identified in the design phase for the evaluation but which are not covered by the indicators set out in Table 4-2 above and analysed in the previous sub-sections.

Why did Departments approach Sciencewise for help? What was Sciencewise's remit?

Interviewees noted that it is often difficult to say exactly how projects get started. The process seems quite fluid and there are several routes to project leads being developed and then moving into actual dialogue projects. In general, though, it is clear that Sciencewise has to make significant efforts to go out to the departments and talk about its work in order to create leads.

Interviewees indicated that there is a need to go slowly with departments at times. A department contact might be in favour of public dialogue in general but Sciencewise team members can be required to identify an appropriate time to push the agenda forward, providing advice on potential

opportunities and policy areas until the required impetus is in place (in terms of recognition of the need for dialogue and the benefits it can bring to the development of a specific policy) before a project can happen.

Several interviewees spoke about the work with CSaP in establishing priority areas as being important, while others believe that high-level networking is important. Personal contacts seem to be important for reaching the right people and the DESs play a key role in this regard. The extent to which projects breed more projects was a topic of discussion. A number of interviewees were critical about projects where the public dialogue element felt "tagged on" to the policy development process, rather than being a core element.

The range of responses provided by interviewees shows that there are a number of motivations behind commissioning bodies' decisions to approach Sciencewise for support. The main reasons given for requesting support for public dialogue projects from Sciencewise were:

- Funding
- Availability of the right kind of expertise as well as capacity
- Positive previous experience with Sciencewise supported projects
- The role that Sciencewise can play as an independent broker to help guide the policy development process
- Continuity, e.g. the project was a follow-on to a previous project supported by Sciencewise.
- Complementarity between Sciencewise approach to public dialogue and other consultation activities undertaken by the commissioning body (e.g. consultation with specific stakeholder groups)
- To build capacity within the commissioning body's staff
- The availability of support throughout the whole process from the identification of the initial concept to its roll out as a government policy
- To identify and fill gaps in the commissioning body's knowledge of what the public think about a particular issue/topic to incorporate into policy positions
- To give legitimacy to the policy development process, ensuring that it incorporates public perceptions and priorities
- To identify potential areas of conflict around different policy options, and
- The project represented an opportunity to develop pilot projects using available funding streams, giving the opportunity to test out existing assumptions.

In practice, a commissioning body's motivation to approach Sciencewise was often a combination of a number of these reasons, depending on the particular circumstances of the commissioning body, the stage at which the policy development process currently sits and the individuals involved (in terms of whether or not they had had previous exposure to Sciencewise, their knowledge and experience of public dialogue etc.). The availability of funding was identified as significant by a sizeable number of interviewees, although many of these stated that even if Sciencewise funding had not been not available, they would still have approached Sciencewise for the expertise that they can contribute. Linked to this, previous positive experience of working with Sciencewise was cited on a number of occasions as being a significant factor in requesting support for subsequent public dialogue initiatives. This mirrors the positive impression that interviewees had of Sciencewise in other parts of interviews.

Sciencewise support through the whole process of project development (including its identification, design and planning), implementation and subsequent evaluation was appreciated widely. In addition, a number of stakeholder interviews from both government departments and other commissioning bodies highlighted Sciencewise's independence, noting that this added credibility

and legitimacy to the public dialogue process in the eyes of both the public as well as the wider stakeholder community.

What lessons can be drawn in terms of what the dialogue was intended to achieve? Are there policy areas or types of dialogue where Sciencewise is most effective?

The difficulty in measuring the effectiveness of public dialogue, and the partnership approach promoted by Sciencewise, was highlighted by a number of those interviewed. It was argued that a wider concept of effectiveness should be adopted, over and above the measure of determining whether certain policies had changed as a result of the public dialogue. A new quality framework for evaluating policy dialogues has been drafted by Sciencewise in February 2015 and covers both impacts as well as process and should provide the opportunity for evaluations to be flexible yet comprehensive. The value of information generated by in-depth deliberative discussions with members of the public was emphasised in helping elucidate the significant moral and ethical dilemmas associated with emerging science and technology; it would be very difficult to achieve the same quality of information and insight via other approaches.

Similarly, the availability of funding from Sciencewise had also contributed to effective cross-department working in government, according to one interviewee from a commissioning body, which would have been difficult through other mechanisms.

Whether dialogue projects represented 'value for money' was another issue discussed by some stakeholder interviewees, including how this should be measured. Suggested measures included whether UK industries and research have remained in the UK rather than going abroad as a result of "*honest conversations between stakeholders and the public*". One Commissioning Body interviewee also suggested that the Government Digital Service (GDS) had benefited from the success of the Sciencewise programme in its ability to demonstrate the need for digital resources.

Whilst many of those interviewed were of the opinion that Sciencewise had been effective in general terms in moving departments towards the acceptance of public engagement in policy making processes, some interviewees stated that due to the fact that the number of people involved in the dialogues is relatively few, it was difficult to demonstrate their value for money. However, the increasing body of evidence from the individual dialogue projects supported by Sciencewise and their evaluation and follow up research can play a role in demonstrating this value to a wider audience. As an example, the independent evaluation of the Wellbeing project demonstrated that a particular campaign on mental health would probably not work and in doing so probably saved the public purse in excess of several million pounds; details of actual costs were identified in the Sciencewise follow-up on longer term impacts.

How do Departments deal with a dialogue that produces findings that do not align with current policy (where the dialogue is being specifically used to review or amend a policy) or a policy that is in the process of development?

The Sciencewise approach involves working with departments and other commissioning bodies to consider how policies may be affected by public dialogue and how they will take the results of dialogue into account when developing policies. Sciencewise's own screening processes attempt to filter out project ideas which would involve the use of dialogue to validate decisions that have already been made, and the programme team generally appears confident that this procedure has been effective. The programme team also encourages clients to consider in advance the risk that dialogue may bring out certain issues that may be in conflict with current or new policies, and that they should weigh these risks against the potential benefits that can come out of the dialogues. It is important that such discussions are held with senior staff within departments and other

commissioning bodies to ensure that decision makers are fully involved in the process. The transparency of the public dialogues, involving publication of project evaluations, provides a definite disincentive to ignoring the findings; although it is noted that the commissioning body itself has to sign off on any evaluation report with the accompanying possibility that this can be influenced.

Numerous examples were provided by interviewees where adjustments were made to draft policies as a result of public input from the dialogue (Impacts on policies are covered in Section 6). The fact that dialogues happen publicly and that the outputs are published in reports on the Sciencewise website also requires departments or other commissioning bodies to explain clearly where and why any subsequent policy differs from the outputs of dialogues. However, one academic/contractor interviewee noted that departments scrutinise findings within the dialogue and evaluation reports that are not aligned with current policy.

One particular criticism levelled at the dialogue development process is that it can be framed in such a way that it does not allow for anything that goes against current policy. As mentioned previously, having wide representation on the Oversight Group for the dialogue and their involvement in drawing up the framework for dialogues can help minimise this possibility.

4.4 Issues identified and conclusions

Conclusions regarding the number and spread of dialogue projects

The above analysis reveals the following.

- The number of projects that Sciencewise has collaborated on in the period 2012-2015 is significantly higher than previous years (2008-2011 and pre-2008), and this may be an indication that the programme has made progress in encouraging government departments and other commissioning bodies as to the value of public dialogue and to accept it as a key part of the policy making process.

- There is an increasing number of commissioning bodies being involved with the Sciencewise programme when compared with previous periods, indicating a greater coverage by the programme. However, a significant proportion of dialogue funding has been allocated to a relatively small number of commissioning bodies and these bodies tend to have been involved with multiple projects over the current and previous programmes. The fact that these commissioning bodies are "repeat customers" may be a partial indicator that public dialogue is increasingly being seen as important within these bodies.

- Despite the large number of projects in the current period, there appears to have been a shortfall in the allocation of the dialogue budget resulting from a relatively weak pipeline toward the end of the funding period, but this may be less so than under previous periods.

Whilst the programme may still be heading for a small underspend on the funding allocated to support government departments and other commissioning bodies, the projects pipeline in terms of leads identified and project proposals being developed has been stronger during this programme cycle than at any other time in Sciencewise' history.

The 2012-2015 programme carried out a range of policy analysis and social intelligence activities to identify and bring to the fore issues which are of interest to the public and for which public dialogue might be a fruitful approach for departments seeking public inputs to policies. The programme has also carried out a range of advocacy activities designed to persuade commissioning bodies of the value of public dialogue, including the dissemination of dialogue project evaluations and programme

evaluations (which include the results of follow-up research into longer term project impacts) which demonstrate the usefulness of dialogue to policy makers and provide clear information on the outputs they can provide.

Whilst progress has been made, significant challenges still remain which act to hinder the roll-out of further public dialogue by departments and commissioning bodies. These include:

- The continuing difficulties experienced in engaging with high-level staff within government
- The perception that some policy areas are laden with risk and that such policy areas may be jeopardised by the dialogue process
- Limited capacity and capability/skills in public bodies
- A high turnover of staff within the civil service (largely due to rotation policies) acts as a barrier to organising dialogues and increasing staff understanding, as those with exposure to and experience of dialogue leave their positions to be replaced by others who might not have the same degree of knowledge and skill
- Resources (both financial and in terms of time), exacerbated by concerns over value for money in times of budget restrictions.

Key lessons that have been identified through the analysis carried out above include:

- The importance of public dialogue oversight groups (their composition involving key stakeholders with an interest in the policy area that the dialogue is intended to contribute to and a recognition that they are a powerful influence over the framing of dialogues)
- Both funding and Sciencewise expertise and support throughout the whole cycle of implementing dialogues are strong incentives for government departments when deciding whether or not to approach the programme, and
- With respect to achieving close to full expenditure of the projects budget, the programme remains the main generator of leads and dialogue projects, with very few commissioning bodies making independent approaches to Sciencewise.

5 Interim Goal 2: Structural and cultural change – Creating the structures and systems needed to support the use of public dialogue

5.1 Introduction

Evaluation on this interim goal relates to the degree to which Sciencewise's activities have been able to support or instil structural or cultural changes within government and its agencies. According to the Sciencewise Evaluation Report of March 2013:

> *"Evidence shows that those involved in running dialogue projects with Sciencewise support had learnt a great deal about dialogue; the Sciencewise capacity building approach to support by working closely alongside project managers and providing detailed advice and guidance whenever needed was highly valued."*

However, the report also recognises that even after contact with Sciencewise:

> *"There remained challenges in relation to the extent to which public bodies had incorporated public dialogue into their main policy making processes."*

Evaluation on this interim goal also concerns how far the Sciencewise programme has been able to "embed" the structures and systems to support the use of public dialogue by policymakers. This includes the extent to which the culture of policymakers has changed in terms of how widely accepted the use of public dialogue is.

5.2 Activities undertaken by the Sciencewise programme in support of structural and cultural change

The activities undertaken or supported by Sciencewise have been described in earlier sections of this report (see for example, Section 4.2). The activities that contribute to this interim goal are, of course, the same that also contribute to interim goal 1. For this second interim goal, the activities are used to provide evidence for a different set of indicators (set out in Section 5.3, below).

In terms of the Sciencewise "programme areas" described in Table 2-1, this interim goal concentrates on the extent to which raising awareness/knowledge sharing, capacity-building activities and also programme governance and management play a part in instilling structural and cultural change within government.

For completeness, the following activities are considered for this interim goal:

- Past Sciencewise-supported public dialogue projects, their evaluations and wash-up meetings (as described in Section 4.2)
- Sciencewise programme evaluations including follow-up of longer term impacts
- Sciencewise capacity building and networking activities (as above, described in Section 4.2)
- Thought leadership articles – to provoke discussion amongst academics and policymakers about innovative uses of deliberative methods
- Webinars and events –– promoting and discussing the use of public dialogue in policy making, and

- Social Intelligence pieces – commissioned on particular science & technology topics to give a snapshot of current public views based on available research.

5.3 Identified outputs and impacts

5.3.1 Approach

The Evaluation Plan identified the following indicators to be used as metrics for assessment of the degree to which Sciencewise activities have been successful in supporting structural and cultural change within government and its agencies. Some of these indicators are also relevant for Interim Goal 1: Effective Advocacy and are discussed earlier in Section 4 and referenced where necessary.

Table 5-1: Indicators for Structural and Cultural Change - Creating the structures and systems needed to support the use of public dialogue
Indicators
Changes in Sciencewise's role over time
Changes to government guidance to require increased dialogue / engagement
Number of staff trained in public dialogue and engagement
Diversity of policy areas - Discussed in Section 4
Changes in who is involved - Discussed in Section 4
Changes in Departments requesting help - Discussed in Section 4
Changes in frequency of requests for help - Discussed in Section 4
Timing of involvement (changes over time in point in policy lifecycle when approached) - Discussed in Section 4

The evaluation of progress on this interim goal uses a variety of sources of information: evaluation reports, Sciencewise and other literature reporting on the activities covered and the evaluation interviews.

This interim goal may also be further broken down into outcomes and impacts that fall into two broad categories:

- Structural change: this includes changes in written guidance documents for policymakers to increase the role of public dialogue or other deliberative methods in science policy, and

- Cultural change: this includes changes in the thinking of key stakeholders and in the culture of the organisation they belong to, regarding the value of public dialogue.

The evaluation interviews provide valuable evidence to assess the degree of structural and cultural change achieved. The evaluation team then sought to support any indications of structural through reference to external reports of activities. The documentary evidence was then used to gauge the degree of cultural change.

The evaluation questions used in the interviews in relation to this interim goal are shown in Table 5-2.

Table 5-2: Evaluation questions relating to Structural and Cultural Change discussed during interviews
What evidence is there of a change in attitudes towards the use of public dialogue (changes in official guidance, skills training, etc.)? To what extent can this be attributed to Sciencewise?
Has there been a change over time in the types of projects that Sciencewise has been involved in?
Do Departments have greater awareness of the need for public dialogue and is there evidence that they have changed or are changing their approach to public involvement?
At what point in the policy cycle did they approach Sciencewise?
How able and willing are those who have been involved in a Sciencewise project to take forward more public dialogue as a result? Do they carry out subsequent engagement by themselves? Do they encourage others in their department to engage in more public dialogue? Have any departments established protocols or systems setting out when engagement should take place and how?
To what extent is it likely that other departments and agencies will call on Sciencewise in the future?
Is there a greater pool and diversity of skilled people able to design, deliver and evaluate public dialogues?
Why have some policy makers not engaged in greater use of public dialogue, despite the availability of Sciencewise's services?
Is the Sciencewise approach to public dialogue (as explained in the Guiding Principles and as carried out in practice through the funding of different initiatives) relevant to all types of science and technology policy and decision making, and to all types of science and technology policy and decision maker?

Where evaluation questions are covered by an individual indicator, the analysis of the individual evaluation question appears under the appropriate sub-section below. Where the same interview questions have provided evidence for multiple indicators, these are repeated for each indicator where they play a part.

We present below our findings in relation to the different evaluation questions with regard to both of these aspects and Sciencewise's role in generating change.

5.3.2 Changes in Sciencewise's role over time

The extent to which Sciencewise's role has changed over time (in comparison to past funding periods) provides an indication of the degree to which structural change may be taking place with regard to the use and positioning of public dialogue in science and technology decision-making.

It is of note that prior to the current funding period, the activities supported by Sciencewise largely focused on public dialogue projects alongside some other capacity building efforts, such as, working lunches and other workshops. This initial offering from Sciencewise has evolved over time, with a wider range of activities currently offered. These include social intelligence and thought leadership activities, as well as the events (such as the Community of Practice events held earlier in the 2012-2015 period) and webinars.

The feeling among many of stakeholder interviewees (including those not from the Sciencewise team but with a significant history of involvement from the commissioning body side and in public engagement in general) was that the role and activities of Sciencewise has not changed significantly over the course of its history.

> *"They have not moved with the times and the same model is always followed again and again and generally; they [have] lacked sufficient imagination around techniques such as social media or surveys."* (Commissioning Body)

"There is a feeling that the way of doing public dialogue that is championed by Sciencewise feels outmoded and so it feels like it is doing the same things as it has been doing for many years" (Commissioning Body)

There appears to be a lack of understanding of what Sciencewise "does" and how it goes about it within its target "customer" group of commissioning bodies. This can be the case for current and past users of Sciencewise, and according to even Steering group members. Several of the interviewees indicated that that the link to BIS was a government "stamp of approval" that enabled them to convince their colleagues that dialogue was worthwhile.

More recently there is evidence of the programme moving in a new direction with Sciencewise providing more than dialogue support:

"One of the big changes in the last year or so is that it doesn't just fund public dialogue. Sciencewise now has different services to offer and not just services leading to dialogue projects." (Commissioning Body)

The strategic priorities for Sciencewise for the years 2013/14 and 2014/15 are described in the Steering Group documents of February 2014 and 2015 respectively. In terms of this interim goal, social intelligence was identified as a priority area for Sciencewise in 2013/14. This continues to be a priority in 2014/15 and, in addition, wider knowledge sharing and cross-cutting or interdepartmental issues were identified for higher priority, while some types of thought leadership articles have been de-prioritised (as discussed later in Section 6.3.5).

There is therefore evidence of a change in the role that Sciencewise is trying to play. The extent to which this has been driven in response to structural or cultural changes within commissioning bodies towards public dialogue is less clear.

5.3.3 Changes to government guidance to require increased dialogue / engagement

The indicator concerning changes to government guidance was developed to capture the degree to which there have been demonstrable changes in Government departments' requirements concerning dialogue. However, this relatively "hard" structural indicator of change must also be complemented by "softer" information on change related to attitudes, which addresses the cultural perspective/attitudes within government departments. The relevant evaluation questions in this respect are:

- What evidence is there of a change in attitudes towards the use of public dialogue (changes in official guidance, skills training, etc.)? To what extent can this be attributed to Sciencewise?

The Theory of Change report acknowledges that *"there are no structural or career incentives for civil servants to undertake public dialogue: it remains a largely unrewarded activity."* This evaluation has not found significant evidence to counter this claim. However, some indications of change have been identified, and that may result in some incentives being introduced in the near future. A member of the Sciencewise team has indicated that a one hour slot will be introduced into the Civil Service Learning (CSL) for fast-stream and non-fast stream staff, as part of one day courses on open and collaborative policy making (some of these events have now been held, with further events planned as described in Section 5.3.4). In addition, Sciencewise resources will be used in the new CSL policy curriculum for policy professionals within the civil services.

Furthermore, there have been examples where high-level politicians have requested public dialogue during the current evaluation period. The HFEA was asked by the Secretary of State for Health and the Secretary of State for BIS to carry out public dialogue in January 2012[34]. The Leap Seconds dialogue was also carried out in response to a request from the then Minister of State for Universities and Science, David Willets[35]. The evaluation interviews also suggest that in general there has been a greater recognition of the need to have mechanisms or instruments that enable people to have their say. For example:

> *"It is now widely recognised that public policy is better off for carrying out the dialogue process".* (Commissioning Body)

However, the acceptance of public dialogue is not universal. According to one Sciencewise team member: *"… one department has become more reticent to the use of public dialogue and it is unclear why this might be".* Interviews with other Sciencewise team members and the various departments confirm that acceptance of dialogue is not universal. Although some indicate that internally there are questions over the use of public dialogue, they also indicate that the departments are not against its use as a concept, rather there are issues about how it is used and when it is relevant. Departments have become more questioning about how public dialogue is best used and are now working with Sciencewise to address these concerns (this is discussed further in Section 6).

Some departments have also expressed a growing interest in the use of public dialogue. This is particularly apparent for the Health Research Authority (HRA), where Sciencewise activity has been influential in encouraging greater use of public dialogue. Indeed, the Authority created an Engagement and Policy Manager position within their department in October 2014, showing a growing commitment to using public dialogue and to build further capacity to do so.

This extends to other departments where new policymakers have indicated that there have been very positive experiences overall:

> *"People in the department were mostly open-minded and we didn't struggle to get people to attend the events, even on Saturdays. People hadn't done public dialogue before and they are still open to doing more."* (Commissioning Body)

However, an interviewee also noted that their department is keen on having more open conversations – not necessarily through public dialogue but also using other types of engagement. In part, this is due to budget constraints, even with the availability of funding through Sciencewise. The interviewee noted:

> *"There aren't necessarily the resources to keep on doing more public dialogues."* (Commissioning Body)

> *"There has been more resistance recently… and this has been partially because of spending priorities."* (Commissioning Body)

Recent experience of Sciencewise projects has raised awareness of the potential of dialogue for one commissioning body, the HRA, and changed the way in which they identify who they should consult with when developing policies. The HRA appears to be more prepared to provide internal funding for public dialogue initiatives. Whilst it is difficult to attribute the HRA's increased commitment to public dialogue solely to Sciencewise, the experience of Sciencewise funded projects has had a

[34] http://www.hfea.gov.uk/docs/Third_Mitochondrial_replacement_scientific_review.pdf, last accessed 23 January 2015

[35] http://www.opm.co.uk/blog/leap-seconds-a-public-dialogue/, last accessed 23 January 2015

beneficial effect, not least in the authority's increased willingness to involve the wider public in dialogue in addition to talking with patient groups.

For Commissioning Bodies who are new to dialogue, it is clear that Sciencewise has had a positive influence on their attitude toward the use of public dialogue:

> *"The [commissioning body] is still finishing the current project but knowing the process, the second one should be much easier. It has given them confidence and they now know the procedure of obtaining Sciencewise support* (Commissioning Body)

> *"Without Sciencewise's support, the project would not have been carried out. The expertise is important because dialogue is not simply communicating with the public. It can be very dangerous to think we are going to just go and tell the public this because we are not telling the public something, we're asking the public their opinion"* (Commissioning Body)

As also indicated by the comments above, the expertise of Sciencewise is generally sought after, even those commissioning bodies that felt confident in carrying out dialogues independently still felt that the expertise from Sciencewise was very desirable. However, it is clear that many possible motivations exist for departments approaching Sciencewise for its support.

