11.Questions about Innovation

What does it take to innovate to reduce carbon in local government? The research started with the observation that across the field of local authority there seemed to be pockets in which groundbreaking, carbon reduction projects had taken place. By using learning history to get inside some of these projects and by then looking across them thematically some general insights can be drawn about the experience of innovation. This chapter presents these insights in the form of six meta-themes which have resulted from a bottom-up analysis that I conducted across the five learning histories. Before presenting this analysis I want to delimit its scope.

The Scope of the Analysis

As the last chapter explained what is proposed here is a partial analysis. The many themes that recurred across the learning histories were aggregated, coalesced *and* boiled down into six key areas that I called meta-themes. So these meta-themes represent the centre of gravity of the analysis rather than the analysis in its entirety.

There is also the overall question of how well the five learning histories themselves represent the field of innovation for carbon reduction in local government. There were other innovative projects in local government beyond those that I featured in the research. Starting out I planned to feature between five and eight projects. What I had not anticipated was the effort involved in each history. The first draft of each took approximately a month to complete. The subsequent sign off and addition of perspectives also took time. As I got into the research, I soon realised that I would be lucky if I managed to complete even five histories, and I set about selecting those five as broadly as possible.

As I described in Chapter 2, I selected examples that were geographically disparate and that featured different technologies and approaches. However the decision to stop at five histories was dictated as much by practicality and time as it was by any sense that my findings had started to saturate.

All these caveats aside, there is nonetheless a robustness to the analysis presented here. Firstly, a form of saturation did occur or at least my view solidified as the analysis went on. As early as the second learning history I noticed how the themes I was annotating overlapped with the previous history. And as I analysed each new history this continued. New themes added nuance or additional insight but generally they were familiar. It had been crucial to get large capital, technology-centric projects as part of the sample, but even these did not change the centre of gravity of the analysis which was honing in on how individuals and groups navigate change rather than on how technologies or vehicles of change are invented.

Secondly, the analysis was also made more robust by working with it in the field. As I explained in the last chapter I validated and developed it with participants. For example, as a result of my work with B&NES, I created 'Knowledge and Translation' as a separate meta-theme and I developed the definition of 'Risk'. So what is presented here is at least the second iteration of the analysis and, as reader you too are invited into this ongoing process.

Presenting the Meta-themes

The way I have titled the meta-themes is somewhat contingent. Each meta-theme relates to the others and these in turn relate to other single themes that were picked out across the histories. For example the meta-theme 'Champions and Coalitions' relates to a theme of 'trust' that recurred across the histories. Either could have been the meta-theme. 'Trust' in turn plays into themes of 'Knowledge' and to 'Risk'. So it is not clear-cut and I have sought a presentation of the themes that does not suggest it is. Each meta-theme will be introduced with a summarising statement. There will then be an exposition of that statement, drawing on various examples from the learning histories, to illustrate it. In places I will bring in some of the conversation from the B&NES small group work around these themes. So it is a conversational, open-ended exposition. At the end of each meta-theme's exposition is a suggested set of learning questions that I have derived from the analysis. What results is a rich, but nonetheless, themed description of what factors seem to be common to these breakthrough projects where low carbon innovation has occurred.

A writerly invitation

The learning questions at the end of each meta-theme are questions that might be asked of any local authority group hoping to innovate in some way to reduce carbon. And there is a possibility they might be applicable to innovative projects in general. Here I want to invite readers into the text to explore just how widely applicable these themes might be.

The primary purpose of the learning questions is to support a cycling back of the analysis into the field for a fresh cycle of inquiry. The analysis is set out in a way that helps ground it in whatever the current context of the participant is. As the previous chapter explained, the intention with this analytical aspect is at one with that of the narrative aspect – namely to allow readers to draw whatever meanings are relevant to their own context and *on their own terms*. As reader then the analysis is being cycled back to you, to your situation and your experience. How well does it resonate? How generally does it apply? I invite you to call to mind an innovative project in which you are involved and to ask of yourself as we go some of the questions that are posed. In this way you can decide how well the current analysis works for you and so you are testing its scope and by inference the value of the analysis in terms of learning rather than in terms of theory. In this way the analysis is forever open and in the field rather than declared, fixed and finished as proposed.

Theme 1: Flexibility with Risk

Summary: approach to risk in breakthrough low carbon projects.

Each learning history involved risks of different types at times, but in each case risk was embraced as part of the project rather than existing outside of it. The individuals and groups involved worked flexibly with risk to bring it to an acceptable level by moving it, sharing it or simply facing into it.

There are all kinds of risks that arise quite naturally from doing something new, some tangible, others less so. Where new technologies are involved, there are very real financial and operational risks. Consider the high costs of the biomass boilers in Barnsley or the cost of digging a well to access geothermal waters in Southampton. Along with these high capital costs are the inevitable risks involved with operating new technologies. When I visited Kirklees, an engineer was on site struggling with a tangle of wires trying to understand a problem with the solar panels. In Southampton you can read of how engineers puzzled for days over the fluctuating levels of water coming through their pump before realising that they were experiencing the tide. Closely connected to these tangible risks is the less tangible risk to reputation that attaches itself to organisations or people who opt to do something different whether it involves high capital or not. Merton carried reputational risk purely in terms of the individual's careers and standing within the local authority. They 'put their heads above the parapet' was a description I heard several times with reference to Merton. What the research showed was that whether tangible or not, risk was subjective – it varied from person to person. And common to Merton and all the histories was an unusual psychological relationship with risk. Whereas 'fear of change' is often a psychological factor that will exaggerate the perceived risks of doing something new, in all the histories, it was the "fear of doing nothing" that drove our individuals into action. Back in the early 90s: Steve Waller in Nottingham could see the environment as an issue that could not be ignored; Dick Bradford in Barnsley could see the increasing dependence on foreign gas pipelines as a senseless risk and Mike Smith in Southampton saw a well being dug in his city by the Dept. of Energy and knew it would be a risk if he did not understand what was going on.

Recognising these different types of risk I could then look across the histories and try to

get an overall picture of how they had been addressed. Placing the different vignettes together I reached the simple observation that each history expressed a combination of risk-reducing strategies together with individual or group psychologies that were willing to face into risk.

Tangible risks were on the one hand systematically reduced by being transferred elsewhere or shared with other stakeholders. By adopting a small, stepwise approach risks were scaled to a digestible size. In the high-cost new technology projects at Barnsley, Southampton and Kirklees, pilots and pathfinder projects were fundamental to reducing the financial and operational risks involved to a manageable size. The following extract from the Barnsley transcript illustrates how Dick selected the first pilot project and how he worked to reduce the various operational and financial risks involved:

> So what we did… courageous move two, was to say: "OK we have a particular site that's in all kinds of trouble anyway, needs a complete refurbishment, needs a new boiler plant etc etc. Why don't we put a biomass boiler plant in and put a back up gas boiler plant in as well? So that if the market place responds – fine – if the market place can't respond, we're not putting people at risk". That was particularly well received by members because I obtained various grants to pay for both boiler plants. So it didn't cost the council a bean.
>
> From Barnsley Transcript

Financial risks were often designed out altogether in the early stages. Grants kick-started the Barnsley projects and funded the capital investment they needed. EU funding had underwritten the solar equipment in Kirklees. And in Southampton the second well explorations were funded by EU money.

Operational risks associated with new technologies were addressed by either having extensive and flexible technical knowledge – for example Dick had very broad-ranging technical expertise in Barnsley – or by transferring the risk out to an appropriate organisation that had the requisite knowledge and expertise. This was the case in

Southampton where the energy services company, Utilicom, took on these risks.