The change in attitude towards public dialogue could also be influenced by other motivations. When asked why departments use public dialogue, several interviewees responded that the use of public dialogue is used as a risk management measure. For example, several interviewees from Commissioning Bodies noted that the threat of judicial review is also motivation for the use of public dialogue, one of whom also expressed scepticism at the degree to which there has been a real change within Government in terms of understanding the value of taking public views into account.

5.3.4 Number of staff trained in public dialogue and engagement

A strong indicator of structural and cultural change relates to the extent to which there is an increasing pool of individuals who are trained in public dialogue. This indicator relates to the number of people from departments and commissioning bodies who have experience of commissioning public dialogues due to their involvement with Sciencewise. In addition to in-house capacity, the availability of external contractors to carry out public dialogue is explored under this indicator. Their availability can also be used as a measure of the "appetite" for dialogue from commissioning bodies. It also reflects the extent to which the required infrastructure is in place to allow policymakers to use dialogue easily and effectively.

The supporting evaluation questions are:

- Is there a greater pool and diversity of skilled people able to design, deliver and evaluate public dialogues?

- How able and willing are those who have been involved in a Sciencewise project to take forward more public dialogue as a result? Do they carry out subsequent engagement by themselves? Do they encourage others in their department to engage in more public dialogue? Have any departments established protocols or systems setting out when engagement should take place and how?

The pool of departments engaging with Sciencewise has increased in the current period in comparison to the past (as discussed in Section 4.3) and so the number of staff with increased

capacity to commission dialogues could be expected to have increased; this is indeed supported by the views expressed by some commissioning bodies.

However, the number of people involved in commissioning dialogues at each department is small; generally only one or two people at the commissioning body are deeply involved in the process of getting the dialogue "up and running". This means that the number of people who have received significant experience of dialogue and mentoring by the DESs (through on-the-job training or specific capacity building sessions) is approximately the same as the number of dialogues projects funded by Sciencewise: around 20-30 policymakers or perhaps a few more, where there have been multiple project managers over the course of a single project. Of course, other individuals involved in the dialogue project (evidence teams, policy area leads, commissioning partner departments and bodies and the contractors/practitioners facilitating the dialogue) will also experience a raised level of confidence in carrying out dialogue and engagement matters but, as discussed below, it is not simply a matter of gaining sufficient training that is required to develop the confidence to independently commission dialogue projects.

Interviewees have commented on the level of confidence attained by those who have been involved in the process. In three cases - a government department, a research council and agency - significant capacity now exists. In relation to the department, an interviewee noted:

> *"The capacity exists within [department]…. However, this capacity has increased through working with Sciencewise. For instance, individuals from Sciencewise are invited to come into the [department] to hold masterclasses and workshops*." (Commissioning Body)

There is a general recognition within this commissioning body that expertise exists within Sciencewise and it is a pool that the commissioning body draws on if and when appropriate. In contrast, a research council has begun carrying out its own small-scale independent dialogues. The research council has a number of staff experienced in public dialogue and their knowledge has been widened through contact with Sciencewise. For the HRA, the creation of the position of Engagement and Policy Manager is a step towards institutionalising public dialogue for policy development. At this stage, having learned a lot through their involvement with Sciencewise, the HRA would now feel confident in commissioning work directly from contractors.

Even though most other departments are not so confident that in-house capacity exists, no-one who was interviewed said that they had not increased their level of understanding surrounding public dialogue; to quote one interviewee from a Commissioning Body:

> *"The actual process of undergoing the dialogue has helped people understand why it is important, how difficult it is and why you need to plan for it."* (Commissioning Body)

Indeed, the process has stimulated one department to seek additional training from private contractors. Others have received additional training through Sciencewise capacity building activities.

In addition to providing "hands on" training or capacity building in public dialogue, Sciencewise provides training through other means such as:

- Webinars (and the Community of Practice events)
- Face to face guidance and mentoring by DES throughout the project
- Thought leadership articles – these introduce new thinking about dialogue practice

Webinars are hosted by Sciencewise to discuss the outcomes of specific dialogue projects or to summarise Sciencewise's activities (e.g. "The Best of Sciencewise's Research" report and associated

webinar). In the past these were also linked to the Community of Practice events. To date there have been 10 webinars since 2013 (5 in 2013, 5 in 2014, see Section 6.3.9). These webinars are attended by approximately 30-50 attendees per webinar, but the number is increasing according to a Sciencewise team member. Some respondents from commissioning bodies have indicated that these are useful for them in order to keep up to date with the latest developments.

> *"Webinars are useful to find out what other people think and it's easier to hear about the work rather than read the report, particularly for projects that are not directly relevant [to the interviewees work]. It's good to be able to ask questions and to do a bit of networking by finding who else is having issues or interested in general."* (Commissioning Body)

Many of the interviewees were aware of the webinars happening but very few took part. This is partially because these interviewees were already involved with Sciencewise activity and thus did not feel these were absolutely necessarily in the face of extant time pressures:

> *"There isn't really an incentive to attend these ……. people who attend them already have a personal interest in dialogue. Training [is] a nice thing to do but in practice it is hard to find time to do core training, let alone additional events."* (Commissioning Body)

> *"[The interviewee is] unconvinced about the usefulness of webinars. The people involved are relatively few and there's the question: Are they targeting the right people? It seems that the people attending webinars and community of practise events are not policymakers or decision makers but dialogue practitioners. There's something getting in the way of getting the right people to attend: either time or the IT facility to get involved. The people who engage are those who need to and if you don't need to, then it's an optional extra."* (Commissioning Body)

When questioned about the availability of external contractors to carry out public dialogue, the views expressed during the interviews varied greatly by the interviewee's affiliation. For most commissioning bodies, there was no real concern about the lack of availability of contractors or practitioners to carry out public dialogue. When tendering for the dialogues, there was typically more than one bidding contractor for each project. For one project, 72 expressions of interest had been received with 8 "detailed" bids submitted. Where numbers were given by interviewees, a more typical number of bids was a "few" or "3". However, in one case only one bid was received through an existing departmental framework contract. This is backed up by information received from Sciencewise that an average of 3.7 tenders are received per project as shown in the Table 5-4 below[36]. The table also shows that approximately 1-3 tendering organisations bid per project in any given year and with one new dialogue contractor entering per eight projects commissioned[37].

[36] 86 tenders received for 23 projects: 86/23 = 3.7 tenders per project

[37] Based on data in Table 5-4: 3 successful tenders made by new organisations across 23 projects: 23/3 = 7.7 projects per new organisation.

Table 5-3: Number of projects and contractors tendering for Sciencewise supported dialogues					
Year of Project approval	**Number of projects**	**Number of tendering organisations***	**Number of tenders received**	**Number of successful organisations**	**Successful tendering organisations new to Sciencewise dialogue delivery**
2012-13	7	17	29	4	1
2013-14	11	22	36	6	2
2014-15	5 (tendered to date)	16	21	4	0
Total 2012-2015	**23**	**36**	**86 (across 23 projects)**	**7**	**3**
* some providing multiple tenders - total in period is not sum of organisation in each financial year. Source: SW Team Members (received 31 December 2014)					

In terms of capacity, the availability and expertise of private sector practitioners was not a concern for most departments as evidenced by the remark: *"There was definitely enough of a choice of contractors. Three were interviewed and they were all really good."* (*Commissioning Body)*

However, the level of experience required and expected was considered to be high by DES's but there were concerns about an "ever dwindling" pool of experienced contractors.

> *"The current body of contractors are all very experienced and capable of facilitating clear dialogue"* (Sciencewise team member)
>
> *"The UK is not awash with the expertise that can carry out public dialogue. So it could be expected that the same sort of people will come forward."* (Commissioning Body)
>
> *"The larger agencies tend to send their experienced people to interview, then give out the work to vey junior people who simply don't have the gravitas and experience to ask often quite famous people to turn up to oversight groups and events. Also it feels sometimes like there is a "way of doing things" which is off the shelf for some of the larger agencies – understandable to keep lots of people giving a similar quality of service.*" (Sciencewise Team Member)

Based on the above discussion, one can conclude that there is a greater pool and diversity of skilled people able to design, deliver public dialogues than existed previously in some of the commissioning departments. The extent to which the commissioning bodies would be able to take forward dialogue themselves is more limited, however, with only two out of the 18 commissioning bodies interviewed indicating that they could. Similarly, from the interviews, it would appear that only a few (if any) commissioning bodies have established any kind of protocol or system setting out when engagement should take place more; instead there is more of an awareness of the potential value of dialogue and how to plan for one.

A notable Sciencewise event on public dialogue was held in Whitehall in conjunction with the Open Policy Making group at the Cabinet Office[38]. The linkage between the Open Policy Making group at the Cabinet office and Sciencewise has led to several impacts relevant to this interim goal. This was an important event in terms of the potential for structural and cultural change. It was attended by 50 policymakers from various departments. These included previous users of Sciencewise as well as

[38] See: http://www.sciencewise-erc.org.uk/cms/open-policy-making-and-public-dialogue/

attendees from departments that had not previously held public dialogues: Home Office, Defence, Science and Technology Laboratory, Ministry of Justice, Department of Work and Pensions. According to the Sciencewise team, a total of 200 civil servants received "introductory training" in public dialogue in 2014.

In addition, as a result of the interaction between Open Policy Making and Sciencewise, there is an opportunity to increase the number of people trained in public dialogue or at least to raise the awareness of public dialogue across a greater part of the civil service. Sciencewise has recently announced a series of 10 training sessions to run from February to September 2015. Of these 10 sessions, 5 are as part of Civil Service Learning Fast Stream or Policy Directorates, 4 sessions for Department of Health and BIS policy profession and one webinar[39]. According to the Sciencewise team there are a further 3 training events also planned. This development is a possible step change in the programme's capacity to instil cultural and structural change amongst policymakers but it is of course too early to tell how the civil servants receiving the training will implement it.

Thought leadership articles

Sciencewise has commissioned a number of "thought leadership" articles. These pieces of writing are intended to lead "thinking on how to embed meaningful public dialogue into policymaking on science and technology"[40]. Some external articles were commissioned by an open call for papersand funded to a level of £5,000 per paper. They are published on the Sciencewise website and are frequently followed up by blog posts to stimulate further discussion and to follow-up on comments made by external commentators. Sciencewise has more recently[41] moved away from these to some extent, instead focusing them on the results of Sciencewise supported activities, rather than on generating new research or thinking.

A total of 13 thought leadership articles have been published in 2012-2015:

- pre-2012: 9 articles
- 2012: 1 articles
- 2013: 5 articles
- 2014: 7 articles.

It is not always apparent how widely these are read but based on the available statistics on usage of the Sciencewise website as a whole (as described below in Section 6), only a limited wider audience accesses these articles. This is backed up by the total downloads for the articles, which number in the low hundreds after a year for the more popular articles (e.g. 260 downloads in total for "Which Publics? When?" from June 2013 to June 2014[42]. In addition these are distributed by email reaching a further few hundred, as described in Section 6). Despite the relatively small readership, some noticeable impacts have been identified, implying that these articles do at least reach the correct audience and receive positive feedback based on comments referred to in Sciencewise internal reports.

An example is 'The best of: Sciencewise reflections on public dialogue' report, which presents insights gained from dialogue projects over the past ten years. The report itself and the lessons

[39] See: http://www.sciencewise-erc.org.uk/cms/Training-events, last accessed 25 January 2015.

[40] See: www.sciencewise-erc.org.uk/cms/our-thinking-2/

[41] As described in February 2014 Steering Group minutes, available at http://www.sciencewise-erc.org.uk/cms/assets/Uploads/Meetings/SW-SG-February-2014-P02-Strategic-priorities.pdf, accessed 02 March 2015

[42] See: "Sciencewise Impacts Evidence 2012-2014"

carried inside have been recognised in two blogs from individuals within the public engagement community:

•"Sciencewise: 10/10 see you again – I sincerely hope so!" (8 September 2014) by Simon Denegri (Chair of INVOLVE)

•"Engaging wisdom from Sciencewise" (15 September 2014) by Steven Hill (Head of Research Policy at the Higher Education Funding Council, a non-departmental public body of BIS)

In addition, evidence provided by the Sciencewise team suggests that the report has been circulated among several key audiences, such as the Association of Medical Research Charities; the Government Science and Engineering network; the Welsh Government and Policy Profession (an informal network of civil servants who work in, or are involved with, the formation of policy for government).

5.4 Issues identified and conclusions

The evaluation carried out in relation to this interim goal has considered to what extent the Sciencewise programme's initiatives have been able to raise awareness of dialogue as a technique to support policymaking and has been able to increase the internal capacity of departments to effectively use it, on their own or with Sciencewise's support.

The indicators above (as well as those linked from Section 4)provide a summative description of the activities of Sciencewise over the 2012-15 period. They indicate that there has been some success so far in instilling cultural change but that in this final year of the period, Sciencewise has responded to new opportunities offered by a changing political context. The latest developments are early indications that the programme will have further success in helping raise awareness of dialogue methods amongst policymakers, by both top-down and bottom-up methods. Thus far, cultural change due to Sciencewise is limited to those who have carried out public dialogue already and their immediate peers although the latest developments could also mean that the capacity of policymakers to be at least aware of public dialogue (and thus to be able to consider its use) is set to improve. Sciencewise now has an opportunity to reach wider in terms of awareness and deeper in terms of the understanding of public dialogue amongst the policymaking profession. The main findings identified are:

- Structural (based mainly on literature findings):
  - Sciencewise is now offering more "products" to policymakers; social intelligence in particular
  - New departments (and policy areas) are considering the use of public dialogue on Science & Technology issues (see also Section 4).
  - The demand for SW expertise remains high and motivation for co-funding is a lower priority for some; however (see also Section 4)
  - Sciencewise project co-funding remains a significant enabler for many departments (see Section 4)
  - Some research councils and some departments are confident enough to carry out some of their own dialogue without SW support
  - The partnership with Open policy making has led to several impacts – greater awareness of Sciencewise within the Cabinet Office and wider in Whitehall

  - A new training programme – currently there is a limited push to consider the use of public dialogue; Sciencewise has an opportunity to strengthen the understanding of the place of dialogue alongside engagement

- Cultural (based mainly on interview findings):
  - Lack of awareness of public dialogue among policymakers and civil servants remains a crucial barrier to its use and limits the impact that Sciencewise is able to deliver
  - Past Sciencewise users are becoming more likely to recommend or "champion" the use of public dialogue to their colleagues
  - Past Sciencewise users becoming more likely to consider the use of public dialogue when considering policy options.

6 Interim Goal 3: Creating evidence – Demonstrating effective dialogue processes

6.1 Introduction

This evaluation of this interim goal seeks to determine to what extent Sciencewise has been successful in demonstrating effective dialogue processes. The analysis considers how Sciencewise's own evaluations are used and how they are able to demonstrate evidence of effective dialogue. This includes carrying out the dialogues and then ensuring that these are documented adequately so that the learning from any activities is able to be retained and further used where necessary. It also covers the range of other activities undertaken by Sciencewise to support the dissemination of information on public dialogue.

6.2 Activities undertaken in support of creating evidence of effective dialogue processes

In terms of creating evidence, the main activities carried out by Sciencewise (and not discussed above) include:

- Oversight and publication of dialogue project reports
- Oversight and publication of independent evaluation reports for each of the completed projects
- Revisiting each project annually to identify evidence of longer term learning and other impacts (as part of programme evaluation), and
- Preparation of project case studies.

In addition, Sciencewise has carried out a series of programme level evaluations in the past:

- Activities up to 2010 (although outside this evaluation timeframe, it is built upon in 2013):
  - An evaluation of the Sciencewise programme including full cross-project analysis of learning and impacts from the first nine public dialogues and their impacts covering period up to 2010, published 2011
  - Annex showing impacts (including some longer term impacts) project by project
- activities up to 2012:
  - An interim evaluation of the Sciencewise programme, focusing on the ten new projects and re-visiting the earlier projects to identify longer term impacts covering the period from July 2010 to November 2012; published in 2013
  - New annex showing the impacts (including policy impacts) of the new projects, project by project.
- activities up to 2013-14:
  - Further evaluation research to identify longer term project impacts and programme impacts – circulated internally (including BIS) June 2014
  - Further Programme Evaluation Update – July 2014 (DRAFT)

Case study reports for each of the dialogue projects are published at the end of a dialogue project. These 4-page studies summarise project and evaluation findings, the policy impacts and personal impacts as stated by the participants. These are usually produced within two months of completion of the evaluation reports, to share findings quickly. These often also include some "soft" impacts on

the policymakers, stakeholders and the public participating in the actual events as these impacts should be quite immediate. These are described using the TAMI typology in this evaluation. At this stage in time, longer-term impacts are not apparent; for the Stratified Medical dialogue project, for example: *"The benefits of this is not today or tomorrow, but in 18 months' time"*[43]. Often, it is noted that there is a delay between the conclusion of dialogue projects and in their impacts or outcomes in any policy documentation. Documenting these "hard" impacts is more challenging and firm evidence on the impacts of dialogues is frequently sought from Sciencewise. For this reason, Sciencewise periodically revisits projects and activities to look for longer-term impacts (using the documentation described above). The internal programme evaluations have sought to revisit projects after a longer timeframe[44] in terms of looking for evidence of impacts even from before 2012. For example, the BBSRC dialogue on Synthetic biology is cited by the internal "Impacts Evidence report" in 2014. Indeed BBSRC itself tracks longer term impacts from this activity, as shown on their website[45], partly using data from Sciencewise evaluation follow-up (according to Sciencewise). Very recently, Sciencewise's Impacts & Accolades reports also track impacts arising on a monthly basis. These have shown, for example, that the Geoengineering dialogue from 2011 continues to have impacts and these are being fed into Sciencewise's evidence base.

As noted in Section 4.2 above, for the 2012-2015 period, there have been 27 approved and active projects across 18 different commissioning bodies. Dialogue reports have been published for all of the 15 dialogue projects completed in this period. Out of these, evaluation reports are available for 14 and project case studies have been prepared for nine. These are shown in Table 6-1, below. The reports are published on the Sciencewise website when they become available. In most cases, the commissioning body also distributes the dialogue reports on their own websites.

[43] http://www.sciencewise-erc.org.uk/cms/assets/Uploads/Project-files/CS-Stratified-Medicinefinal.pdf, accessed 25 January 2015

[44] Sciencewise Impacts Evidence 2012-2014, June 2014 and Sciencewise Evaluation Update 2014, July 2014 (DRAFT)

[45] http://www.bbsrc.ac.uk/news/policy/2013/130515-n-synthetic-biology-dialogue-impacts.aspx, accessed 26 January 2015.

Table 6-1: Status of public dialogue project reports (complete projects only)					
Commissioning Body	Project	Reports Published			Year completed
		Dialogue Report	Evaluation report	Case study	
Defra	Citizen dialogue on bovine TB	✓	✓ Feb 2015		2014
Environment Agency (EA)	SWMIs	✓	✓	✓	2014
BBSRC	Bioenergy distributed dialogue	✓	✓	✓	2014
BBSRC/Rothamsted Institute	Rothamsted	✓	✓		2014
HRA	Patient and public engagement	✓	✓	✓	2013
DECC	Shale Gas	✓	✓		2014
DECC	MRWS Siting	✓	✓ Feb 2015		2014
BIS	Horizon Scanning (using CsAP output)*	✓	✓	✓	2014
BIS and Nesta	Longitude Prize	✓	✓		2014
Cabinet Office	Embedding wellbeing	✓			Nov 2014
HFEA	Mitochondria replacement	✓	✓	✓	2013
Countryside council for Wales	Cambrian mountains – landscape and ecosystems	✓	✓	✓	2013
Medical Research Council	Animal Research Dialogue	✓	✓	✓	2014
Technology Strategy Board (now Innovate UK)	Stratified medicine	✓	✓	✓	2014
CCC	Trajectories for carbon emissions	✓	✓	✓ Feb 2015	2013
*This project also resulted in an academic paper: http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0096480					

In addition to the above project reports and evaluations, evidence summaries have been recently published for the HRA dialogue on Patient and Public engagement[46] and The Cambrian Mountains Natural Wealth dialogue for the Countryside Council for Wales (now Natural Resources Wales)[47]. Sciencewise introduced these evidence summaries in 2014. Two more evidence summaries are in draft form[48].

The evaluation of this interim goal does not seek to duplicate the effort Sciencewise has already put into identifying the impacts of their activities as part of their longer-term impact monitoring and reporting. Instead, this evaluation seeks to investigate how these impacts are viewed by commissioning bodies and how they are reported. In other words, this evaluation will seek to:

- compare the impacts stated in Sciencewise's own impact reports to the answers provided by commissioning bodies in interviews
- investigate how Sciencewise materials (reports, case-studies, social intelligence, thought leadership materials) are used by the various stakeholders who receive them

[46] See: http://www.sciencewise-erc.org.uk/cms/assets/Uploads/Evaluation-docs/HRA-Patient-and-Public-Evidence-SummaryJul13-b.pdf

[47] See: http://www.sciencewise-erc.org.uk/cms/assets/Uploads/Evaluation-docs/Cambrian-evidence-summary-12Mar14.pdf

[48] See: http://www.sciencewise-erc.org.uk/cms/longer-term-impacts-of-dialogue-projects/

- attempt to discover the motivations for carrying out the dialogues – in order to understand what commissioning bodies are hoping to gain from the dialogues, and
- what type of outputs are sought from Sciencewise, in order to make best use of the dialogue; to provide best value for money.