> If you haven't got the expertise you buy it in you're always looking at risk transfer.
>
> (On partnering Utilicom in Southampton)

Reputational risk was likewise transferred or shared appropriately. In Kirklees, Jimm describes a sinking feeling when he brought the funding stakeholders around the estate:

> I remember taking board members around the estate before and the expression on some of their faces of: 'what have we bought into here? Why are we risking our money in this area?' Credit to the directors though: they backed me up in doing the scheme.
>
> (On getting funders involved in Kirklees)

Likewise in Merton, risk was shared with the executive bosses. And by using the due process of existing consultative procedures, an innovative piece of policy could be tried out in a relatively risk free way:

> Took it to our bosses and they went: 'well, look hey we've got nothing to lose, we'll put it in'.
>
> (On putting a new policy in the UDP in MERTON)

So strategies to reduce risk were common across the histories. This was however complemented by a second and powerful factor which was a psychological willingness on the part of individuals and groups involved to face into the risks that arose. Risks, and especially those associated with new technologies, cannot be fully predicted. They unfold as the project gets underway and so will always be to an extent, unforeseen. What was striking about all the cases was the tenacity of the protagonists to face into the risks that emerged once the projects got going.

> I've been very fortunate in the city council, some of the schemes I've been involved in, huge projects, taken years to do and I've always regarded it as a

challenge. To me it's a bit like doing a crossword or Sudoku puzzle; you persevere till you've got the solution,

(Tenacity and determination, from the Southampton transcripts)

All the projects were characterised by an underlying determination to go forward rather than to fail. What aided this was clarity about what the project was trying to achieve, and a project team who became allied to achieving it. Undoubtedly some of this had to do with momentum:

Like a boulder at the top of the hill; they take a hell of a moving but once they start to be honest you're either on for the ride or you're not

(On the momentum of a project in Kirklees)

But it also linked to the psychology of risk mentioned earlier. In all cases, individuals and groups faced into risk, because failure to act represented the greater risk.

He said: 'I knew they're going to let you do it. It's because they trust you but if you screw up they're going to crucify you!' Well I'm still here'

(On winning trust in Barnsley)

Learning Questions: flexibility with risk

First name the risk:

What kinds of risks are there (financial, operational, reputational etc) for different stakeholders?

How do perceptions of risk vary for the people involved?

How do we see the risk of doing nothing?

How am I around risk? What do I see as risky here?

Then think how it might be addressed:

How might we share the risks?

How might we move or reduce these risks?

Can we face these risks?

Theme 2: Champions and Coalitions

Champions and coalitions in breakthrough low carbon projects.

Each learning history involved champions and coalitions where the relationship between the two is significant and complex. The champion role was flexible and filled at different times by people with invaluable political, social or expert capital. The coalitions were fluid, self-creating and unconfined by organisational boundaries. They were often held together by meaningful human relationships of friendship and respect.

My choice in the titling of this meta-theme is to discuss champions and coalitions in the same breath. Champions are traditionally understood as fixed, long-standing, passionate voices for a cause. Success of a cause, when it occurs, is often attributed to these key people. And this is fair. However this research hints at a more complex picture. It would seem that it is through alchemy between champions and supporting coalitions that these innovative projects occurred. Many of the interviewees in the research would be termed champions. However in their interviews they mentioned various other actors whose importance was crucial at particular times in the lifetime of the project. The champion then became less important than the set of 'championing roles' that were, to an extent, defined by and nourished by supporting coalitions.

Champions played key roles in energising the project at crucial points or over a sustained time. Sometimes they brought different kinds of capital to the project: political or organisational for example. Champions with political capital were common to all five learning histories either momentarily – as in a crucial phonecall in Merton – or over a sustained period of time as in Nottingham, Southampton and Kirklees. Champions with organisational capital played crucial roles directly – using their influence to instigate the projects. This occurred in Nottingham where the original idea for the declaration was executively led. But echoing the point about sharing risk, these champions also played a role indirectly - by supporting and creating the space for the innovation to occur or be sustained.

> He [a supportive director] learnt something from me and I certainly gained a great deal from having his support
>
> The importance of high-level support in Nottingham

> And he [the Deputy Leader] then took it [climate change] on as a personal crusade to drive it back up the agenda again so he's firmly put it back in the top drawer of things that need to be done
>
> An executive champion changed fortunes in Nottingham

Their support was not always consistent. One interviewee talked about feeling very vulnerable when a powerful champion who had backed him informally failed to back him in public. Similarly in another history there was contention when I gathered perspectives as to how much organisational support there really had been at the start. Nevertheless, lonely though it may have felt, the space that had been conferred spoke for itself. The project succeeded.