6.3 Identified outputs and impacts

6.3.1 Approach

The Evaluation Plan identified the indicators set out in Table 6-2 to be used as metrics for assessment of the degree to which Sciencewise activities have been successful in supporting this interim goal. The evaluation questions used in the interviews in relation to this interim goal are shown in Table 6-3.

Table 6-2: Indicators for Creating Evidence - Demonstrating effective dialogue processes
Indicators
Number of times outputs from PD referenced or cited in policy documents
Existence of and number of participants in networks established and/or supported
Changes in activities over time
Approaches to SW for novel types of dialogue activities
Programme management data
References to SW activities in other newsletters, blogs, etc.
Hits on SW website, frequency of presentations and other SW events

Table 6-3: Evaluation questions relating to Creating Evidence of effective dialogue processes
Has successful delivery of dialogue processes led to clear incentives for Government departments to make greater use of public dialogue?
How has the use of dialogue processes changed and to what extent is their use being publicised by government?
To what extent are the results of public dialogue accepted as a valid form of evidence for policy making?
To what extent have the activities carried out by Sciencewise changed to meet shifting requirements of Departments?
Are the activities being undertaken by Sciencewise the right ones? Are they adequately focused on delivering evidence and learning? How have they changed over time in response to the changing needs of policy makers?
Are some activities more effective than others in delivering the types of evidence and learning required by Departments and other public bodies?
How successful has the governance of the programme been, including the role of project commissioning bodies, citizens and other key stakeholders?
How does Sciencewise monitor its own success?

Where evaluation questions are covered by an individual indicator, the analysis of the individual evaluation question appears under the appropriate sub-section below. Where the same interview questions have provided evidence for multiple indicators, these are repeated for each indicator where they play a part.

We present below our findings in relation to the different evaluation questions with regard to both of these aspects and Sciencewise's role in generating change.

6.3.2 Number of times outputs from PD referenced or cited in policy documents

A number of references have been made to public dialogues supported by Sciencewise both in the present and previous programme periods[49] and these are covered extensively in their past programme evaluation reports. In relation to the current period, references have been made to a number of projects in both policy and department documents.

The main references to these projects alongside impacts tracked by Sciencewise's internal reporting are presented in Table 6-4 below.

Table 6-4: References to PD in policy or department documents

Project	Policy References (according to Project Case Studies)	Sciencewise's internal impact tracking (Impacts occurring Nov 2014 to January 2015)*
Animal Research	Dialogue is referenced in the Concordat's associated guidance document	
Cambrian Mountains	Dialogue findings are referenced in the White Paper on the Environment Bill (Wales)	One of the stakeholders involved in the dialogue hosted a day in July 2013 for the Welsh Government's natural resource management department, using the dialogue report as back up. The project was also used at an Ecosystems Knowledge Exchange Network meeting in Manchester in December 2013. A stakeholder day for the Cambrian Mountains Initiative on 7 November 2013 was attended by the Minister, who referenced the project.
Patient and public engagement	Dialogue findings are referenced in a Select Committee's report (September 2013), The HRA response to the Select Committee's report (October 2013) also refers to the dialogue and its findings, and explains that the dialogue has informed the HRA's transparency strategy. The Government's response to the Select Committee's report (November 2013) specifically referred to the need to address the issue of public suspicions of the pharmaceutical industry, and the work to make patient information sheets more user friendly.	On 28 June 2013, the Chief Medical Officer (Dame Sally Davies) announced that the Government (Department of Health) had decided that "Innovative IVF-based techniques could be made available to patients to help prevent serious mitochondrial disease in the UK". The announcement included specific reference to the public consultation and its conclusion of support, "subject to strict safeguards and careful regulation".

[49] See, for example: O'Riordan (2014): Innovation and Risk Report, 2014.

Table 6-4: References to PD in policy or department documents		
Project	**Policy References (according to Project Case Studies)**	**Sciencewise's internal impact tracking (Impacts occurring Nov 2014 to January 2015)***
Mitochondria replacement	Dialogue referenced in the HRA report 'Transparent Research', published in May 2013. Dialogue referenced in draft regulations presented before the Government in December 2014.	On 25 June, there was a debate in the House of Commons during which the Parliamentary Under-Secretary of State for Health (Anna Soubry) described the consultation on mitochondria as being "In collaboration with Sciencewise, which has a key role in helping the public to understand complex scientific issues, the HFEA took many different approaches to ensure that it gathered public views on the issue", and the HFEA report included "the outcome of its public dialogue". She reported that the HFEA had advised the Government that "there was broad support for mitochondrial replacement being made available to families at risk of passing on a serious mitochondrial disease" and that it also advised that "if treatment were to be authorised by Parliament , it should be under certain conditions such as its being available only in licensed clinics"
Water Catchment Planning	Dialogue findings were incorporated into Defra's policy framework "Catchment Based Approach: Improving the quality of our water environment – A policy framework to encourage the wider adoption of an integrated Catchment Based Approach to improving the quality of our water environment", which was published in May 2013.	Richard Benyon, Minister for Natural Environment and Fisheries, said, at a CIWEM / Defra conference on The Catchment Based Approach in February that the Catchment Change Management Hub was "an excellent example of how we can work collaboratively to share good practice' and that the 25 catchment pilots had made "tremendous progress" in a relatively short space of time. The learning from the project has also been disseminated more widely, including being used as an example of best practice in the Nexus Dialogue on Infrastructure Solutions for Water, Energy and Food, which is a joint initiative between the International Water Association (IWA) and the International Union for the Conservation of Nature (IUCN)

Table 6-4: References to PD in policy or department documents		
Project	**Policy References (according to Project Case Studies)**	**Sciencewise's internal impact tracking (Impacts occurring Nov 2014 to January 2015)***
Managing Radioactive Waste Safely (MRWS) otherwise known as Geological Disposal Facility	Government's response to GDF siting consultation refers to "deliberative workshops" held alongside the formal consultation process. The accompanying White paper does not refer to "dialogue" or "deliberative" work, instead referring to "open public and stakeholder engagement". The dialogue reports themselves are not directly referenced. Nevertheless, the outputs from the workshops are considered in specific sections and this is highlighted in the evaluation report. Both reports were published in July 2014 with the evaluation report published Feb 2015.	Reference to the project in Ipsos MORI Social Research Institute '*Understanding Society*' periodical focused on Open Policy Making and Democratic Renewal, December 2014. The project is described as follows: "DECC worked in partnership with Sciencewise to commission a public and stakeholder dialogue to run in parallel with the consultation". The article concludes by saying "*This project demonstrates that this kind of public dialogue is one helpful tool to improve and open up policy making, even on technical topics*."
Source: Communication with the Sciencewise programme and Case Study Reports, available: http://www.sciencewise-erc.org.uk/cms/dialogue-project-case-studies/ (accessed 22 January 2015); *MRWS:* https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/332886/Government_response_to_GDF_siting_consultation_FINAL.pdf, accessed 22 January 2015 **Source: Sciencewise's internally published evidence summaries and drafts for November, December 2014 and January 2015 provided by email.*		

It should be noted that a number of projects in the current period are currently on-going or have recently just been completed and thus the results from such projects may take time to feed into various policy documents. Furthermore, some information in the table is taken directly from those projects with an associated case study report, as these have generally had a long enough time for significant impacts to become apparent already. Further impacts could be expected with a longer time frame but the Table 6-4 already shows that dialogue findings have fed into different policy documents and, more importantly, a draft regulation (in the case of the HRA Patient and public engagement dialogue).

The types of impact that can be expected from a public dialogue project vary with both the timing of the policy and the amount of time that has elapsed during the project. The model developed by Macnaghten and Chilvers (2014) and applied in Section 2.2.7 above relates primarily to the impacts under 'Policy Aspects' category of the TAMI typology. For example, initialising actions can be considered as "hard" impacts because they are more likely to be mentioned in policy documents (e.g. those manifested in Table 6-4, above). They also rely on a strong policy link associated with the topic, surrounding a pending decision area and so downstream dialogue projects could be expected to result in these impacts. Conversely, projects that are further upstream are less likely to result in "hard" policy impacts and are more prone to fostering "soft" impacts such as 'raising knowledge' and 'forming attitudes/opinions'.

The individual project evaluation reports (and case studies) provide further descriptions of the "soft" impacts on the commissioning bodies (policy makers) arising from individual dialogue projects. These impacts are summarised in Table 6-5 below[50]. In addition to these impacts, all evaluation

[50] The evidence for the allocation of impacts is shown in Annex 3 – Typologies.

reports make it clear that the dialogues have impacts on the public participants and stakeholders who take part in the workshops. These particularly concern personal learning ('Raising knowledge') and 'forming attitudes/ opinions' but as the objective of dialogue is not to carry out public awareness raising, these impacts have not been described in this evaluation.

Table 6-5: Project impacts mapped to the TAMI typology (based on evaluation reports, where available)

Project	Policy timing model	Impact type		
		Raising Knowledge	Forming Attitudes / Opinions	Initialising Actions
Completed projects with evaluation reports published				
Horizon Scanning (using CsAP output)*	Upstream	**Social mapping**	**Agenda setting; Mediation**	**New decision making process**
Stratified medicine	Upstream		**Mediation**	**New decision making process**
Longitude Prize	Honest broker			**Decision taken**
Mitochondria replacement	Honest broker		**Re-structuring the policy debate**	**New decision making process; Decision taken**
Animal Research Dialogue	Honest broker		**Agenda setting; Re-structuring the policy debate**	
Bioenergy distributed dialogue	Honest broker	Information on how dialogue findings were used not available for dialogue project evaluators at time of reporting – not considered in this analysis of impacts		
Patient and public engagement	Honest broker		**Agenda setting**	**New decision making process; Decision taken**
Cambrian mountains	Honest broker/ Downstream			**New decision making process; Decision taken**
SWMIs	Honest broker/ Downstream	**Social mapping**		**New decision making process**
Rothamsted	Downstream	**Policy analysis**	**Re-structuring the policy debate**	
Shale Gas	Downstream	**Social mapping**		
MRWS Siting	Downstream	**Social mapping**	**Mediation; Re-structuring the policy debate**	**New decision making processes**
Citizen dialogue on bovine TB	Downstream	**Social mapping**	**Mediation**	
CCC	Downstream	**Social mapping**		**Re-framing of debate; Decision taken**

Grey highlighted rows indicate projects where hard policy impacts have already been described.
Source: based on interpretation of evaluation reports, see Annex 3 – Typologies for further details.

The table above shows the different types of positive impacts arising from each of the projects as described in the evaluation and case study reports. Given the small number of projects in each of the models, it is not possible to ascribe a trend as to the types of impact observed with regards to policy timing. However, the following observations can be made:

- 7 out of the 13 projects influenced the development of new decision making processes – more commonly this impact was around the recognition of how public dialogue or how public engagement could help remove policy barriers

- 6 projects resulted in raised knowledge through social mapping i.e. the nature of conflicts made more apparent for the commissioning body
- 5 projects appeared to feed directly into policy decisions. However, in these cases the public dialogue findings largely agreed with the commissioner or expert viewpoints and so it is not clear what impact would have been apparent had there been a disagreement.

In some cases, the evaluation reports indicated that limited impacts could be observed or would be unlikely to occur due to the specific design of the dialogues used in each project. For example, the evaluators of the experimental Bioenergy Distributed Dialogue state that they were not able to report on impacts effectively because the commissioning body did not publish how the outputs were used until after the evaluation was published. This doesn't mean there are no impacts at all; there was significant learning in terms of showing a different approach to public dialogue for dialogue practitioners and for the commissioning body in particular. However, it does mean that the project was unable to demonstrate the effectiveness of the dialogue process to the full extent. This is particularly important, given the "experimental" nature of that particular dialogue project.

For the Shale gas and Bovine TB dialogues, the project evaluators noted that the design of the dialogues meant that the current policies being pursued by the commissioning departments were not open for discussion during the dialogues; this meant that some learning of public attitudes/opinions through social mapping could have been hindered. On the other hand, the design of the dialogue helped direct the discussion to areas where their views could still have influence on future policy directions thus reducing the risk of purely issue advocate dialogues.

The information for this indicator is largely based on literature review of available documentation. Additional information relating to this indicator has been gathered from interviews. The purpose of interview information in this case is to provide insights on why PD is not necessarily referenced in policy documents. In support of this aim, the following evaluation questions were discussed in interviews:

- How had the use of dialogue processes changed and to what extent is their use being publicised by government?
- To what extent are the results of public dialogue accepted as a valid form of evidence for policy making?

How has the use of dialogue processes changed and to what extent is their use being publicised by government?

The views expressed during interviews from academics/contractors, Sciencewise team and commissioning bodies suggested that the visibility of Sciencewise is low but the use of dialogue has improved over time:

> "*On the whole departments do make an effort to publicise the reports*" (Academic/contractor)

> *"Beyond Sciencewise's own work, and work by the BIS Science and Society team, not sure that the use of dialogue processes is publicised much at all by government - but not sure that we would expect that?"* (Sciencewise team member)

> *"SW is not very well publicised but I would now go "look at Sciencewise" but a lot of people won't have heard of them"* (Commissioning body)

"Reports are generally published (and publicised) on the website and shared with particular interested individuals, especially with participants both public and stakeholder." (Commissioning body)

However, many responses from departments did indicate in instances where the findings from the dialogues had been incorporated or influenced a policy document. In 2013, DECC's MRWS dialogue project was carried out as part of a wider consultation process to review the process on the siting of a geological disposal facility for radioactive waste. The government response to the consultation mentions the use of the "deliberative workshops" during the consultation (as shown in Table 6-4 above) but no direct reference is made to the dialogue report[51]. This example is typical of the government reports regarding policy areas where dialogue has been a part of the policy development. However, the evaluation report itself[52] highlights that several key findings from the workshop were considered within the White Paper[53] and clearly maps how these findings influenced each of the relevant sections within the paper. Furthermore, the evaluation report states the dialogue process had a clear influence on how the paper was written and presented (i.e. by making it easily understandable for lay people). The present evaluation team felt that this is good example of how to present policy impacts of dialogue.

To what extent are the results of public dialogue accepted as a valid form of evidence for policy making?

The MRWS dialogue, described above, also hints at how the evidence from "deliberative events" is perceived by Government. For instance, the government response states that *"Consultative or deliberative events would be a more interactive means of addressing the complex issues and questions raised by a GDF development, but the practical details of such an approach would need much further work and agreement if they were to credibly support a local process of community representation"*. This view indicates that Government is aware of the potential benefits but also of the potential practical limitations in terms of the "evidence" it produces. This is something that was acknowledged during the interviews by the Sciencewise team members and there is clearly an on-going debate about what:

*"Very little consensus within Sciencewise on what exactly public dialogue is and what it isn't. Most people have come to accept that the public dialogue work driven by Sciencewise is a kind of social research." (*Sciencewise team member)

Another commented that contractors and departments prefer to deal in evidence based on numbers and this presents a problem for gathering evidence from public dialogue:

"The issue is that PD does not generate numbers but its evidence is in the thoughts invoked and the arguments that are presented as a result." (Sciencewise team member)

In terms of the PD supported by Sciencewise, the evaluation respondents reported that that the outputs of public dialogue were useful in terms of policy making. It was noted that the findings from public dialogue were particularly useful in allowing departments to identify areas of knowledge and attitudes that were previously unknown to them. In addition, a number of respondents highlighted

[51] This is published alongside the "feedback" received on the review of the consultation outcome page: https://www.gov.uk/government/consultations/geological-disposal-facility-siting-process-review, accessed 26 January 2015

[52] See: http://www.sciencewise-erc.org.uk/cms/assets/Uploads/GDF-evaluation-report-final.pdf

[53] See: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/332890/GDF_White_Paper_Final.pdf, accessed 26 January 2015.

that public dialogue has advantages over other forms of engagement, with particular reference being made to surveys. For instance, several respondents commented that the information gained by public dialogue can be used to counter the biases that may be present in some opinion polls (e.g. organised campaigns from pro or anti groups), this could also be interpreted as an impact of social mapping (structure of conflicts made transparent') or mediation ('blockade running') according the TAMI typology. It was also noted that in one project it was clearly visible that respondents to the online survey had extensive knowledge of the subject matter (i.e. the 'usual suspects') - something that public dialogue helps to avoid by including participants with different backgrounds and interests and by helping reach public participants who hold entrenched views.

There was also a broad range of opinion regarding the representativeness of dialogue findings presented by the interviewees. A proportion of respondents felt that the use of small groups at a single period in time could hamper the validity of public dialogue as a form of evidence for policy making. However, this viewpoint was not shared by all respondents and there were suggestions that the scaling up of dialogues has gone some way to improving the representativeness of the process, despite this being something that is not being sought by the Guiding Principles of SW-funded dialogues[54]. This issue is also described in the independent dialogue project evaluations. For example, the Longitude project evaluation states:

> *"Committee members and some Nesta staff raised issues about the credibility of the dialogue findings given the small sample size for the dialogue-- there were seen to be too few public participants with insufficient social and geographical diversity"*[55]

Nevertheless, this topic remained a recurrent theme throughout the evaluation and was highlighted as an area that could be improved upon to give the programme a solid foundation in terms of evidence making.

6.3.3 References to Sciencewise activities in other newsletters, blogs, etc.

As highlighted throughout this evaluation, Sciencewise's activities have been referenced through a variety of media. For instance, as discussed in Section 5, Sciencewise's activities have been featured on the Open Policy Making blog ten times[56] and by others in response to thought leadership articles. Moreover, the recent wellbeing project is featured on the New Economics Foundation (NEF)[57], Hopkins van Mill[58] and Cabinet Office blogs[59]. Each blog makes specific reference to Sciencewise and its association with the project. While this evaluation has not provided an exhaustive list of each blog that has cited Sciencewise's activities, it does indicate that its activities have been recognised to some extent. Furthermore, in the case of the NEF and Cabinet Office blogs, it indicates that

[54] *"participants do not formally represent their geographic area or discipline"* - Sciencewise Guiding Principles

[55] Longitude Prize 2014 dialogue evaluation, Sarah del Tufo Evaluation Associates accessed http://www.sciencewise-erc.org.uk/cms/assets/Uploads/Longitude-evaluation-Report02-02-15.pdf on 03/03/15

[56] Eight articles in 2014 on various topics covering 2012-2014 activities as well as earlier dialogues by DECC 2050), see: https://openpolicy.blog.gov.uk/; two articles so far in 2015 up to 23 January 2015.

[57] How wellbeing can transform policy making, The NEF Blog, 6 November 2014, accessed at: http://www.neweconomics.org/blog/entry/how-wellbeing-can-transform-policy-making on 26/01/15

[58] Co-producing a public dialogue – By Anita van Mil, Hopkins van Mill Blog, accessed at https://hopkinsvanmil.wordpress.com/2014/11/20/co-producing-a-public-dialogue-by-anita-van-mil/ on 26/01/15

[59] Wellbeing – Continuing the Public Dialogue, Cabinet Office Analysis and Insight Team Blog, 21 November 2014, accessed at https://coanalysis.blog.gov.uk/2014/11/21/wellbeing-continuing-the-public-dialogue/ on 26/01/15

commissioning bodies are going some way to promoting and publicising the findings of the dialogue processes.

Internet searches indicate that Sciencewise's activities are stimulating discussion and discourse within academic circles. Aside from the evidence presented in the various papers and articles cited in the preceding sections of this report; the Sciencewise programme and its work have been referenced in a number of more recent academic work.

A non-exhaustive list includes Williamson (2014)[60], Munck et al. (2014)[61], Lassinantti (2014)[62], Watermeyer (2014)[63] and Chilvers (2014). These pieces indicate that Sciencewise's activities are still relevant within academic discourse as each was published less than a year before the writing of this report. Indeed, there are other academic papers discussing Sciencewise outputs that have already been mentioned in this evaluation such as Macnaghten and Chilvers (2014), though this and others were due to programme activities before 2012. There are also PhD research projects underway focusing on Sciencewise's work, in terms of organisational learning and policy impacts but these are yet to be published[64].

6.3.4 Existence of and number of participants in networks established and/or supported

Over the current programme period, the Sciencewise team have continued to establish and build upon networks within different sectors. Information received from the Sciencewise team shows that from April 2012 to May 2014, a total of 133 new high-level contacts were made[65]. These contacts comprise 96 policy makers, 11 scientists/experts, 1 civil servant, 3 politicians, 2 NGOs, 2 from business, 1 science communicator and 1 dialogue practitioner[66]. In addition to these contacts, the programme has established connections with two new departments: the Department for Communities and Local Government (DCLG) and the Department for International Development (DFID)[67]. In the former of these two departments, the Sciencewise team presented examples of key case studies to a department representative.

Sciencewise also distributes a newsletter digest of recent activities and news to approximately 1,200 subscribers. This is discussed further below in Section 6.3.7.

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[60] References one of Sciencewise's Social Intelligence papers: Williamson, A. (2014). Big Data and the Implications for Government. *Legal Information Management*, 253-257.

[61] Refers to setting up of Sciencewise under heading of "Investments in science and society": Munck, R., McIlrath, L., Hall, B., & Tandon, R. (2014). *Higher education and community-based research*. New York: Palgrave Macmillian.

[62] Refers to Davies, T. 2013, "Transparency and open data" in Mapping the new terrain: Public dialogue on science and technology, eds. S. Burall & T. Hughes, ScienceWise, Expert resource centre: Lassinantti, J. (2014). Public Sector Open Data - Shaping an Arena for Innovation and Value Creation. *Licentiate Thesis*. Printed by Luleå University of Technology, Graphic Production.