Finally there are the champion roles of the **agent provocateurs** who draw in capital and knowledge at the appropriate moment in the project. These champions take the lead to connect and build coalitions to support the work and to keep it alive. This was a role that was often taken by the people I interviewed. I borrow the term from the Nottingham learning history. When it looked likely that the steam behind the Declaration was dwindling Mike called a coalition of interested parties to a meeting in Nottingham:

> I think the agent provocateur was Mike....He invited us all to come to Nottingham in the spring of 2005 and said 'look guys'...
>
> From Nottingham Transcript

The coalitions that build around **agent provocateurs** have a quality different to that of a departmental group. In Merton, the cross company coalition that came together in support of it, transcended boundaries and followed *'the common good'* (Merton p.19).

In Southampton, the project team for the scheme was described as special:

> It was funny because the way this team came together it's one of the best teams that I've managed. They seem to identify with the project and there seemed to be an energy there, it didn't get adversarial at all, and professionalism sometimes get, you know got put to one side, it was really how can we take this forward, it was really a pleasure to manage.
>
> From Southampton transcript.

These teams have there 'own problem to solve' which sets them apart from project teams. They may still be within an organisation, or to an extent still defined by the organisational structures they straddle as in Southampton and Nottingham, but they are not confined by the organisations they represent. Meetings that felt palpably different were described in Kirklees, Merton and in Southampton. In all cases the different feeling that interviewees described related to how the group transcended defined roles to become issues driven. They were focused on solving or creating something together and had stepped away from their professional roles to do so. Formations such as these give vital life and energy to a project. They sustain confidence in the original vision and help develop it and bring it to a reality.

There is personal relationship and trust within these groupings and coalitions. In Southampton the group described above still keep in touch; in Merton a core group go to the football together, meet in the pub and have even stood as best man at each other's weddings. Again this trust is a sustaining force in the overall project.

So the success of projects relied on champions and coalitions. Whereas champions carry a vision and enable parts of the system to connect to that, the coalitions sustain, nourish and, ultimately deliver the project that represents the vision. This analysis applies to all the histories with one notable exception: Barnsley. Barnsley was much more of a champion's tale. Coalitions that played a part in the project were mentioned but descriptions were fleeting and more in terms of what they did rather than who they were. For instance a group of forestry and public sector people visited Europe on a fact-finding mission. This was a pivotal event in the history, however we have little insight into

how this group sustained afterwards if it did. No doubt then there were coalitions whose absence might in part be attributed to the perspective of the interviewee. But only in part. Across an axis of individual to collective leadership, Barnsley clearly lies closer to the end of individual leadership. When asked if he ever had sleepless nights, Dick replied:

> No – I've had sleepless nights in the past but not to do with this. Because all the way through it has been under my control – the things when you get sleepless nights is when it's not under your control. If someone else is going to screw up and drop you in it from an exceedingly great height – but this has always been under my control so I didn't feel exposed.
>
> From Barnsley transcripts

Coalition working is seen here as a source of exposure and loss of control. For this champion, sharing risk with supporting coalitions does not sustain him but magnifies the risk he perceives.

The relationship between coalitions and champions is complex then and varied across the examples. In Nottingham, Kirklees, Southampton and Merton, coalitions interacted with various champions in mutually nourishing and sustaining relationships. In Barnsley the sheer energy and conviction of the champion was perhaps enough to sustain himself. There is no right way. Perhaps the insight is that all these projects found ways of preserving a vision and energising it over a prolonged time. It is rare that an individual can sustain that alone.

Learning Questions: champions and coalitions

Who are our champions?
What kind of capital do they bring?
What is our issue/vision?
Is it sufficiently clear to enable groups to form around it?
What informal groupings sustain our/my vision?
Is there enough energy to sustain our vision?
What groupings/champions might nourish and sustain us?
How might we create links to them?

Theme 3: Knowledge and Translation

Knowledge and translation in breakthrough projects

Domain spanning knowledge was achieved in each project. The requisite expertise to make the project a success was drawn from across different knowledge domains such as technology, finance, policy and so on. The appropriate expertise was brought into the project in acts of translation that occurred either individually or between coalition members whose relational skills were sufficient to bring two or more expert domains together.