[63] Two general references to the Sciencewise programme and one reference to the evaluation of the Big Energy Shift project

[64] "Organisational learning in and around the Sciencewise programme in 2013" Helen Pallett, UEA and *"Has ten years' of public dialogue in the UK had any impact on science policy?"* Melanie Smallman, UCL.

[65] Sciencewise Evaluation Update 2014 (Draft), Warburton, July 2014

[66] The remaining contacts are categorised under other affiliations

[67] Sciencewise team member invited by DFID's Chief Scientific Advisor (CSA) to talk with him to CSAs from BIS and Defra about public engagement

6.3.5 Changes in activities over time and Approaches to Sciencewise for novel types of dialogue activities

This indicator relates to the following evaluation questions:

- Are the activities being undertaken by Sciencewise the right ones? Are they adequately focused on delivering evidence and learning? How have they changed over time in response to the changing needs of policy makers?
- Are some activities more effective than others in delivering the types of evidence and learning required by Departments and other public bodies?
- To what extent have the activities carried out by Sciencewise changed to meet changing requirements of Departments?

A series of activities have recently been funded by Sciencewise that could be described as novel dialogue methods. These include:

- Distributed Dialogues on Bioenergy
- Developing:
  - Food Security - Panel
  - Sciencewise Citizens Panel (replacing the Citizens Group)

Out of the activities that have been completed, varying degrees of "success" have been described. It is accepted by interviewees that the policy impacts from novel activities may be lower because the dialogues are *"more about trialling a particular methodology"* (commissioning body). However, it is seen as important by some commissioning bodies that Sciencewise supports more "experimental" dialogues. This is because they, departments in particular, have limited budgets to spend on trialling dialogue techniques (often, the dialogue is funded through departmental research budgets). This means that they are likely to adopt a conservative approach in terms of what they will undertake; they cannot take the risk that a dialogue will not produce suitable information to assist in their policymaking:

> "*Departments could end up having to spend a lot of time testing different online dialogue systems so perhaps SW could share their experience of the different methods more widely on what works for online engagement. Departments can't take many risks when it comes to testing*." (Commissioning body)

The above indicates that the funding-support offered by Sciencewise is crucial, in terms of the development of novel approaches to PD. Conversely, it may also indicate that with more established deliberative methods, there is a smaller need to provide funding to support dialogue.

The interviews revealed that the Sciencewise programme is engaged in a broad range of activities aimed at delivering the evidence and learning required by departments. In addition to the dialogue project evaluation activities (reporting and wash-up meetings), these activities range from the initiation of public dialogues to the publication of social intelligence pieces on particular issues.

In general, there has not been a significant change in the tools and dialogue and project evaluation methods used to facilitate dialogue projects. Rather, the emphasis has changed. Interviewees felt that the extent to which online tools were utilised had increased but there were differing views about the value of online dialogue tools, most interviewees felt that they had a positive role to play. Two in particular stressed that they are not a substitute for face-to-face contact – as there is a risk of excluding some sections of the public from dialogue activities. Others felt that more could be done

with digital data and engagement. Sciencewise is currently investigating how this is best carried out and so these have not been evaluated in detail[68].

Other comments include the fact that knowledge sharing activities have increased. In this respect, there has been a shift away from *"awareness raising with the public and towards targeted interactions with policy makers"* (Sciencewise team member). This has in part led to a de-prioritisation in the use of public facing tools, such as Facebook. It has also led to webinars focusing increasingly on the experiences of those people who have run PD topics and away from more generic "thought leadership" aimed at academic or dialogue practitioner audiences. In general, Sciencewise is producing less "thought leadership" materials and it has been suggested that what has already been produced is enough for the purposes of the programme.

Social Intelligence

Sciencewise prepares reports on some science and technology issues based on publicly available social science and market research. These "social intelligence" reports are provided to policy-makers to provide information on current public views. They are not intended to replace deliberative dialogue, but could potentially provide a means of identifying where further dialogue may be appropriate and as a way of introducing an element of public views into policy making where there may not be sufficient time to carry out a deliberative dialogue exercise. These are a reasonably new developments, with the first report shown on the website being published in March 2013[69].

- 2013: 5 reports published, and
- 2014 (to date): 6 reports published.

The "Big Data" social intelligence piece is arguably the most influential so far based on the impacts reported by Sciencewise. This piece was downloaded a modest number of times, 87 downloads up to June 2014 but, as described elsewhere in this report, the reports are not simply downloaded but also shared by email to specific individuals. Thus, they are able to have impacts regardless of the number of downloads. Some examples of the impacts identified from this particular social intelligence piece are:

- Briefings by the Parliamentary Office of Science and Technology has referenced[70] and asked Sciencewise team to review their briefings (as reported by SW team and internal reports),
- A tweet from Royal Statistical Society and positive feedback from Office of National Statistics
- Reference in a Cabinet Office briefing
- Secondment of a member of the Sciencewise team into the cabinet office to further consolidate the relationship and to aid in timing of possible dialogues (this also relates to Interim Goal 2)

There has been significant feedback from the interviews on the topic of social intelligence papers. This has been received from both the Sciencewise Programme Board and departmental perspectives. The overwhelming response is positive:

[68] October 2014, Steering Group Meeting Paper: Piloting Digital Techniques: http://www.sciencewise-erc.org.uk/cms/assets/Uploads/Meetings/SW-SG-October-2014-P02-Piloting-digital-techniques.pdf, accessed 6 March 2015.

[69] See: http://www.sciencewise-erc.org.uk/cms/what-the-public-say-3/. Earlier social intelligence reports are also mentioned in a February 2013 Steering Group paper.

[70] For example: http://www.parliament.uk/briefing-papers/POST-PN-468/big-data-overview.

- *"Quite a few of the SW documents are quite a read and not particularly policymaker friendly…The social intelligence reports are useful if time is short."* (Commissioning body)
- *"[SW team members] find the social intel pieces really useful as "calling cards" when meeting people"* (SW team member)
- *"Social intelligence is having more impact than thought leadership articles"* (SW team member)
- *"They are very useful bits of work to get a very quick idea of the publics' views of the topic, but they should be publicised more widely."* (Commissioning body)

From the departmental perspective, the papers may be accepted as an introduction to dialogue, providing a flavour of what can be gained from listening to the public voice. Others, however, have suggested that the papers are "literature-review-lite" and hence may be of limited value to commissioning bodies and even less to academic audiences.

Delivering further learning

The case studies produced by Sciencewise were cited by interviewees as being useful when reporting findings of public dialogue to policy makers:

> *"When advocating SW to departments, the best way to do so has been by using examples from similar areas. One of the most useful here have been the reviews of Research Councils dialogue to look for common themes, to give people confidence as you don't need to start from scratch. Similarly the evaluation [reports] and case studies where relevant"* (Commissioning body)

However, it was felt by some in both the Sciencewise team and commissioning bodies that the case studies could go some way further in promoting dialogue. For example, the case studies, although only four sides long were seen as too long:

> *"If you can't get it all in one-page, you're stuffed. One of the most useful parts is the "Lessons Learnt" section to help overcome the initial caution or scepticism that policymakers can express"* (Commissioning body)

A finding from several of the interviews was that the existing dialogue projects could be a source of further learning, perhaps through meta-analysis, though it was also questioned whether it should be the remit of Sciencewise to carry out this work. Again the research council dialogue review project was used as an example:

> *"In terms of metareview is something that is worth thinking about. The RCUK dialogue review did this to some extent but doing more might be worth thinking about. Time/resources are limited but social back catalogue is vital – good messages still come out and are relevant."* (Sciencewise team member)

Another interviewee felt that:

> *"SW would not necessarily be expected to do meta-analysis of their own work. [This] would be the remit of the departments themselves or academics to do this kind of work."* (Commissioning body)

However, it was also noted that the *"[p]ublications in academic literature for meta-analysis doesn't feedback to policymakers nor to SW itself"* (Sciencewise team member). The evaluation team would suggest it could be worth exploring further how Sciencewise could encourage additional learning by

analysis of any common themes in public views that occur for different science and technology issues, perhaps as an expansion of the social intelligence articles currently produced.

6.3.6 Programme management data

This indicator relates to the following evaluation questions:

- How does Sciencewise monitor its own success?
- How successful has the governance of the programme been, including the role of project commissioning bodies, citizens and other key stakeholders?

Across the respondents, a reoccurring point was that the success of Sciencewise is measured by its impact upon policy making, not just in policy itself. This is reflected in one respondent's view that they would expect all Sciencewise projects to have a policy outcome, as their main purpose is to inform policy. Likewise, another respondent stated that evidence making was a key determinant of Sciencewise's success and that the programme management is continually looking for instances where policy makers show how they have taken into account public opinion. It was therefore clear from the responses that policy impact is a key criterion for the success of the individual projects and the programme as a whole. Although Sciencewise is not directly responsible for how the dialogues are carried out and how their outputs are used, the programme has a responsibility to ensure that the funding is spent in accordance with its principles in the most efficient manner and that the projects are able to showcase effective dialogue processes.

Sciencewise has always had a very strong internal evaluation mechanism and has always (during the current period) required independent evaluations of each dialogue project which are published on the SW website. However, the evaluation or monitoring of non-dialogue activities, such as advocacy and networking has been described as "ad hoc" by more than one member of the Sciencewise team, as the establishment of these activities has developed over the course of the three year programme. All members of the team shared information about impacts and these were collated annually; this has recently been developed into a monthly review (since November 2014) as monthly "Impacts & Accolades" reports mentioned ealier. These have received positive views from a commissioning body during the evaluation interviews.

Visibility of the programme was also seen as a key indicator of success for the programme. Respondents highlighted that the programme is carrying out a number of advocacy activities such as webinars, face-to-face meetings and networking with the eventual aim of raising the programme's profile among policy makers. It was revealed that the results of such activities are recorded in internal monthly reports that are reviewed in management meetings.

On top of improving the visibility of the programme, it was considered important that the programme fulfils the expectations of departments during the dialogue process. It can thus be inferred from the above responses that improving the standing of the programme amongst policy makers, in terms of its reputation and credibility, is a key priority.

Another area of concern was the interaction between Sciencewise and government departments. One respondent felt that individuals within departments were not aware that Sciencewise is a government programme and not an organisation. This meant that they were not aware of the purpose of the programme and what it sets out to achieve. For instance, it was stated that departments are constantly reminded that there are no actual Sciencewise projects, rather projects owned by the commissioning bodies.

For example, one interviewee noted that the governance or management structures of Sciencewise are not easily understood. It is not clear who makes the decisions in the programme:

> "*I've never understood the governance structure at all [with respect to role of BIS, BSA, Involve, Ricardo-AEA, Sciencewise]. This makes it harder to build relationships as you don't know if you're talking to government or a contractor or what*" (Commissioning body)

> "*In the Steering Group meetings, it feels like the members need to push hard to have views acted on, although they are listened to and acted upon in general. It doesn't feel like steering, rather it feels like a seminar. The topics might be interesting generally but it doesn't feel like it helps provide direction for the programme*". (Commissioning body)

> "*The programme feels disconnected from the people delivering dialogue (i.e. contractors). There are no requests for input by the programme. Possibly Sciencewise feels that it doesn't need to ask contractors because it has the experience of the DESs. On the other hand, some external parties may not have enough time and resources to become involved in this capacity.*" (Academic/contractor)

> "*There could be benefits in Sciencewise being aware of the amount of expertise and enthusiasm there is among the contractors*" (Academic/contractor)

Many of the above comments refer to involvement with the Sciencewise programme earlier on in the current period. Very recently, some of the issues of internal communication within Sciencewise have been improved, for example, by the programme board and management team meeting together. This means that the management team are now completely aware of discussions at the programme board. Both the board and management team felt that the separate meetings were not the best use of time and the new arrangement is *"heartily endorsed"* by both.

In addition the recent Theory of Change process has been very well received as a way of improving the strategic thinking around how the programme is best placed to achieve its goals.

6.3.7 Hits on Sciencewise website, frequency of presentations and other Sciencewise events

There are a number of quantitative indicators that provide an indication of the visibility of Sciencewise, for example, in terms of visits to its website. To support these indicators regarding the visibility of the programme, the following evaluation question is relevant:

- To what extent is the use of public dialogue being publicised by government?

As has already been discussed elsewhere in the report, it was strongly felt by the majority of interviewees that the degree of effort being put in to publicise the Sciencewise programme by government (and by Sciencewise itself) is very limited:

> *"The visibility of Sciencewise is still poor" (Sciencewise Team member)*

> *"The visibility of SW needs to be improved in general. Currently the role of SW is regarded as the "best kept secret" by policy makers who hear about it." (Commissioning body)*

> *"The [lack of] visibility of SW is a straightforward marketing issue" (Sciencewise Team member)*

*"The visibility of SW needs to be raised. [The commissioning body] is aware of SW and PD but if they were to move to another one, the awareness would not be there." (*Commissioning body)

This is in part because public dialogue is often a small part of the overall public engagement strategy associated with a particular policy and so where the policy area is mentioned any reference made to the results of public dialogue is usually made in conjunction with wider public engagement activities or consultation results.

Many interviewees' surprise was expressed over the lack of mention of Sciencewise in the media. This is a fact acknowledged by Sciencewise team members themselves (at the October 2014 DES meeting, for example). This suggests that Sciencewise lacks a media strategy, potentially because the projects are not owned by Sciencewise and it is therefore difficult for them to publicise the work, other than via its website and through the softer forms of social media.

It was also suggested that such a constraint exists because it is a government programme and that within the programme there is anxiety in terms of responding to blog posts and social media submissions. One way of improving the conversations on social media, would be to give individual team members more freedom or encouraging them to comment on the subject areas. There is a perception amongst some programme team members that visibility is discouraged as it is seen as *"devaluing the Sciencewise brand"* (Sciencewise team member). This of course is an area that must be managed but given that advocacy work by individual team members is important (as shown in Section 4), a greater level of engagement could only improve the visibility of Sciencewise and therefore help further promote public dialogue.

To a degree, there is potentially a conflict between extensively promoting the work of Sciencewise as a programme whilst attempting to embed public dialogue within government departments and other commissioning bodies. A heavy visible presence of Sciencewise may detract from attempts to encourage ownership of the public dialogue process by policy makers, with both members of the public and departments and other commissioning bodies perceiving the initiative as coming from Sciencewise and not then needing to come from within.

The downside is that a programme which relies heavily on influencing decision-makers to engage in more public dialogue through promoting the success of previous work is likely to be negatively affected in the achievement of its objectives without adequate visibility. Many of the tools the programme utilises to spread the word about public dialogue (dialogue project reports, individual project evaluation repots, website, webinars, guidance materials etc) rely on the fact that people know where to find them. If not much is known about the programme - what it does, what it can offer, the resources it has available - there is a strong likelihood that these resources will be underutilised.

"Sciencewise Expert Resource Centre" website

The programme's website is regularly updated with new information. It has also been restructured twice during the current period; around mid-2012 and then again in 2014 to improve the search function of the website and the transparency of governance. The 2012 update brought about several improvements to the transparency of the programme's governance and management structure and activities. For example, Steering Group meeting documents are now available from the website.

Traffic and visitors

The traffic to the Sciencewise website is monitored by the programme management team on a monthly basis. Table 6-6 and Figure 6-1 present data provided by the team, for the period beginning of January 2012 until end of November 2014.

As shown in Figure 6-1, the general visitor traffic to the Sciencewise homepage steadily increased until the end of 2013 and then slowly decreased through 2014 to approximately the same level as 2012. It is difficult to draw firm conclusions from this general trend, other than that the overall number of visitors is low.

Table 6-6: Summary of traffic to Sciencewise-ERC.org.uk (data provided by Sciencewise-ERC)

Page visited	Number of unique visitors (monthly average)		
	2012	2013	2014
Learning resources unique visitors	26	43	26
Number of blog posts per month	3.8	5.2	2.4
Blog	223	543	325
Blog: unique viewers per blog post made	59	105	137
Newsletter downloads	25	19	1
Emails delivered (bulletin and newsletter)	n/a	750 (March)	1,100 (March)
Digest email unique opens*	n/a	n/a	275

* The digest replaced the newsletter in 2013. These represent the number of people who opened the Sciencewise newsletter to the digest articles

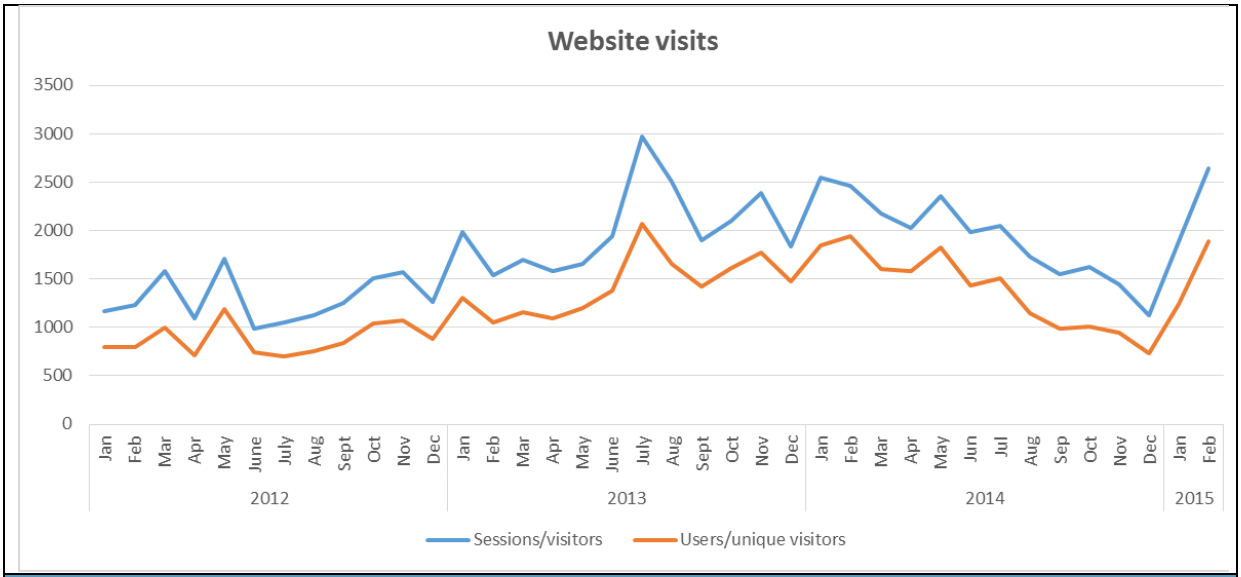

Figure 6-1: Visitors to Sciencewise website for 2012-2015 (data from Sciencewise)

Perhaps more worryingly, the number of unique visitors, which at first increased over the 2012-13 period, has declined in 2014. This includes the number of unique visitors hitting the learning resources pages; this is not a trend consistent with the objective of achieving greater visibility and to be able to effectively demonstrate effective use of public dialogue to a wider audience (to support advocacy and structural and cultural change). However, the visits have increased markedly at the very beginning of 2015 but it is too early to tell if this is a spike or a marked trend.

Sciencewise Blog

The Sciencewise website has an active blog section where blog articles (either stand-alone or in series) are published regularly. The blog is used to host discussions surrounding the thought leadership pieces and social intelligence commissioned by Sciencewise as well as to publicise recent news regarding supported Dialogue projects. As noted above, the article "In the goldfish bowl: science and technology policy dialogues in a digital world"[71], stimulated a response and critique by Dr Eric Jensen[72]. This, too, was published on the Sciencewise Blog and responded to in turn by the authors[73]

It is of note though, from the figures presented in Table 6-6, that the blog pages are the most visited part of the website. In terms of visits to the blog, 2013 received more posts per month than 2014 to the end of November. However, on a per blog post made basis, 2014 has attracted more visits: 137 per month in 2014, compared to 105 per month in 2013 and 59 per month in 2012. From this, one has to conclude that additional blog articles are attracting more traffic to visit the site and that this is a valued component of the website offering.

Social Media

Twitter is perhaps the form of social media used most predominately by Sciencewise. The @Sciencewise account has 3,300 followers rising steadily from approximately 1,800 at the beginning of the evaluation period in 2012, and from 2,183 in December 2013 (earliest firm data).

Table 6-7: Twitter profile summary for @Sciencewise (on 04 Dec 2014)

Statistic	Value (to date)
Joined	December 2008
Followers	3,300
Following	448
Tweets, of which are retweets	Tweets 1,370 of which 287 are retweets
Sciencewise tweets retweeted and further retweeted	Retweets 524 with further retweets at 994
Top Tweet (7 retweets; 4 favourites)[74]	23 April 2014: "I'll never look at water the same way again…" http://bit.ly/1r2npeT See final report on water management dialogue **@EnvAgency #scipol**
Max retweets	8
Max favourite	4
Ten most popular Hashtags, number of tweets	#scipol, 103; #dialogue, 59; #publicdialogue. 38; #sciwise, 32; #livingwithflooding, 23; #gcsareport14; #openpolicy, 15; #embeddingwellbeing, 15; #bestofsciencewise, 15; #civilservicelive, 13

The number of followers itself is reasonable (for example, in comparison to Rathenau Instituut, which has 4000, see below). However, most of the tweets and retweets by @Sciencewise do not stimulate further conversation within twitter. While the tweets do attract some retweets, these tend to be few in number 1-5 (max 8 retweets) and these are generally by the programme team

[71] Susie Latta, Charlotte Mulcare and Anthony Zacharzewski, 2013 available at: http://www.sciencewise-erc.org.uk/cms/assets/Uploads/In-the-goldfish-bowl-FINAL-VERSION.pdf

[72] In two parts: January 2014 and in February, accessible at http://www.sciencewise-erc.org.uk/blog/?p=2137 and http://www.sciencewise-erc.org.uk/blog/?p=2215

[73] February 2014, accessible at: http://www.sciencewise-erc.org.uk/blog/?p=2200

[74] https://twitter.com/Sciencewise/statuses/458922893087604736

themselves. For the most popular tweets (by number of retweets), though, the programme team do not account for the majority of retweets.

In terms of a wider conversation on public dialogue within Twitter, the visibility of Sciencewise is improving but it still lacks conversation.

There are tweets that are retweeted and "favourited" but, in general, the tweets do not receive replies or stimulate conversation. To provide a point of comparison, the Rathenau Instituut (see Annex 2) has some 4,000 followers[75] and 49% of their tweets are retweeted (21% for Sciencewise) with a maximum retweet count of 28 and a maximum favourite count of 7. Based on this comparison, Sciencewise is not yet having as big an impact as it may be able achieve.

Other social media (facebook, yammer, youtube)

Sciencewise has made only limited "official" use of social media resources. This can perhaps be expected as limited discussions regarding the business of commissioning bodies are held directly through social media and because many of the features of social media are limited when accessed through Government IT systems.

Yammer is accessible but attempts by Sciencewise to engage with this platform were unsuccessful according to the Sciencewise team (or an "abject failure" according to a commissioning body representative), with posts receiving little activity despite a lot of activity by Sciencewise.

Sciencewise does not maintain presence on Linkedin but individual members of team do mention the programme on Linkedin and stimulate discussion and receive replies. However, these are therefore tied to the individual and do not retain a strong link to Sciencewise as a programme.

The Sciencew1se YouTube channel is used by Sciencewise to make various videos more widely available. These include videos on specific PD workshops and for more general advocacy and awareness raising purposes. In the past, it appears more videos were uploaded, with 37 uploaded from 2008-2012, but only 11 since 2012. The reduced emphasis that has been placed on uploading videos of PD workshops suggests that many of the previous uploads were considered by Sciencewise to have limited impact. Clearly, these videos have limited wider public interest and impact, as evident by the limited number of views (a total of some 1,300 views from 2012 until Dec 2014 and approx. 12,200 views since 2008). However, the videos could serve an important purpose for individual dialogues themselves and to share recordings of public dialogue training events and webinars. Thus, a low view count is only a measure of visibility for the wider public and of the public engagement/dialogue field; it is not necessarily a measure of visibility and impact amongst policymakers. Nevertheless it is clear that youtube is not a crucial resource for Sciencewise at present, as demonstrated by the decreased levels of use.

Facebook is a similar social network to YouTube in that it is unlikely to reach or stimulate discussion amongst policy makers. Again, Sciencewise stimulates no significant activity (142 friends and only "50 likes" and one "share" of posts made by Sciencewise since 2012[76]) on this platform despite making regular posts about activities. This can be considered an extremely low level of engagement but the evaluation team cannot see a reason why significant effort should be placed on this platform, given that more fruitful interactions are already being gained through through Twitter.

[75] Dutch language account had 3,947 followers https://twitter.com/RathenauNL, and a further 315 followers of the English twitter account, https://twitter.com/RathenauORG, accessed 20 January 2015.

[76] Usage statistics correct on 3 Dec 2014.

Overall, the use of the Sciencewise website and social media resources by Sciencewise for any purpose is currently limited. The number of visits and downloads of articles broadly matches the number of people on the distribution lists, indicating that the audience (policymakers, wider public engagement field, contractors) are accessing the documentation and reports of Sciencewise, however, traffic from outside of the known audience (those not in the existing networks and distribution lists) is currently unlikely to come from online resources used by Sciencewise (or directed through the BSA website). Should Sciencewise seek to make better use of online resources (to make the role of Sciencewise clearer and to showcase its offerings) and to engage with a wider audience through these means, steps should be taken to encourage Sciencewise team members to be able to refer to activities and to encourage conversation with the wider public engagement field and policymakers alike.

Traditional media

Neither Sciencewise nor public dialogue in general gain much coverage in the mainstream media's coverage of Science and Technology policy issues[77]. There are occasional articles posted in Newpapers[78] or their websites[79] but these are relatively few. Even when the media does cover topics where Sciencewise has supported PD, the dialogue itself is not usually mentioned. For example, the BBC makes no mention of attempts by government to take part in any dialogue or engagement despite this being mentioned in the linked articles[80]. However, a very recent article is more promising in that it calls for "public debate" around designer babies. This article mentions HFEA, the MRC and the Nuffield Council for Bioethics calling for open public debate. Another recent article by the BBC does indicate a need for "debate" around topic but still no mention of "public dialogue" is made specifically[81].

The small number of mentions of Sciencewise supported activities in media reflects that dialogue is usually only a part of the public engagement activity associated with a policy area but also that policymakers may not be entirely comfortable or familiar with the concept of Dialogue. Should it be more accepted and understood more widely, it could be expected that press-releases by departments would refer to dialogue specifically, rather than describe it as public engagement activity.

[77] Based on searches of the BBC website for "public dialogue", "dialogue", "dialogue workshops", "Sciencewise" as keywords.

[78] A recent example being a profile on Sir Roland Jackson in The Cumbrian News and Star on 9 December 2014. The article describes his Sciencewise related activities.

[79] http://www.theguardian.com/science/political-science/2013/dec/04/12-things-policy-makers-and-scientists-should-know-about-the-public, and http://www.theguardian.com/science/political-science/2013/dec/04/12-things-policy-makers-and-scientists-should-know-about-the-public, accessed 23 January 2015.

[80] "*Rules for babies 'from three people'"*, BBC, 17 December 2014, http://www.bbc.co.uk/news/health-30513700, accessed 23 January 2015.

[81] *"'Designer babies' debate should start, scientists say"*, BBC, 19 January 2014, http://www.bbc.co.uk/news/health-30742744, accessed 23 January 2015.

6.4 Issues identified and conclusions

The analysis above indicates:

- The degree of impact on actual policy is somewhat unclear, but nevertheless there are clear impacts apparent from activities in the current period.

- Dialogues from 2011 are still resulting in citations in policy documents – this demonstrates continued impacts for several years after the dialogue was completed and these are picked up by Sciencewise reporting in the longer term

- Further clarity is required for some departments to accept the evidence presented by Sciencewise of the effectiveness of dialogue; if this is successful further structural and cultural change may also be possible

- There is no consensus on the positioning of public dialogue in terms of qualitative social research and pure dialogue within the Sciencewise team and by commissioning bodies. This is something that should be agreed by the team in order to provide further clarity about how dialogue outputs can be used

    - Steps have been taken by Sciencewise in conjunction with commissioning bodies to investigate how best to approach the latter suggestion through the development of a Quality Framework for public dialogue, during the preparation of this evaluation.

In addition to the policy impacts described in the points above, public dialogues have demonstrated various other impacts on policymakers and the process of policymaking for all of the dialogues. These range from raising policymakers awareness of the level of current public understanding on particular topics or better ways of presenting information or policy options to the public. While these are less obvious impacts than those in policy, our analysis based on TAMI typology indicates that it is possible to draw these out from the individual project evaluation reports.

Sciencewise has increased its "product range" during the 2012-2015 period. It now has non-dialogue offerings that are able to stand on their own. In particular, social intelligence has been able to demonstrate the effective use of dialogue processes, despite it being intended to summarise research regarding public views or opinions through dialogue and through other means such as market research.

Sciencewise also continues to support innovation in the field of dialogue by funding experimental deliberative methods: novel dialogue approaches and dialogic panels. The success of these experimental methods may be limited in some cases. Nevertheless, they are valuable as they provide information on the efficacy of different approaches for commissioning bodies and this information can be used to avoid undesired costs in the future (e.g. through avoidance of non-effective dialogue designs).

The Sciencewise website is an under-used resource, although it remains the best source to access materials and, in general, the reports for projects are posted in a timely fashion. It is also clear that:

- the blog is the most popular section of the website but much more could be done in encouraging wider discussion of dialogue by better interaction on twitter, and
- the co-operation between the Cabinet Office Open Policy Making blog and Sciencewise is a good start and senior Sciencewise team members have gained traction in stimulating online wider debate.

In addition, the understanding of what Sciencewise is and what it does still needs to be improved. Many commissioning bodies who have used Sciencewise are still unclear about this. There is also an additional need to share the learning Sciencewise has gained through their experience of public dialogue. The case studies are the most easily digestible form of sharing this information currently and they incorporate some of the impact findings but commissioning bodies still need to summarise these down further when making a case for dialogue to their managers.

Overall, this interim goal is crucial in supporting the first two interim goals. If Sciencewise is not able to demonstrate the value and effectiveness of dialogue processes clearly, it will ultimately struggle to meet the interim goals of Effective Advocacy and Structural and Cultural Change and, in doing so, also fail to meet its overall objective *"To improve policy making involving science and technology across Government by increasing the effectiveness with which public dialogue is used, and encouraging its wider use where appropriate."*

Having said this, the finding of this evaluation is that while serious questions are being asked by commissioning bodies regarding the use of dialogue, Sciencewise is responding by working with these bodies to address the issues and, through this, hopes to demonstrate more effective dialogue in the future. In addition, Sciencewise's activities have shown concrete impacts on policy documentation and in other learning impacts during this evaluation period and this is likely to continue well beyond 2015 based on the current set of activities. Based on interview responses, it is clear that without Sciencewise the use of dialogue by commissioning bodies would have greatly reduced in quantity and decreased in quality.

7 Programme-level Findings

7.1 Introduction

When compared with the activities carried out under earlier iterations of the Sciencewise programme, Sciencewise has made a number of strategic adjustments during 2012-2015 period in order to ensure the achievement of its overall objective. Both the internal programme evaluation carried out in 2012 and the Theory of Change exercise conducted in 2013-2014 (which was foreseen as a sort of mid-term review of the programme) identified similar contextual issues and barriers to achieving greater levels and quality of public dialogue in policy making in the science and technology field. In fact, the Theory of Change report states that:

> *"…many of the same problems remain that influenced the establishment of Sciencewise in the first place."*

This section sets out the key strategic changes that have been made under the current programme and explores issues at the programme level which interviewees have identified as being key to the way in which Sciencewise operates and which may hinder or assist the programme in achieving its objectives.

7.2 Adoption of Theory of Change approach to strategic planning - refocusing on interim goals

In 2013, Sciencewise embarked on a strategic planning exercise for the programme which culminated in April 2014 in a finalised Theory of Change approach for the programme. This was designed to ensure clear practical links between activities and impacts. The resulting plan of action and evaluation framework have been adopted for the remainder of the current programme cycle and was used to develop the 2014-2015 business plan. The Theory of Change process started from Sciencewise's overall objective and enables the programme team and steering group to articulate clear long-term and interim goals for the programme, and to identify those activities most likely to achieve those goals for the final year of funding.

In enabling the programme to identify a set of interlinked and interrelated interim goals and activities essential to achhieving the overall objective, the process has provided the opportunity to refocus on the interim goals, as well as to monitor and evaluate progress in a much more informative way. Interviews with programme team members indicate they are excited by the outcomes of this strategic planning exercise. The identification of specific outcomes/impacts and outputs for the remainder of the programme represents a significant improvement on the relatively high level metrics previously agreed with the programme Steering Group in 2012 as a way of measuring the progress of the programme.

Altogether, the development of the strategic plan using the Theory of Change approach appears to have been a positive experience for Sciencewise and has provided the programme with a more effective planning and evaluation tool.

7.3 "Sciencewise approach" to public dialogue projects

Almost all those interviewed were extremely positive about the work that Sciencewise does, as well as the overall benefits to be gained from engaging in public dialogue during the development and implementation of policies. However, some criticisms of the methodology adopted during public dialogue projects, as well as the process carried out for setting up and running projects were identified, and although these views were in the minority, they warrant consideration by the programme team and management board in order to further extend the reach of the programme and long-term commitment to public dialogue from commissioning bodies the programme has worked with as well as those it is targeting for the future.

Whilst people from government departments and other commissioning bodies appreciate the need for in-depth discussion and value the deeper insights that can be obtained using Sciencewise promoted approaches to public dialogue, a number of them have felt that Sciencewise has not been sufficiently flexible in adapting its approach to different circumstances in terms of the commissioning body itself and the nature of the policy being developed. The message coming from a number of those interviewed from government departments in particular was that the purpose of public dialogues is *"not to produce gold standard, publishable social research but to do things that are useful for policy makers. Policy makers deal in uncertainty and are not seeking for perfection*". Others have referred to the approach being *"over detailed, slow and focusing too much on the process".* Some of the most critical comments from these groups of interviewees related to the fact that they felt the methodology was formulaic and that if the formula was not acceptable in its entirety then the project would not proceed. *"Sciencewise's approach to public dialogue is standardised and rigid and they are in danger of becoming stuck in a rut. They have not moved with the times and the same model is always followed again and again and generally they lacked sufficient imagination around techniques such as social media or surveys."*

It was suggested that, for some departments, the reason that they might not engage with Sciencewise is due to a lack of awareness of the benefits of public dialogue; for others, however, it is due to a *"lack of flexibility and approach, rigid funding criteria and a long process for approval, mitigating against situations where an opportunity arises and their Department wishes to move quickly*". The time involved in transforming an initial idea for public dialogue into an implemented and evaluated project has been described above in Section 4.3.2, in some cases a process which takes years and at least multiple numbers of months. The length of time it takes to develop, approve, implement and evaluate the project has also been recognised within the Sciencewise team and suggestions for considering alternative packages were made from those within the programme as well as outside it:

> *"There have been some qualms with the overall length of process for setting up PD projects. It would be good to see how feasible it is for Sciencewise to bring in new products that allow quicker results. Sciencewise is taking on-board criticism about this and this is absolutely vital."* (Sciencewise Team member)

> *"Whole process of putting together a public dialogue offering takes about 18 months and this does not fit with the policymaking process. If a quicker turnaround with something other than a full dialogue could be achieved it could be steered into the policymaking process."* (Sciencewise Team member)

> *"Sometimes having a broad range of stakeholders involved can take longer. It takes longer to align their thinking. Panels may help to get a quick feel about what the public thinks and to help*

the departments develop their policy options. The new citizen panel idea may also provide a similar type of role." (Commissioning Body)

Delays, however, are not always on the side of Sciencewise, with government departments' internal processes also contributing to the length of time it takes to gain approval of the department itself. *"Sometimes the business case paperwork has been said to take too long: This can be predominanatly at the departmental side, particularly where Ministerial sign-off is required. But in terms of helping with this, Sciencewise has been very helpful. The length of delay could be indicative of the "risk" perceived by the departments in terms of the results coming out of the dialogue."*(Commissioning Body).

Further issues were identified with the contracting process to recruit external contractors to run public dialogue projects. Academics, commissioning bodies, contractors and some Sciencewise team members indicated that, in some cases, there are improvements to be made with regard to the methodology being used.

"A lot of academics have expressed cynicism over contractor selection. Their feeling was that the contractors that are usually used by Sciencewise don't have the rigour that academics would be able to bring to the process. This is probably related to the timing, in that contractors are more able to meet the timeframes required." (Commissioning Body)

"Better planning by departments… would enable more academics to become involved, as evidenced by the fact that departments do manage to get academics to do other R&D projects. These academics tend to work closely or regularly with the department so tend to hear about the projects early on so are ready to respond in time." (Commissioning Body)

One department indicated that addressing timing issues as a barrier to academics in bidding for the delivery of public dialogues could be a possible solution to providing more robust PD findings. This would, therefore, increase the policy impacts and raise the "acceptability" of PD for policymakers more widely.

Some of the contractors interviewed expressed varying views on the level of competition, in terms of whether it is increasing and a wider range of people are at least receiving the ITTs:

"There is more competition. The list of people who get sent ITTs is getting longer ."

"Hard to say whether the level of competition has increased or not; [academic/contractor] would say that it has generally remained the same."

In part, the lack of competition has been linked to a *"lack of visibility of some Invitations to Tender" (SW team Member).* For example it was noted that one contract was not very visible online to potential contractors; it was also noted that *"Sciencewise has to improve the online visibility of these tenders amongst the contractor community"(SW team member).* This remark was supported by comments made by Departments concerning contractors struggling to find the tenders. The evaluation team recognises that commissioning bodies are responsible for the procurement of dialogue contractors and so Sciencewise cannot solve these issues in all cases. Nevertheless the tender documentation is available to Sciencewise and it could make all tenders available on its website (where possible and where there is time, subject to the procurement rules of the commissioning body) in addition to any advertising that a commissioning body may do. It is understood that Sciencewise has recognised this as an issue and sometimes publishes tender notification on its website. Sciencewise is currently working to pull together a network of contractors to identify ways that they could work together on steps to improve the contractor base

for dialogues. From the external perspective, the *"[o]verall the visibility of potential projects is good but not perfect" (Academic/contractor)*".

Such remarks appear to support the view, as discussed in the Innovation & Risk Report (O'Riordan, 2014), that the "closed-shop" nature of the field of dialogue limits the potential contractor base. It may be the case that existing contractors are adequately aware of up-coming projects but new entrants may find it difficult due to low visibility of tenders.

Views were often expressed that the degree of innovation in providing new or different forms of deliberative dialogue methods may also be hindered by the narrow existing contractor base, according to dialogue practitioners but this is not always apparent to all commissioning bodies. This is discussed under Interim Goal 2 in Section 5.3.4.

It is noted that Sciencewise organised a meeting of dialogue delivery and evaluation contractors in March 2015 as a means to promote awareness and that for evaluation tenders, the programme encourages commissioning bodies to invite all those on the Sciencewise evaluators list.

7.4 Governance issues - Citizens Group

Governance structures, roles and responsibilities for the Sciencewise programme are described in summary in Sections 2.2.1 to 2.2.6. As might be expected, comments regarding the governance of the programme were restricted to members of the Steering Group and Citizens Group, members of the Programme Board and Sciencewise programme team members. Issues were raised related to the creation, operation and subsequent disbanding of the Citizens Group.

The Citizens Group was established in September 2012 as a pilot initiative to involve citizens in the governance of the Sciencewise programme. Initiated by the programme itself, the initiative was an attempt to "practice what we preach" in terms of involving the public in decision making. The pilot was originally intended to last for two years but was stopped early after approximately 18 months.

According to the interviews, the intention was to establish a group of people who would discuss issues being considered by the Steering Group at a face to face citizens group meeting (with other communication between the group members taking place by phone/skype etc in the period coming up to the meetings) prior to 2 representatives of the group participating in the Steering Group meeting itself. Approximately 5/6 members of the group were active during its brief existence, with 3-4 participating in the group meetings prior to the Steering Group meetings.

Following an internal review of the initiative after approximately one year, the programme took the decision to disband the group and consider alternative arrangements for involving citizens.

Feedback from programme team members during interviews for this evaluation indicated that supporting the Citizens Group was resource intensive for the programme, not so much in terms of financial support for travelling and communications expenses but more in terms of programme team members' time to build confidence and help prepare group members for the Steering Group meetings. As an ongoing initiative, programme team and Steering Group members observed that members of the Citizen Group were selected from a limited number as it was not possible to draw from a wider group given the limited number of contact details they had for participants of previous dialogues. It was mentioned in the interviews that there was a need to continually refresh the group in order to ensure that members were representative of the wider public rather than "public dialogue specialists", which members would become if they remained a member of the group for an extended period. It was also noted that this would also have meant the continual retraining of new

group members which was identified as a challenge given the complex nature of the Sciencewise programme.

For their part Citizens Group members indicated that they did not feel sufficiently empowered to make contributions during Steering Group meetings. Even so, they were surprised when the initiative was brought to an early close after having received positive feedback from programme team members in the early stages.

Subsequently, the decision was taken to establish citizen panels or "sounding boards" for particular topics, rather than to involve them in the governance of Sciencewise. A programme team member raised the possibility that the programme could consider running a public dialogue on Sciencewise (which could potentially be done on a periodic basis involving different sets of previous dialogue participants) in order to gain citizen inputs to the programme.

7.5 Issues identified and conclusions

A number of important programme level adjustments and issues relating to the programme's overall approach, organisation and methodologies have been identified during the evaluation as follows:

- The Theory of Change programming exercise undertaken during the 2012-2015 programming period has enabled the programme to articulate clear long-term and interim goals and to identify those activities most likely to achieve those goals for the final year of funding. As such, the action plan developed from the exercise has provided a clearer focus for the programme in order to achieve its objectives. This has been a positive exercise and should be incorporated into any future planning of the programme beyond its current funding period
- An experimental approach to involving citizens in the overall governance and oversight of the programme was attempted but did not achieve the outcomes desired. Alternative measures have been considered for involving citizens in setting the direction/coverage of the programme and these will need to be monitored as to their effectiveness and degree to which citizens can have an influence over such a programme
- Whilst there is overall praise for the work that the programme has done and is doing in terms of encouraging and supporting commissioning bodies to utilise public dialogue to inform policy-making, some questions have been raised regarding the appropriateness of methodologies involved in individual dialogues, the adaptability of the programme to the needs of commissioning bodies and the process for identifying and selecting supporting organisations. Whilst these issues were raised by a minority of those consulted during the evaluation, the issues raised are important and should be considered by the programme board and management team.

8 Conclusions and recommendations

8.1 Summary of findings and conclusions

The detailed findings and conclusions reached for each of the interim goals have been outlined in their respective sections. This section pulls together the common themes across these goals and provides recommendations for each of these, where possible.

8.1.1 Awareness of Public Dialogue and Sciencewise

An important indication of the awareness and acceptance of public dialogue is the degree to which commissioning bodies are willing to fund dialogue activities. This indicator has not been explored in previous evaluations of Sciencewise. This evaluation has explored the spending of the programme budget across commissioning bodies. This evaluation has found that projects are typically funded at the 50% "maximum" level for the majority of projects, highlighting the importance of the funding element of the Sciencewise programme. However, the public dialogue expertise accessed through Sciencewise was more crucial than funding for many of those interviewed.

In terms of awareness of public dialogue, the programme has made significant gains in addition to the number of dialogue projects and the number of individual commissioning bodies in comparison to previous funding periods. This means that a wider range of examples of where dialogue can inform their policy making should be available across a wider set of policy areas. While staff turnover at departments has been identified as limiting capacity and institutional learning, Sciencewise's collaboration with the Cabinet Office's Open Policy Making team's training events has resulted in public dialogue being introduced to new and existing civil servants as part of their formal training. Indeed, this period has seen increased capacity at commissioning bodies, with evidence that at least three are confident to independently commission public dialogues.

Nevertheless, policymakers' and the public's awareness of public dialogue is very low with anecdotal interview evidence suggesting that the policymakers outside of those who have used Sciencewise are unaware of public dialogue and of the availability of Sciencewise expertise and funding. Similarly, mainstream media sites and social media indicate that wider awareness of public dialogue is almost non-existent, even in relation to policy areas where influential public dialogues have been carried out, such as around mitochondrial replacement therapy[82]. The lack of calls made by the public through the media for more dialogue on science and technology matters indicates a lack of incentive for policymakers to make greater use of dialogue in their work. If these calls were being made in the media and if the public had a greater awareness of that public dialogue exists and is used by some policymakers, perhaps a greater incentive to listen to public views would be introduced and the use of public dialogue become more accepted. Without calls from the public to do otherwise, it is unlikely that dialogue will become a mainstream practice for the majority of policymakers.

[82] Very recently, the DfT has been quoted by the BBC that a future dialogue will be held: *"Newquay Airport: Government 'to oppose drone testing'"*, BBC, 6 March 2015, available at http://www.bbc.co.uk/news/uk-31607728, accessed 6 March 2015.

8.1.2 Understanding

The level of understanding of the possible benefits of carrying out public dialogue are demonstrated by Sciencewise through the production of its guidance materials, case study reports, social intelligence and thought leadership pieces. These pieces act as a repository of knowledge on public dialogue and have been shown to have an influence on the wider public dialogue field, in particular stimulating academic publication and discussion. However, to further demonstrate the value of dialogue for policy making, further understanding of how dialogue can improve policy making and how it can be used in a practical way by departments must be developed. The current work on the "Quality Framework" and the introduction of monthly impact reports has gone some way toward this already. Further gains are being made through exploration of cross-cutting issues, both in targeting social intelligence pieces and in reaching new commissioning bodies.

Another source of learning is the catalogue of project reports being produced by Sciencewise and these remain a valuable research for further learning. Already, Sciencewise carries out long-term impact monitoring from past activities, looking for policy manifestations resulting from them but further learning could be gained by studying the common themes across the public views for a variety of topics. These could potentially to new dialogue topics to help steer the design of any methologies or work act as a further source of social intelligence.

8.1.3 Possible future directions

There are two main aspects to the future of Sciencewise:

- Brand, and as a
- Programme – of BIS or with shared responsibility across various departments

The brand "Sciencewise" was seen as valuable and in general most felt it should be retained. This evaluation found that all interviewees wanted to see some continuing provision for public dialogue and public dialogue expertise. Without the provision of expert guidance from Sciencewise, the quality of dialogue would reduce. This also applies to the funding provided by BIS through Sciencewise, it remains crucial for many departments and for those where funding may be available it helps improve the scale and therefore the impact of their dialogue activities.

This evaluation has observed a shift in the timing of the policy questions associated with dialogue topics toward more downstream issues. This evaluation has found very relevant impacts for policymaking from across the policy cycle but Sciencewise should explore where the funding is best placed and what types of dialogues should be funded. This is particularly important as the degree of embedding in departments increases and commissioning bodies became more confident in carrying out dialogues independently. Should a greater level of funding be reserved for experimental and challenging dialogues? This evaluation is able to make recommendations for two future scenarios:

- Encouraging upstream & experimental dialogue methods: Research councils have engaged with a number of "experimental" dialogues and those on upstream topics. Consider continuing to fund these at higher level than downstream topics, particularly those using more established dialogue practises.
- Encouraging clear policy impacts: continue to maintain the policy timing at the "honest broker" stage of the policy cycle but place a greater emphasis on ensuring that impacts are characterised consistently and reported widely to policymakers and that departments.

8.1.4 Recommendations for future evaluations

The methodologies of the current evaluation (described in Section 3) and those of past internal evaluations of Sciencewise rely upon literature review of the documentation associated with the programme and the public engagement field and on interviews with the programme team and others who engage with the programme in their roles as commissioning bodies, contractors, academic and NGO experts in dialogues and their oversight groups. The conclusions and recommendations of this report that are drawn from interviews are largely amalgamations of the views and opinions of these individuals and, as is always the case with arguments, their validity relies heavily on the clarity of wording. Given that not all of these individuals expressed views on all of the topics, an evaluation relying on semi-structured interviews will never answer whether a view is agreed with by the majority of those interviewed. In order to answer this question, it could be recommended that the main conclusions and recommendations are tested, or ranked in importance prior to definite actions being taken. This could perhaps be carried out using a more formal questionnaire designed to test this, circulated back to the same interviewees but it has not been carried out for the present evaluation due to budgetary and time constrains.

This evaluation has provided some analysis of the expenditure profile of the programme and this has provided some insights into the willingness of departments to co-fund projects. Future evaluation efforts should continue to monitor the level of funding, perhaps in more detail taking into account the policy timing and the scale of each individual dialogue activity.

8.1.5 Overall conclusion and recommendations

This evaluation covers all activities and efforts made by Sciencewise during this period toward meeting its objective agreed with BIS for this three-year period:

> *"To improve policy making involving science and technology across Government by increasing the effectiveness with which public dialogue is used, and encouraging its wider use where appropriate."*

The main conclusion of this evaluation is that this goal has been met to a considerable degree. There are still opportunities though to further deliver against this goal.

Table 8-1 provides a summary of what the evaluation has found "works well" and "what doesn't" in terms of helping achieve its goal for this evaluation period. We also provide suggestions from the interviews and our analysis on the actions that could be taken to further meet the current programme goal and the interim goals.

Table 8-1: Summary of Major Findings and Recommendations		
"What works"	**"What doesn't"**	**Recommendations for improvement**
Dialogue Projects and support • Sciencewise is unique as a co-design model of undertaking policy engagement and embedding it into policy making • Stronger project pipeline /new departments indicating interest • An increase in the number of dialogues and in the number of commissioning bodies • A variety of impacts are observed	• Not enough high-level policy makers are aware of Sciencewise • On-line and traditional media visibility is low • Significantly fewer 'upstream' policy projects – team decision about what is appropriate is required	• Continue working on improving "visibility" with policy makers • Continue working on improving the use of on-line and social media tools as part of advocacy and to demonstrate effective dialogue processes • Incentivise commissioning bodies to engage in upstream dialogue., via scaled contributions, if this is deemed appropriate.
Non-project activities • Cross-cutting approaches are breaking new ground in policy domains where dialogue is not typically considered • Some bodies are confident enough to carry out their own dialogues due to mentoring and capacity building	• The embedding process remains fragile • Cultural change remains an issue, with few examples of departments directly approaching SW	• Encourage bodies where a clear capacity exists to accept lower percentages of SW funding • Continue to look for ways to introduce public dialogue to policy makers who are unaware of Sciencewise
Sharing learning and maximising impacts • Certain projects are demonstrating evidence of the value of public dialogue in the development of policy initiatives, e.g. Mitochondrial Replacement • Case studies and Impact reports are acting as a coherent evidence base • Social intelligence provides rapid insights of existing knowledge of public views. These serve to introduce the concept of dialogue to some policy makers as well as being a "stand-alone" programme offering.	• More demonstrable evidence of the impacts of dialogue on policy making is still required • Long reports hinder access to evidence for policy makers and other commissioning bodies	• Continue looking for long-term policy impacts but also consider how to find new learning from older dialogue projects. • Encourage the use of a greater variety of dialogue approaches and methods • Work directly with the policy profession on how best to present dialogue results to policy makers
Strategy • Theory of Change has enabled a refocusing on interim goals and an enhanced ability to monitor and evaluate progress • Merging of the meetings between the programme board and programme management team	• Sciencewise is seen by some as championing a "standard" type of dialogue, and as lacking flexibility	• Develop strategy to communicate externally, as well as internally, but work hard with departments to ensure they remain in the limelight • Provide greater transparency or explanation of management structures

Annex 1 – Sciencewise documentation reviewed

Any references to cited documents are given in footnotes. The internal and external Sciencewise documents referred to in this evaluation are also listed below.

Internal documentation:

"Impacts and Accolades", Sciencewise impact summary, November 2014

"Impacts and Accolades", Sciencewise impact summary, December 2014

"Impacts and Accolades", Sciencewise impact summary, January 2015

"Sciencewise Impacts Evidence 2012-2015", Summary document of impact evidence, June 2014

"Sciencewise Evaluation Update 2014", Annual evaluation review, July 2014

"Sciencewise Projects to Date – 4 September 2014", Communication with Diane Warburton, 5 Septermber 2014

"Sciencewise Citizen Group Meeting", Minutes from Meeting, 18 November 2012

"Sciencewise Citizen Group Meeting", Minutes from Meeting, February 2013

"Sciencewise Citizen Group Meeting", Minutes from Meeting, 2 May 2013

"Citizen Group meeting 18/10/2012", Minutes prepared by Edward Andersson and Ingrid Prikken, 18 October 2012

"Citizen group FAQ", Frequently asked questions regarding Sciencewise

"SW projects reports", spreadsheet information regarding projects, 11 November 2014

"SW projects summary", spreadsheet information regarding projects, June 2014

"Departments and bodies leading Sciencewise co-funded projects by time", spreadsheet information regarding projects, 17 October 2014

"Projects process to Business Case", process up to approval of a business case for a Sciencewise co-funded project, September 2012

"Review – projects development", overall programme objective, reports strengths and weaknesses, July 2014

"@sciencewise, Twitonomy", Information regarding Twitter analytics, 4 December 2014

Facebook spreadsheet statistics on likes and shares

Internal monthly reports provided to BIS

Publicly available:

"Sciencewise – Interim Evaluation 2012", Sciencewise-ERC, March 2013, available at: http://www.sciencewise-erc.org.uk/cms/assets/Uploads/Publications/Sciencewise-Evaluation-Report-March2013.pdf

"Sciencewise Dialogue Projects - Impacts summary 2012", Summary of key impacts, March 2013 available at: http://www.sciencewise-erc.org.uk/cms/assets/Uploads/Evaluation-docs/Dialogue-Project-Impacts-Summary-March2013.pdf

"Evaluation of Sciencewise - ERC", Final Report by Diane Warburton, May 2011, available at http://www.sciencewise-erc.org.uk/cms/assets/Uploads/Publications/Sciencewise-Evaluation-Report-FINAL.pdf

"The best of Sciencewise reflections on public dialogue", Sciencewise-ERC, September 2014, available at: http://www.sciencewise-erc.org.uk/cms/assets/Uploads/Best-ofFINAL.pdf

"Strategic Priorities for Financial Year 2013/14", Sciencewise Steering Group Minutes, February 2013, available at http://www.sciencewise-erc.org.uk/cms/assets/Uploads/Publications/SW-SG-February-2013-P02-Strategic-priorities.pdf

"Strategic Priorities for Financial Year 2014/15", Sciencewise Steering Group Minutes, February 2014, available at http://www.sciencewise-erc.org.uk/cms/assets/Uploads/Meetings/SW-SG-February-2014-P02-Strategic-priorities.pdf

Dialogue project case studies, available at http://www.sciencewise-erc.org.uk/cms/dialogue-project-case-studies/

Independent project evaluation reports, available at: http://www.sciencewise-erc.org.uk/cms/project-evaluation-reports/

Dialogue reports, available at: http://www.sciencewise-erc.org.uk/cms/sciencewise-dialogue-projects/

"Sciencewise Theory of Change for Strategic Planning 2014-2015", Sciencewise-ERC, available at: http://www.sciencewise-erc.org.uk/cms/assets/Uploads/Evaluation-docs/Sciencewise-ToC-for-strategic-planning-April-2014.pdf

"The Government's Approach to Public Dialogue on Science and Technology", Sciencewise-ERC, available at: http://www.sciencewise-erc.org.uk/cms/assets/Uploads/Publications/Sciencewise-Guiding-PrinciplesEF12-Nov-13.pdf

"Big Data Public views on the collection, sharing and use of personal data by governments and companies", Sciencewise-ERC, available at: http://www.sciencewise-erc.org.uk/cms/assets/Uploads/SocialIntelligenceBigData.pdf

"Departmental Dialogue Index", Sciencewise-ERC, available at: http://www.sciencewise-erc.org.uk/cms/assets/Uploads/Strategic-Research-documents/DDI-Tool.pdf

"Social Media – based Public Dialogue: Potential, Theory and Practice", Sciencewise-ERC, Final report, available at: http://www.sciencewise-erc.org.uk/cms/assets/Uploads/Social-Media-Public-DialogueFINALPDF.pdf

"International Comparison of Public Dialogue on Science and Technology", Sciencewise-ERC, undated, available at: http://www.wilsonielsen.com/wp-content/uploads/2011/05/International-Comparison-of-Public-Dialogue.pdf

Annex 2 – History of Sciencewise and its international context

A brief history of Sciencewise

Its beginnings

Public and policy debates on issues involving Science and Technology in the late 1990's were dominated in the UK by the issues of BSE, nuclear waste management and genetically modified (GM) crops. These matters formed the background to the Science and Technology Select Committee's report on 'Science and Society' in 2000[83]. This report recognised that the public's confidence on science and technology had been shaken by recent science-based controversies, and that this unease had been exacerbated by top-down and one-way models of science communication. In particular, and as a response, the report argued that dialogue with the public needed to become embedded in policy making and in science itself, not "as an optional add-on to science-based policy making, … but [as] a normal and integral part of the process" (para 2.65). Two-way forms of science communication were promoted, where scientists were called upon to declare the values that underpin their work, and to engage and understand the values of the public.

The House of Lords report led to a wave of one-off initiatives aimed at developing novel ways for publics and scientists to have conversations on the issues posed by new and potentially controversial science and technology. This included the Government-run *"GM Nation"* public debate in 2002–2003, set up as a citizen engagement exercise aimed at generating wider public involvement in the issues associated with GM crops and foods. Nevertheless, it was later analysed that this attempt aimed at public dialogue had taken place too late, when policy decisions had already been taken and when views were already polarised, and that it would be more profitable in future that future dialogue with the public should take place earlier in the policy cycle. This perspective was endorsed in the HM Government 10-year Science and Innovation Framework[84], which made a specific commitment to upstream public engagement,

> *"to enable [public] debate to take place 'upstream' in the scientific and technological development process, and not "downstream" where technologies are waiting to be exploited but may be held back by public scepticism brought about through poor engagement and dialogue on issues of concern."* (page 105)

The government asked the Council for Science and Technology to consider how better use could be made of public debate and dialogue in developing policies for science and technology. The resultant report, "Policy through Dialogue"[85] called on the government to develop a "corporate memory" about how to do public dialogue well, and to use dialogue on potentially contentious issues, ideally before they become polarised in the media, to help inform and improve its decision-making processes. Sciencewise was launched in 2004 to help government develop this "corporate memory"

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[83] *"Select Committee on Science and Technology Third Report",* 2000. House of Lords report available at http://www.publications.parliament.uk/pa/ld199900/ldselect/ldsctech/38/3803.htm#a3, accessed 15 January 2015.

[84] *"Science and Innovation Investment Framework 2004–2014"*. HM Treasury report available at http://news.bbc.co.uk/nol/shared/bsp/hi/pdfs/science_innovation_120704.pdf, accessed 15 January 2015.

[85] *"Policy through Dialogue".* Council for Science and Technology report available at http://webarchive.nationalarchives.gov.uk/20130705054945/http://www.bis.gov.uk/assets/cst/docs/files/whats-new/05-2180-policy-through-dialogue-report.pdf, accessed 15 January 2015.

and to try to change the culture of decision-making in government (Sykes and Macnaghten 2013). Following an initial round of projects, and in response to Lord Sainsbury's review of Science and Innovation policies in 2007[86], the Sciencewise programme was re-launched in 2008 as the Sciencewise Expert Resource Centre (Sciencewise-ERC) to act as the UK's national centre for public dialogue in policy making involving science and technology issues. This role moved the emphasis of Sciencewise's activities away from the provision of grant funding for public dialogue (PD) to becoming a more strategic provider of expertise for Government departments and bodies wishing to incorporate public dialogue into their policymaking. The previous Sciencewise grant funding model was based loosely on the older Copus approach (Committee on the Public Understanding of Science), where dialogue projects were run and owned by the organisation receiving the grant. With the adoption of the new model, the topic of the dialogue was chosen by the Government departments in partnership with Sciencewise, enabling the outputs of dialogues to have a closer link to policy making and to the business of government. In short, this change of emphasis was aimed to strengthen the so-called "policy hook" of the dialogue activities (Sykes and Macnaghten, 2013).

Sciencewise is now nearing the close of its second funding period as Sciencewise. The first period (2007-2011) was managed by the Department of Trade and Industry (DTI), with AEA Technology (now Ricardo-AEA) acting as the delivery contractor. For the current period (2012-2015), Sciencewise has been managed through a partnership of Ricardo-AEA, the charity Involve and the British Science Association (BSA), with BIS (the Department for Business, Innovation and Skills) acting as the departmental sponsor.

The international context

As a BIS sponsored programme, Sciencewise has a remit that allows it to support any government department or agency to carry out public engagement on an issue pertaining to science and technology. This remit gives the programme a high degree of autonomy and allows it to occupy a cross-departmental space that public bodies can draw upon for support. This remit enables the programme to support projects that will feed into public policy that has a science or technology component.

One of the key features of the programme is its co-funding element. Currently, BIS provides through Sciencewise up to 50% of the total costs of carrying out deliberative dialogue with the public. This enables the programme to help departments overcome one of the barriers associated with carrying out dialogue activities: the cost[87]. In this aspect, the programme can be seen as a funding source that facilitates the greater use of public dialogue among departments.

Nevertheless, it should be recognised that the co-funding element only represents one part, albeit a significant one, of the programme's activities. Sciencewise's team of Dialogue and Engagement Specialists provide hands-on support to public bodies to help manage and deliver dialogue projects. In this sense, the programme performs a key advisory role and assists departments in overcoming barriers relating to their capacities to carry out dialogue.

Aside from directly supporting departments to carry out and evaluate public engagement activities, the programme also plays a significant role in terms of critical reflection and invoking discussion around dialogue methods. This is evident from a number of thought pieces and the research that

[86] "Implementing 'the race to the top'". Lord Sainsbury's review of Government's Science and Innovation Policies. Available at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/243607/9780108507175.pdf, accessed 15 January 2015.

[87] As identified by survey respondents in the Sciencewise – Interim Evaluation 2012

the programme has sponsored. Such outputs tend to address conceptual and methodological aspects of public dialogue with a broad aim of promoting its value and improving the processes associated with it.

Clearly, the above points only provide a brief overview of the programme's role within the wider public engagement and policy making contexts. Yet, these points provide a basis for identifying the extent to which comparative programmes exist elsewhere internationally. The next sub-section will identify whether such programmes exist and the extent to which they are comparable with the overall Sciencewise programme.

Other international programmes and initiatives

Previous attempts to compare public engagement on science and technology issues across national contexts have examined factors such as formal[88] and informal[89] engagement and the scale and breadth of participation. For instance, a study commissioned by Sciencewise in 2011[90] used a set of metrics to score the comparative levels of public engagement on science and technology issues across a subset of countries. The metrics were scored from 0 to 10 for each country using a combination of desk research and qualitative interviews. The study found that the Netherlands, Switzerland and Denmark ranked highest overall on the eight metrics, while Japan ranked lowest (see Table A1-1).

Similarly, the MASIS (Monitoring Policy and Research Activities on Science in Society in Europe) European FP7 project provides further insights into the comparative levels of public engagement in science and technology across European countries[91]. The study collected data on trends and patterns of science in society for 38 countries and found that while formal procedures and programmes for public engagement on science and technology are in place in many countries, the actual levels of participation vary significantly. The study points to the Nordic countries as examples of countries with formalised procedures and high-levels of public involvement in science and technology decision making. It argues that this reflects a more 'corporatist' political culture of decision making, whereby stakeholders and NGOs are systematically included in the policy making process.

The MASIS study also highlights that there are several countries with no formalised procedures for public engagement in science and technology decision making. These countries include Cyprus, the Czech Republic, Hungary, Serbia, Macedonia and Bulgaria. It is stated that these countries have no strong traditions or practices for public participation, and that issues of inclusive governance in science and technology are seen as having less importance. The findings, therefore, suggest that it is unlikely for comparative programmes to Sciencewise to become established in these countries.

[88] Engagement activities organised by government departments/agencies

[89] Engagement activities organised outside of the policy sphere by academia and civil society

[90] BIS/Sciencewise-ERC (2011) International Comparison of Public Dialogue on Science and Technology accessed at: http://www.wilsonielsen.com/wp-content/uploads/2011/05/International-Comparison-of-Public-Dialogue.pdf, accessed 7 November 2014.

[91] MASIS (Monitoring Policy and Research Activities on Science in Society in Europe) (2012) European FP7 project, Final Synthesis Report, Niels Mejlgaard, Carter Bloch, Lise Degn, Tine Ravn and Mathias W. Nielsen. Available at accessed at http://c.europa.eu/research/science-society/document_library/pdf_06/monitoring-policy-research-activities-on-sis_en.pdf, accessed 25 November 2014.

Table A2-1: Public dialogue on science and technology in a selection of countries – Key Countries								
Metrics	**Denmark**	**France**	**Germany**	**Japan**	**Netherlands**	**Switzerland**	**United Kingdom**	**United States**
Investment in Engagement	8	4	5	3	10	8	7	3
Embeddedness	8	4	5	1	9	8	7	2
Impact	7	2	4	2	8	7	5	3
Scale of participation	4	6	2	5	6	5	3	3
Breadth of participation	6	3	4	6	6	6	5	6
Transparency	6	2	3	4	6	6	7	6
Formal engagement	9	3	5	2	10	9	4	1
Informal engagement	2	8	5	4	3	3	6	7
Total	**50**	**32**	**33**	**27**	**58**	**52**	**44**	**31**
Source: BIS/Sciencewise-ERC (2011) International Comparison of Public Dialogue on Science and Technology accessed at: http://www.wilsonielsen.com/wp-content/uploads/2011/05/International-Comparison-of-Public-Dialogue.pdf on 07/11/14								

Although these studies provide an important overview of the levels of public engagement on science and technology across individual countries, they do not offer a systematic comparison of individual programmes at either the European or global levels. While such a task is clearly beyond the scope of this evaluation, some prominent examples of national programmes / institutions have been analysed to identify their similarities and differences with respect to the Sciencewise programme.

The discussion that follows presents a comparison of the Sciencewise programme against three well known Technology Assessment (TA) Institutes, as well as a number of EU-funded projects. The broad literature indicates that TA-Institutes continue to play a key role in carrying out formal public engagement activities on science and technology issues, with this providing the justification for their inclusion in this comparative analysis[92].

Three institutes have been selected from the countries that scored highest in terms of formal engagement in the aforementioned Sciencewise study (see Table A1-1): the Netherlands (Rathenau Institute), Denmark (Danish Board of Technology) and Switzerland (TA-Swiss). It should be noted that not all TA-Institutes across all of the countries engage in participatory methods. For instance, the German TA Institute (The Technology Assessment Office at Bundestag) relies on an expert based approach to technology assessment and thus has no public engagement element; this is also the case in France and the United States.

Rathenau Instituut (Netherlands)

The Rathenau Instituut (RI) is the Netherland's key research and debate centre for science, technology and society[93]. It is widely considered as another pioneer in terms of public engagement on science and technology decision making, and has organised deliberative activities across a broad range of technology domains[94].

In March 2012, the RI had 55 employees and a budget of €5.23 million, making it significantly larger than the Sciencewise programme[95], and possibly the largest programme of its type globally[96]. A large proportion of the RI's funding comes from the Ministry of Education, Culture and Science. To guarantee its independence, the RI obtains no more than 25% of its funding from external clients[97].

[92] As an example see Sykes, Kathy & Macnaghten, Phil (2013) "Responsible Innovation – Opening Up Dialog and Debate", Chapter 5, Responsible Innovation, First Edition. Edited by Richard Owen and John Bessant. John Wiley & Sons

[93] Koninklijke Nederlandse Akademie van Wetenschappen (KNAW), Rathenau Institute. Available at https://www.knaw.nl/en/institutes/rathenau-instituut, accessed 20 January 2015

[94] Sykes, K & P, Macnaghten (2013) "Responsible Innovation – Opening Up Dialog and Debate", Chapter 5, Responsible Innovation, First Edition. Edited by Richard Owen and John Bessant. John Wiley & Sons

[95] Koninklijke Nederlandse Akademie van Wetenschappen (KNAW), "Self-Assessment Rathenau Instituut". Available at: https://www.knaw.nl/shared/resources/instituten/bestanden/zelfevaluatierathenauinstituut20062011.pdf accessed 20 January 2015

[96] BIS/Sciencewise-ERC (2011) "International Comparison of Public Dialogue on Science and Technology". Available at: http://www.wilsonielsen.com/wp-content/uploads/2011/05/International-Comparison-of-Public-Dialogue.pdf, accessed 07 November 2015

[97] Rathenau Instituut, "Who we are, About the institute". Available at http://www.rathenau.nl/en/who-we-are/about-the-institute.html, accessed 20 January 2015.

The primary mission of the RI is to stimulate the formation of public and political opinion on science and technology[98]. To this end, the RI focuses on two key processes: Technology Assessment and Science System Assessment. Through the Technology Assessment process, the RI seeks to stimulate public and political debate on the social, ethical and political implications of modern science and technology. It uses the latter process to observe how the science system is organised and how it responds to scientific, social and economic change[99].

The process of initiating projects within the RI differs from the approach used by Sciencewise. The biannual Work Programme outlines the topics and developments that will guide the RI's activities during the coming years. To construct the work programme, regular consultation is maintained with the Institute's Programme Council, which consists of individuals from academia, business, politics and journalism. The RI'S Board then decides work themes to be pursued[100]. The finalised work programme is then sent to the Minister of Education, Culture and Science and it is discussed within Parliament in terms of the overall science policy budget. The specific projects are determined within the framework of the themes listed in the Work Programme and are formally approved by the RI Board. However, it should be noted that members of Parliament, as well as researchers, advisory bodies and interest groups, are also consulted during the process of specifying the projects[101].

The RI uses a variety of tools and methods to engage with the public. These include: focus groups, citizen panels, statistics, database analysis, questionnaires, interviews, visualisations, debates and presentations. The Institute's studies and policy briefs are said to often set the agenda for politicians, policymakers and the media. Furthermore, most of its projects are quoted in parliamentary documents, the national media and stakeholder websites[102].

Previous research by Sciencewise notes that the RI[103]:

> *"..does have a clear impact on decision-makers, with parliamentarians regularly lobbying the government as a direct result of the Institute's reports, and with government departments often actively requesting help in assessment and engagement activities." (page 29)*

Danish Board of Technology (Denmark)

The Danish Board of Technology (DBT) was established in 1986 and has been referred to as a pioneer of public engagement on science and technology[104], and its model of engagement has been

[98] Koninklijke Nederlandse Akademie van Wetenschappen (KNAW), "Self-Assessment Rathenau Instituut" Available at: https://www.knaw.nl/shared/resources/instituten/bestanden/zelfevaluatierathenauinstituut20062011.pdf , accessed 20 January 2015

[99] Koninklijke Nederlandse Akademie van Wetenschappen (KNAW), "Rathenau Institute". Available at: https://www.knaw.nl/en/institutes/rathenau-instituut, accessed 20 January 2015

[100] EPTA, Parliamentary Technology Assessment in Europe, "An Overview of 17 institutions and how they work". Available at http://www.oeaw.ac.at/ita/fileadmin/epta/epta-booklet.pdf (Accessed 20 January 2015)

[101] Vig, N.J & Paschen, H (2000) "Parliaments and Technology: The Development of Technology Assessment in Europe", State University of New York Press

[102] EPTA, Parliamentary Technology Assessment in Europe, "An Overview of 17 institutions and how they (Accessed 20 January 2015)

[103] BIS/Sciencewise-ERC (2011) "International Comparison of Public Dialogue on Science and Technology". Available at: http://www.wilsonielsen.com/wp-content/uploads/2011/05/International-Comparison-of-Public-Dialogue.pdf, accessed 20 January 2015

[104] For example, see Worthington (2012)

emulated across Europe[105]. Unlike Sciencewise, the DBT is a corporate foundation and is funded through a variety of sources including municipalities, regions, governmental agencies, the EU Commission and the European Parliament and charity foundations[106]. In 2012, the annual expenditure of the DBT was around 9 million DKK (€1.2 million)[107].

Each year the board makes a call for project proposals to be submitted by MPs, organisations, corporations or citizens and a limited number of these are selected 'full scale' projects (Jensen, 2005). The DBT undertakes the projects independently and then disseminates the results with policy makers. This is different to the approach used by Sciencewise, whereby government departments are encouraged to undertake public dialogue themselves[108].

The DBT uses a broad range of tools for public engagement including consensus conferences, large sale citizens' summits and local-level citizen hearings[109]. The consensus conference is arguably one of the best known methods used by the DBT[110]. Firstly, experts from different fields are gathered to produce introductory material for a given topic. This material is subsequently discussed by a citizen panel over two weekends. Alternative experts with different perspectives on the topic are then invited to participate and answer any queries that the citizen panel may have in the consensus conference (Jensen, 2005). The citizen panel then formulates a final report with their findings, which is subsequently presented to Parliament and the press[111].

Nonetheless, the impact of the Institute upon decision making is unclear. For instance, a European Study found that while a high proportion of the Danish Government was aware of consensus conferences (75%), only 13% believed that the conferences sometimes led to Parliamentary discussions, debates or initiatives, such as the issuance of laws or guidelines[112].

Furthermore, over the past decade there has strong divide in Danish politics between the left and right which has, in turn, decreased the level of discourse and common space amongst Parliamentarians[113]. As a result there has been a decreased call for independent policy

[105] Sykes, K & P, Macnaghten (2013) "Responsible Innovation – Opening Up Dialog and Debate", Chapter 5, Responsible Innovation, First Edition. Edited by Richard Owen and John Bessant. John Wiley & Sons

[106] Österreichische Akademie der Wissenschaften, Institute for Technology Assessment. Available at: http://www.oeaw.ac.at/ita/fileadmin/epta/chapters/02_organization.html, accessed 20 January 2015

[107] EPTA, Parliamentary Technology Assessment in Europe, "An Overview of 17 institutions and how they work". Available at: http://www.oeaw.ac.at/ita/fileadmin/epta/epta-booklet.pdf, accessed 20 January 2015

[108] BIS/Sciencewise-ERC (2011) "International Comparison of Public Dialogue on Science and Technology" Available at: http://www.wilsonielsen.com/wp-content/uploads/2011/05/International-Comparison-of-Public-Dialogue.pdf, accessed 20 January 2015

[109] Ibid

[110] Heierbacher,S (2001) "Board of Technology: Denmark". Available at: http://participedia.net/en/cases/board-technology-denmark, accessed 20 January 2015

[111] Heierbacher, S (2001) "Board of Technology: Denmark". Available at at http://participedia.net/en/cases/board-technology-denmark, accessed 20 January 2015

[112] BIS/Sciencewise-ERC (2011) "International Comparison of Public Dialogue on Science and Technology". Available at: http://www.wilsonielsen.com/wp-content/uploads/2011/05/International-Comparison-of-Public-Dialogue.pdf, accessed 20 January 2015

[113] EPTA, "Parliamentary Technology Assessment in Europe, An Overview of 17 institutions and how they work". Available at: http://www.oeaw.ac.at/ita/fileadmin/epta/epta-booklet.pdf, accessed 20 January 2015

assessments[114] from institutes such as the DBT. It has also been stated that the government has moved towards more direct engagement with the public rather than using intermediaries[115].

TA-Swiss

The Swiss Centre for Technology Assessment (TA-Swiss) is Switzerland's primary technology assessment institute and has operated since 1992. The institute is funded by the state as well as by third part independent organisations[116]. In 2009, the total budget for the institute was around 1,380,000 CHF (ca. £850,000) and approximately 20% of this is dedicated to public dialogue and engagement activities[117].

The TA-Swiss institute differs from the Sciencewise programme in how projects are chosen. The Institute constantly monitors new scientific and technological developments in order to identify new topics. It also takes on board suggestions from external experts or members of the TA-Swiss executive committee to construct a systematic survey of potential topics. Project managers then develop proposals for these topics and the TA-Swiss executive committee decides on which ones will be taken forward. Unlike Sciencewise, the Institute does not support departments to carry out their own public dialogues.

The Institute employs a variety of participatory methods (such as citizens' panels and focus groups) and also experiments with new approaches[118]. The participatory projects typically follow a set plan:

a. A project information brochure is compiled
b. This brochure is then used to brief public participants on the issues to be discussed
c. After the discussions, a synthesis report of containing the results of the discussions is formulated and issued
d. The report contains the different aspects of reasoning among the participants showing what was supported and not supported by the public participants as well as the reasons why, and
e. Lastly, the institute arranges media conferences and publishes articles to draw attention to the project[119].

With regards to the impacts of the programme, it is stated that the institute is widely recognised for the quality of its outputs and its impartiality[120]. This was also reflected in an interview carried out in

[114] Ibid
[115] BIS/Sciencewise-ERC (2011) "International Comparison of Public Dialogue on Science and Technology". Available at: http://www.wilsonielsen.com/wp-content/uploads/2011/05/International-Comparison-of-Public-Dialogue.pdf, accessed 20 January 2015
[116] EPTA, "Parliamentary Technology Assessment in Europe, An Overview of 17 institutions and how they work". Available at: http://www.oeaw.ac.at/ita/fileadmin/epta/epta-booklet.pdf, accessed 20 January 2015
[117] BIS/Sciencewise-ERC (2011) "International Comparison of Public Dialogue on Science and Technology". Available at: http://www.wilsonielsen.com/wp-content/uploads/2011/05/International-Comparison-of-Public-Dialogue.pdf, accessed 20 January 2015
[118] Ibid
[119] EPTA, "Parliamentary Technology Assessment in Europe, An Overview of 17 institutions and how they work". Available at: http://www.oeaw.ac.at/ita/fileadmin/epta/epta-booklet.pdf, accessed 20 January 2015
[120] EPTA, "Parliamentary Technology Assessment in Europe, An Overview of 17 institutions and how they work". Available at: http://www.oeaw.ac.at/ita/fileadmin/epta/epta-booklet.pdf, accessed 20 January 2015

a previous Sciencewise study[121] where it was commented that politicians are generally open to the results of TA-Swiss projects. It was also stated that, within the public sphere, it is seen as important that public engagement is not outsourced or influenced by commercial interests.

EU Supported Projects

Under the Seventh Framework Programme for Research and Technological Development, the European Commission has supported and funded a number of public engagement projects and initiatives focused on Science and Technology issues[122]. These projects and initiatives are presented in Table A2-1 below.

Table A2-2: EU Supported Public Engagement Projects and Initiatives

Project	Issue
ASSET	Epidemics and total pandemics
BEWATER	Water adaptation in global change within the context of the EU Blueprint (water legislation)
CASI	Sustainable and eco-innovation
CONSIDER	Civil society organisations and research governance
EJOLT	Environmental justice and conflicts
EMAPS	Electronic maps to assist public science
ENGAGE2020	Public engagement in Horizon2020
EUROBAROMETER	Public attitudes to science and responsible research and innovation
GAP2	Fisheries management at regional seas level in support of the Common Fisheries Policy (CFP) implementation
INPROFOOD	Sustainable food innovation
MAPPING	Privacy, property and internet governance
MARLISCO	Marine litter
NERRI	Neuro-enhancement
PACITA	Parliament and civil society in technology assessment (TA)
PE2020	Public engagement in Horizon2020
PERARES	Living Knowledge Network for civil society engagement in research
PLACES	Cities of scientific culture
R&DIALOGUE	Low-carbon society, carbon capture and storage (CCS) & renewable energy
ROBOLAW	Robotics: law and ethics
SATORI	Stakeholders acting together on the ethical impact assessment of research and innovation
SEISMIC	Urban sustainability
SFS	Sea for society: marine ecosystem services
SIforAGE	Active and healthy aging
SISCATALYST	Children as change agents
SPICES	The use of national media to solicit citizen contributions for shaping the Horizon 2020 Science with and for Society programme
SYN-ENERGENE	Synthetic biology
VOICEs	Pan-European citizen focus groups for shaping Horizon 2020 urban waste research

Source: European Commission, Research and Innovation, Public Engagement accessed at http://ec.europa.eu/research/swafs/index.cfm?pg=policy&lib=engagement on 19/01/15

[121] BIS/Sciencewise-ERC (2011) "International Comparison of Public Dialogue on Science and Technology". Available at: http://www.wilsonielsen.com/wp-content/uploads/2011/05/International-Comparison-of-Public-Dialogue.pdf, accessed 20 January 2015

[122] European Commission, Research and Innovation, Science with and for society, "Public Engagement". Available at http://ec.europa.eu/research/swafs/index.cfm?pg=policy&lib=engagement, accessed 08 December 2015

A noticeable characteristic of these projects is that they tend to be particularly specialised and narrow in terms of their remit (i.e. CASI focuses on sustainable innovation; NERRI looks at neuro-enhancement, etc.). This is in contrast to the Sciencewise programme, which has a broader remit to support public engagement and dialogue on any policy issue that has a scientific or technological component.

It is also notable that a number of the projects do not have a strong emphasis on the workshop-style approach to public dialogue that is promulgated by Sciencewise. For instance, Eurobarometer uses a predominantly survey based approach to capture attitudes towards certain issues. Moreover, other projects such as ENGAGE2020, PE2020 and CONSIDER are focused on the promotion and mapping of existing public[123] engagement activities within science and technology policy making. These projects do not exist explicitly to support departments in initiating and using public dialogue, as is the case with Sciencewise.

The VOICE's project is arguably the most comparable with Sciencewise, in terms of its broad aims and the type of engagement methods used. Using small citizen focus groups[124], the project initiated a pan-European consultation on urban waste research across 33 locations in 27 EU countries. Around 1,000 European citizens were engaged in total and the results of the exercise fed directly into the new Horizon 2020 Framework Programme for Research and Innovation[125]. However the comparability between methods employed by the VOICEs project and Sciencewise is limited. For instance, policy makers were not included within the VOICEs focus group sessions, whereas this is something that the Sciencewise programme actively encourages. Moreover, the VOICEs project used the non-profit organisation Ecsite (The European Network of Science Centres and Museums) to facilitate the events, which varies from the use of independent, private sector contractors by the Sciencewise programme.

In the broader context, the funding provided by the European Commission could be seen as fulfilling a similar role to the Sciencewise programme in terms of encouraging the use of dialogue. Nevertheless, as indicated by the above projects, the funding is not specifically earmarked for government departments. Instead contracts are carried out by Institutes predominantly within the science and communication sector (e.g. Ecsite). Furthermore, the European Commission does not provide a set of advisors (or dialogue engagement specialists) to aid the facilitators of such dialogue events.

Conclusions on international context of public dialogue initiatives

Although this analysis does not provide a comprehensive examination of all public engagement programmes internationally, it does indicate that the Sciencewise programme may be unique in terms of its approach, its co-funding model and its advocacy role in government.

The available literature has shown that formal public engagement in science and technology decision making varies widely across countries. Where formal public engagement has taken place, the evidence indicates that TA-Institutes have played a key role. It can be argued that some of the tools used by TA-Institutes are similar to those promulgated by the Sciencewise programme. For instance, the Institutes use a broad range of engagement methods including focus groups, citizen panels and consensus conferences, which tend to feed into policy making (especially in the case of the Rathenau

[123] Civil society organisations in the case of CONSIDER

[124] No more than 10 participants per group

[125] Citizen's Active Participation in European Research, Voices for Responsible Research and Innovation, accessed at http://www.voicesforinnovation.eu/files/VOICES_at_a_glance.pdf on 20/01/15

Instituut (RI)). All of these could fall under the definition of public dialogue in a broad sense. However, the approaches used to initiate dialogues differ significantly.

From the examples analysed above, it could be argued that the process of operationalizing public engagement within TA-Institutes is more internally-driven. Projects are typically decided upon and carried out independently and there is an emphasis on sharing the results with government to influence decision making. In contrast, the Sciencewise programme takes a more externally orientated approach, as it seeks to encourage government departments to undertake dialogue projects themselves and to embed the process as best practice. The co-funding aspect of the programme plays a key role and can be considered a unique experiment in how policy makers are encouraged to engage with the public on science and technology issues.

The limited evidence indicates that there are few comparable examples of government-funded programmes that operate within the cross-departmental space that Sciencewise occupies. While some countries may set out guidelines for departments to engage with the public, there seems to be no comparable programme that provides a pool of expertise and funding which officials can draw upon to conduct their own public dialogues.

Annex 3 – Typologies of policy timing and impacts

Table A3-1: Typology of projects during 2012-2015 (up to end of 2014) Note: CB – Commissioning Body; CS – Case Study; DR – Dialogue Report; ER – Evaluation Report; PD – Public Dialogue		
Model	**Project**	**Justification**
Upstream	Horizon scanning	The CS states that this project was carried out in order help Sciencewise and BIS develop a list of policy issues that are likely to face the UK Government in the next five to 10 years; of scientific and technological developments that are likely to intersect with those issues; and of public questions and concerns that might be raised on the basis of those intersections. In this respect, the evaluators deemed the study a success by stating that the workshop series 'yielded significant socially oriented insights otherwise absent from scientists' adjudications of science and technology research/policy priorities'. This project can thus be deemed as upstream because it was conducted as a scoping exercise to identify potential future policy areas for dialogue.
	Stratified medicine	This project can be considered upstream in the policy process for a number of reasons: • Firstly it was stated in the ER by an OG member that, *'The benefit of this is not today or tomorrow, but in 18 months' time'* indicating that this dialogue was positioned at the very early stages of policy thinking. • Another oversight group member claimed that the dialogue was "upstream enough that all the major decisions haven't yet been made, but not so upstream that there's nothing to talk about". • Furthermore the ER indicates that there was no specific policy for the dialogue to feed into by stating 'Impacts take time to emerge, especially when there is no specific policy decision point that the dialogue is feeding into. This appears to be at least partly the case here'. • The preceding points are further supported by the view of a SW team member that there was no policy as such for this dialogue, as stratified medicine is part of the future of medicine.
	Space weather	As the ER and CS are at the time of writing unavailable it is difficult to classify the dialogue according to the three models. Therefore evidence from interviews indicates that any policy decisions were far upstream: • It was stated by interviewee from the commissioning body that the purpose of the project was to inform the policy of governments and companies in respect of space weather and the consequences on people and infrastructure. • However, another interviewee commented that there wasn't a particular "pending" policy decision that was evident from the OG member's perspective.

Table A3-1: Typology of projects during 2012-2015 (up to end of 2014) Note: CB – Commissioning Body; CS – Case Study; DR – Dialogue Report; ER – Evaluation Report; PD – Public Dialogue		
Model	**Project**	**Justification**
Upstream	Wellbeing* (loneliness and low pay)	This project is difficult to assess because the CS and ER were not published at the time of writing. Nevertheless, the broad context of the project and the evidence gained from interviews and project documentation published on the website indicates that this project fits into both upstream and downstream models (e.g. implementation of policy). The project had three strands: Community rights, Loneliness and low pay. The loneliness and low pay strands were in the very early stages of thinking about how wellbeing could be considered.
Overlap	Nanotechnologies	Again, it is difficult to categorise this project as it is relatively new and does not have a published ER or CS. Nevertheless, the evidence gained from the evaluation indicates that this dialogue has elements of both upstream and honest broker models. This assumption is based on the information gained from the interviewee from commissioning body involved with the project who stated that the dialogue could inform on a range of applications and policy areas as in some areas the regulation is more developed while in others it is not. Moreover, this assumption is supported by key objectives of the dialogue which were, 'ensure public views are taken into account in UK Government policy (and subsequent recommendations to the EU and EC)' and to 'provide opportunities to understand public aspirations and expectations and what are seen as key priorities'. This indicates that the dialogue had both elements of scoping the public opinion on different issues (upstream) and articulating different policy options (honest broker).
Honest Broker	Mitochondrial replacement	This project can be seen as fitting into the honest broker model of public dialogue. As stated in the case study, the dialogue was commissioned to advise the Secretary of State for Health and the Secretary of State for BIS on the public's views of the ethical issues involved in the techniques. The ER supports the categorisation of this project under the honest broker model as it states, the process 'has been treated as a success in testing public approval necessary for expediting regulatory policy'. By definition the honest broker model tends to position publics as 'reflective' subjects who contemplate the conditions of whether and how to proceed with a controversial domain of science. It is thus reasonable to categorise the dialogue under the honest broker model.
	Longitude prize	As stated in the dialogue report, Nesta and BIS commissioned the project to identify public and stakeholder views of Longitude 2014, including final prize challenges and the prize challenge selection criteria. In this sense it can be considered an honest broker dialogue as there was a clear decision to be made and informed on by the public. Nesta was required to use the public dialogue evidence to help the Longitude Committee ensure that whatever challenges were selected had taken into account public views. However, the ER indicates that the dialogue had limited impact on the Longitude Committee. For instance, it was stated in the ER that two members of the Committee had not read the report and some of the clear messages had not been taken on board.
	Water Catchment	As stated in the Sciencewise project webpage, the aim of the dialogue was to deliberate a range of technologies and options for improving water quality and sustainability as well as considering trade-offs and issues. The case study states that the purpose of

Table A3-1: Typology of projects during 2012-2015 (up to end of 2014) Note: CB – Commissioning Body; CS – Case Study; DR – Dialogue Report; ER – Evaluation Report; PD – Public Dialogue		
Model	**Project**	**Justification**
	Planning	the project was to aid the commissioning body to develop a new policy framework to manage water quality and water resources.
	Patient and public engagement	As stated in the ER, the dialogue project was seen as having 'already achieved significant impacts on policy and decision making' and can thus be deemed to fit into honest broker model. For instance, the results of the dialogue were presented by the HRA to the House of Commons Select Committee on Science and Technology inquiry on clinical trials in July 2013. Furthermore, the dialogue was referred to by the Department of Health and the Academy of Medical Sciences in their own evidence to the Committee. Evidence from the evaluation also supports the dialogue's inclusion under the honest broker model. For instance, it was stated by an interviewee that HRA had given a clear signal that they wanted to use public dialogue early in the policy cycle in order to ensure that patient voice is involved in policy development.
	Leap Seconds	This dialogue project does not have a published ER or CS therefore it is difficult to categorise this project based on the available literature. However, findings from the evaluation indicate its inclusion under the honest broker model. The dialogue had two clear policy options and can thus be included under the honest broker model.
	Animal research	The aim of this project (as stated by the CS) was to explore what research organisations need to do to be more transparent and accountable in the eyes of the public. The ER indicates that the views from the workshops were fed into the drafting of the Concordat public consultation documents and used to inform the Concordat members of the more in-depth views and values of the public. It was stated in the ER that the dialogue 'provided solid reassurance that the Concordat is indeed in line with public views' and that there had been 'some small but real changes to the Concordat and the associated guidance document'. Based on this assumption it is reasonable to categorise the dialogue under the honest broker model.
	Bioenergy distributed dialogue	The ER for this project states that it was intended to "allow the diverse perspectives of a range of UK residents, in the area of bioenergy, to be articulated clearly and in public in order that future policies can better reflect these views, concerns and aspirations". However, the ER does not indicate that discussion was formed around a specific policy area. Rather it describes the impact of the dialogue in terms of its impacts upon the team that ran the events and the participants. Furthermore, the ER states that 'there is little evidence that the results of the dialogue events are being used to inform bioenergy research in the institutions where they were held'.
Overlap	NEA	The overall aim of this project is to inform the development of policy priorities for the natural environment based on a public assessment of the work of the UK National Ecosystem Assessment (NEA) and National Ecosystem Assessment follow on (NEAFO).

Table A3-1: Typology of projects during 2012-2015 (up to end of 2014) Note: CB – Commissioning Body; CS – Case Study; DR – Dialogue Report; ER – Evaluation Report; PD – Public Dialogue		
Model	**Project**	**Justification**
	SWMIs	As stated in the dialogue report, the dialogue was designed to enable public views, ideas and concerns to be fed into final decisions and priorities for the Environment Agency's updated River Basin Management Plans and inform the approach to meeting other Water Framework Directive commitments. The ER indicates that the dialogue process was successful on stimulating debate on specific issues i.e. significant water management issues (SWMIs). However, it is unclear whether the dialogue was framed around a specific policy. For instance although the ER states that findings are being shared across the relevant functions of the Environment Agency, it also comments that 'the impacts however are likely to be more focussed on engagement processes rather than the content of policies'. It is unclear whether this dialogue can be classified under the defined models.
	Cambrian mountains	The ER indicates that the process enabled public participants to give their perspective on ecosystem goods and services. Participants were also 'able to discuss complex issues and communicate their views to a forum of Environment goods and services (EGS) policy specialists and technical experts'. It is further stated in the CS that 'The project generated simple quantitative measures and more in-depth qualitative assessments to describe the perceptions of different groups, including the public, of the four ecosystem goods and services….and the potential for Payment for Ecosystem Services (PES) systems'. Lastly, it was acknowledged that the dialogue informed thinking on the Environment Wales Bill.
Downstream	Trajectories for carbon emission reductions (CCC)	The CS states "The public dialogue influenced the second part of the CCC's formal advice to the Government on the 4th Carbon Budget, published in December 2013". The dialogue project began in August 2013, specifically to feed into this policy to explore public acceptability of 4th carbon budget, according to the evaluation report.
	Wellbeing* (community rights)	The key interviewee for this project stated that there was already a community rights strand that had a specific government agenda. The dialogue was therefore framed on how the agenda could be implemented and thus very downstream in nature.
	Bovine TB	As stated in the Defra DR, the aim of the project was to engage a broad range of stakeholders and publics in the debate about bovine TB control measures and the future bovine TB eradication strategy. Insights from the project documentation as well as the evaluation indicate that there was already a policy put in place and that the objective of the dialogue was to feed into the development of a future Bovine TB strategy. Some issues were highlighted around the timing of the project, for instance the ER states that the 'dialogue was clearly framed to be fully relevant to policy makers, although timing was tight to allow full consideration of the findings in policy making'.
	Shale gas	Responses from the evaluation suggested that this project was carried out quite late in the policy cycle and was downstream. The evaluation report states that the project's primary focus was not to explore public attitudes towards DECC's policy on

Table A3-1: Typology of projects during 2012-2015 (up to end of 2014) Note: CB – Commissioning Body; CS – Case Study; DR – Dialogue Report; ER – Evaluation Report; PD – Public Dialogue		
Model	**Project**	**Justification**
		unconventional gas and oil; and the Sciencewise website indicates that the key aim of this project was to explore how to engage with communities on shale gas and oil and to test out how best to explain the science around its extraction.
	Rothamsted	As stated in the DR, Rothamsted commissioned the public dialogue to gather considered public views on the kinds of guiding principles that should inform Rothamsted's approach to working with industry. More specifically the ER states that the dialogue set out to inform Rothamsted Research's Knowledge Exchange and Commercialisation Strategy. The project can therefore be deemed downstream in nature.
	MRWS	As stated in the ER, the public dialogue was commissioned by DECC to provide a deeper understanding of the awareness of the general public's awareness of the revised site selection process for a geological disposal facility and for their input to feed into how the selection process will work and how the consultation questions are presented.
Other	Patient Data	Currently on-going, about to begin, or relevant information is not available.
	UK food supply challenges	
	John Innes Centre	
	Flood risk Communications	
	Generic Design Assessment	
	Marine Scotland	
Sources: 1. Responses from evaluation 2. Materials taken from the Sciencewise website project portal, accessed at http://www.sciencewise-erc.org.uk/cms/sciencewise-dialogue-projects/ * This dialogue had several policy areas being investigated		

Table A3-2: Project impacts mapped to the TAMI typology (based on evaluation reports, where available)				
Project	**Policy timing model**	**Impact type**		
		Raising Knowledge	**Forming Attitudes / Opinions**	**Initialising Actions**
Completed projects with evaluation reports published (as shown in Table 6-1)*				
Horizon Scanning (using CsAP output)*	Upstream	**Social mapping** Yielded significant socially orientated insights otherwise absent from scientists' adjudications of S & T research/policy priorities (ER). Generated important new learning about public attitudes to public dialogue and ideas for co-ordinating future dialogue exercises (CS)	**Agenda setting** PD helped to develop a list of policy issues and S & T developments that may interact with those issues (CS) **Mediation** Illuminated scientific concerns and relativised them to the world of public citizens (ER)	**New decision making process** Set a precedent for public dialogue within policy horizon-scanning and established a need for more frequent horizon-scanning activity more generally. (CS)
Stratified medicine	Upstream		**Mediation** Stakeholders talked about the dialogue having had an effect on them regarding how they communicate around stratified medicine (ER)	**New decision making process** Influenced the views of Innovate UK and stakeholders on working with the public in the future (ER)
Longitude Prize	Honest broker			**Decision taken** Some evidence that public views did influence the final choice of challenges. The dialogue did influence the criteria to select the challenges (ER)
Mitochondria replacement	Honest broker		**Re-structuring the policy debate** The dialogue findings were fed directly into HFEA advice to Government on the public view, which contributed to Government considerations on whether to change the law to allow clinical practice of mitochondria replacement (CS). CB stated that the PD helped enormously to formulate the policy advice given to the	**Decision taken** CB also stated that the PD directly fed into the law potentially being changed (CS)

Table A3-2: Project impacts mapped to the TAMI typology (based on evaluation reports, where available)				
Project	**Policy timing model**	**Impact type**		
		Raising Knowledge	**Forming Attitudes / Opinions**	**Initialising Actions**
			Government (CS)	
Patient and public engagement	Honest broker		**Agenda setting** The project fed directly into the wider debate launched by the HRA on the transparency of research through publication of research findings. The HRA published its views in its paper 'Transparent Research' (May 2013), which refers directly to the dialogue project findings (CS) The results are also being fed into the wider Research Governance Framework, which is being revised in 2014 by the HRA for research across the UK and, in the longer term, into revision of the Governance Arrangements for Research Ethics Committees (CS)	**New decision making process** The HRA has developed a new public involvement strategy and a communications strategy to guide its own work, drawing on the dialogue findings (CS) **Decision taken** The findings of the dialogue triggered the HRA to develop guidance for researchers on 'Information for patients at the end of a study' and informed the development of the 'HRA Strategy for public involvement' – both these initiatives were consulted on in late 2013/early 2014 (CS). This has also led to the commissioning of a new dialogue project.
Animal Research Dialogue	Honest broker		**Agenda setting** Revealed a number of nuanced arguments that exist about the harms and benefits of animal research (CS) **Re-structuring the policy debate** PD provided solid reassurance that the Concordat is indeed in line with public views (ER)	
Bioenergy distributed dialogue	Honest broker	Information on how dialogue findings were used not available for dialogue project evaluators at time of reporting – not considered in this analysis of impacts		
Cambrian mountains	Honest broker/ Downstream			**New decision making process** Natural Resources Wales has developed a different way of

Table A3-2: Project impacts mapped to the TAMI typology (based on evaluation reports, where available)				
Project	Policy timing model	Impact type		
		Raising Knowledge	Forming Attitudes / Opinions	Initialising Actions
				doing things as a result of the project, working much more closely with stakeholders and people on the ground, and going beyond working in 'silos' (CS) **Decision taken** The Welsh Government acknowledges that the project informed thinking on the Environment (Wales) Bill (CS)
SWMIs	Honest broker/ Downstream	**Social mapping** A degree of insight into how the public feels management activities should be paid for although no clear recommendations (ER)		**New decision making process** Process particularly appears to have instilled substantially more confidence within the Environment Agency to work with the public as water management policy and practice develops at both a national and catchment level (ER)
Rothamsted	Downstream	**Policy analysis** Results of the public dialogue were seen to add weight to any negotiations Rothamsted has in future with industry, the media and others (ER)	**Re-structuring the policy debate** The main achievement of the dialogue to date has been the dialogue's reinforcement that Rothamsted is working in a way that is commensurate with the expectations and interests of the public (ER)	
Shale Gas	Downstream	**Social Mapping** "The emerging findings are being used, alongside other sources of evidence, to develop thinking around public engagement on shale gas. Furthermore, it is already informing the design of local		

Table A3-2: Project impacts mapped to the TAMI typology (based on evaluation reports, where available)				
Project	Policy timing model	Impact type		
		Raising Knowledge	Forming Attitudes / Opinions	Initialising Actions
		events around shale gas" (ER)		
MRWS Siting	Downstream	**Social Mapping** Increased knowledge of planning and community engagement elements (ER)	**Mediation** Initial cynicism and shifts in thinking encountered from public participants. DECC and stakeholder participants recognised the need to engage communities (ER) **Re-structuring the policy debate** The need for transparent and open process was identified in the public dialogue and considered within the white paper. Also the "affirmation of voluntarism" was identified during the dialogue and considered in the White paper (ER)	**New decision making processes** DECC decision to include more work with communities in the White Paper was influenced by the dialogue experience (ER)
Citizen dialogue on bovine TB	Downstream	**Social mapping** The impacts on the strategy appear to be more about increasing the levels of confidence that Defra had in particular measures and how they should be explained and presented, rather than introducing new ideas or changing the proposed mix of measures in the strategy (ER)	**Mediation** "Part of the framing at the start of the dialogue was to consciously focus discussions across all parts of the strategy including the different control measures." The dialogue enabled DECC to explain issues more clearly in the strategy document (ER)	
CCC	Downstream	**Social mapping** "…and flagging potential public concern about specific technologies (e.g. Shale gas, Carbon Capture and Storage)" (ER)		**Reframing of debate** For example, the CCC point to the project influencing internal discussion about the future research needs, potentially arguing for a stronger role for assumptions about behaviour

Table A3-2: Project impacts mapped to the TAMI typology (based on evaluation reports, where available)				
Project	Policy timing model	Impact type		
		Raising Knowledge	Forming Attitudes / Opinions	Initialising Actions
				change in future assessments (ER) **Decision taken** The dialogue had a specific goal to feed into CCC's advice to government with the dialogue report as an annex to the main report (ER)
On-going or recent				
Embedding wellbeing	Upstream/downstream	Evaluation report not yet published		
Patient Data	Unallocated	Evaluation report not yet published		
UK food supply challenges				
Flood risk Communications				
Generic Design Assessment				
Marine Scotland				

Annex 4 – Oversight Group

Independent evaluation of Sciencewise

Oversight Group

Terms of reference

Overview of the evaluation

The aim of the independent evaluation is to review the overall activities, achievements and impacts of the Sciencewise programme 2012 - 2015 and to draw out lessons and opportunities for the future. The outcomes from the evaluation will be used by BIS to inform their decisions on future objectives, activities, delivery options and funding for this area of work.

The recent strategic planning process has identified long, medium and short term goals for Sciencewise. These are:

Long term goal / vision for Sciencewise:

All decision making involving science and technology takes public voices into account, at the right time and in the right way, and is better, more effective and fairer as a result.

Overall Sciencewise objective for 2012 - 2015:

To improve policy making involving science and technology across Government by increasing the effectiveness with which public dialogue is used, and encouraging its wider use where appropriate.

Interim goal for Sciencewise - 1:

EFFECTIVE ADVOCACY

Creating acceptability for the place and value of public dialogue (by decision makers and by public participants)

Interim goal for Sciencewise - 2:

STRUCTURAL AND CULTURAL CHANGE

Creating the structures and systems needed to support the use of public dialogue (by developing official guidance, incentives, rewards and skills)

Interim goal for Sciencewise - 3:

CREATING EVIDENCE

Demonstrating effective dialogue processes (by delivering and evaluating projects to provide evidence and learning for policy and decision making)

These long, medium and short term goals are the guiding framework for Sciencewise activities.

Role of the Oversight Group

In order to safeguard the independence of the evaluation, and draw on a wider pool of expertise and knowledge, a small high level Oversight Group is being established to guide the evaluation throughout. The role of the group is:

- To guide the development and delivery of the evaluation
- To offer advice on key elements of the evaluation research process - such as methodology, sampling and analysis
- To help identify and address potential issues or challenges with the evaluation
- To act as a sounding board for ideas and help test the approach to the evaluation
- To help sustain the quality and robustness at all stages of the evaluation.

The role of the Group is advisory. It is formally the responsibility of Sciencewise, through the Chair of the Steering Group and Sciencewise Evaluation Manager, to ensure the appropriate design and delivery of the evaluation and to make final decisions.

The role of the Group is to oversee the evaluation process and help to ensure that the evaluation conforms to the following principles:

- **Clarity** of purpose, scope, approach, levels of participation in and limits of the evaluation.
- **Rigorous and fit for purpose**: using appropriate methodologies
- **Constructively critical**: seeking understanding and learning rather than apportioning blame
- **Confidential**: respecting the sensitivity of data collected, and avoiding personal or reputational harm
- **Avoiding conflicts of interest**: including privileged access to information not being used for future competitive advantage
- **Proportionate**: with sufficient resources and in sufficient depth to meet evaluation objectives
- **Transparent**: the evaluation should be explained to participants and stakeholders, and evaluation findings published
- **Practical**: evaluation data sought can be collected, assessed and reported within timescale and budget
- **Useful**: evaluation findings should be reported in accessible language and in a form that is useful for learning and to provide evidence of impacts, what works, and lessons for the future
- **Independent**: from commissioners, funders and participants
- **Credible**: status and reputation of evaluator, and use of effective evaluation frameworks and methodology.

In practical terms, it is expected that the Group will comment on:

- Potential evaluators to be invited to tender to deliver the evaluation
- The tenders from potential contractors received in September 2014 (this is likely to be a sub-group of the full Group)
- Details of the scope, approach, levels of participation in and limits to the evaluation.
- The main questions that the evaluation will consider
- Draft and final reports of the evaluation

Time commitment

The evaluation will take place over a six month period - September 2014 to March 2015. Members are expected to commit around 3 working days during that period.

Members will be asked to attend two formal meetings: an inception meeting on 10th September 2015, and a meeting to consider the draft evaluation report on 5th February 2015. They may also be asked to give advice on an ad hoc basis during the evaluation.

Members will be reimbursed for travel expenses.

Additional advice and support may be requested during the evaluation process (September 2013 to February 2015).

Oversight Group membership criteria

The link into the existing Sciencewise structure will be through Professor Judith Petts CBE, Pro-Vice-Chancellor, University of Southampton. Professor Petts is Co-Chair of the Sciencewise Steering Group and will Chair the Oversight Group for the evaluation. The evaluation will be administered by the Sciencewise Evaluation Manager, Diane Warburton.

Oversight Group members will join on an individual basis and will not represent the organisation they work for.

The criteria for the membership of the Group are:

- a knowledge of Sciencewise without being directly responsible for delivery
- a knowledge of evaluating participatory programmes
- a knowledge of public dialogue
- a knowledge of public policy processes involving science and technology
- a knowledge of government programmes
- perceived independence (i.e. no vested interest).

Oversight Group members

- **Professor Judith Petts CBE**, Pro-Vice-Chancellor, University of Southampton (Chair); Co-Chair of Sciencewise Steering Group
- **Professor Tim O'Riordan**, Emeritus Professor of Environmental Sciences, University of East Anglia; Fellow of the British Academy
- **Professor James Wilsdon**, Professor of Science and Democracy, SPRU, University of Sussex; formerly Director of Science Policy at the Royal Society (2008 - 2011)
- **Gary Kass**, Deputy Chief Scientist at Natural England and Policy Fellow, Centre for Science and Policy, University of Cambridge; formerly at POST; first head of Sciencewise
- **Professor Julie Barnett**, University of Bath; former Defra social science panel member
- **Professor Ortwin Renn**, Professor of Environmental Sociology and Technology Assessment, University of Stuttgart

Sciencewise

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