Across the histories was the theme of knowledge and expertise from different domains being translated so that it could be appropriately applied to the project at hand. In Merton, though new technology was not directly being used, intimate knowledge of planning policy and procedures was required. The renewable energy expert Eddy underpinned the Merton policy development and was recognised as a vital support to the campaign that was championed by Adrian who had a different set of skills. What brought the two domains together was relationship and trust. Similarly in Southampton the domains of financial and legal knowledge were again expertly brought together in the service of the project. The finance director at Southampton described his lawyer colleague as follows:

> [She] was wonderful because she didn't behave traditionally as I find lawyers, having a big complicated agreement, she understood immediately what it was we were trying to do and what the risks were, and she distilled all these down to a very simple agreement, which has actually stood the test of time

From Southampton transcript

With the three technology projects – Southampton, Barnsley and Kirklees, the knowledge domains needed to stretch all the way into the technological world. If the financing and legalities of the scheme needed to be understood in Southampton, so too did the operation of it. Getting a new technological solution to work requires knowledge not only of the technology itself but also of the complex systems of supply and use into which it will fit. These complex systems refer to the supply and use of fuel, heating,

cooling, finance, policy, the environment and transport. The task of transitioning to a new technology is not one of substitution. It might instead be likened to a delicate process of transplant surgery where existing circulatory systems need to be kept going while a whole new system is spliced in.

So the knowledge and expertise in each project was about integrating technology and getting it to run smoothly within certain constraints. And this required resilience and resourcefulness when inevitably it didn't work. So in the Kirklees history one can read of the extra roof platform that needed to be built during the project when they learnt that they needed to tilt the solar panels appropriately (p.24). In Barnsley (p.13) one can read how Dick's journey started with the recognition of an old system where heating pipes were woefully mismatched with customer use patterns. And in Southampton the transcripts described problems with calcification of the pumps that had hitherto been used to pump oil rather than brine (p.21). The result: a new user practice to take the pumps down annually and to clean them out. In all cases the projects did not set out with the requisite expertise but were set up in such a way that they could call it in as required.

This point clearly relates to the previous theme on coalitions. Champions and coalitions straddled knowledge domains and in a way that allowed knowledge to circulate flexibly and be appropriately applied. Consider the inter-disciplinary team in Southampton:

> We had a planner, we had a chartered civil engineer, we had an architect, I think we had a quantity surveyor, and then we brought in people as we needed, and we had the lawyer obviously and myself, I chaired it, and then we had people from Utilicom sat on this joint group as well. And then we brought in other officers as we needed them so … when we were going through the streets we'd bring in somebody from traffic and highways, in fact that guy, he subsequently became a permanent member of the team, the sort of chief, the guy in charge of transport.
>
> From Southampton Transcript

Officers were brought in ***as needed***. By contrast, in Kirklees the project was set up in such a way that an external team managed the renewable energy aspect. This meant

that technical expertise was not brought into the project as flexibly as it might:

> We had myself and somebody from the contractor and the architects would go to those meetings but within the project it [renewable energy] was always an outside thing. It could have been brought into the project a bit better than that. So what I'm doing now more is to make sure that it's an essential part of the actual project team. So the whole project development team understands the importance and the issues around the solar panels and things like that.
>
> From Kirklees Transcript

The way knowledge relates to the theme of risk was explored in a session with B&NES. Discussing risk, one participant commented:

> It depends on your understanding of risk doesn't it? If you start from a point of no knowledge but there's lots of knowledge out there…. You start from a position of risk with a capital R – and because there's lots of knowledge out there you move to a position of risk with a little 'r' as long as you are aware of the issues. The risks I find more difficult are where you're starting with an understanding that there is a risk but no solution and even when you look in the market place there is no solution….it's understanding what you don't know….
>
> From Southampton Transcript

If wisdom is understanding what you don't know then it seems that the successful projects were wise rather than knowing. With new technology and processes there is, inevitably, a lot of uncertainty. Few people fully understand the technology and their understanding needs to be interpreted and adapted to the problem at hand. The projects featured in the learning histories seemed capable of holding an awareness of what they didn't know together with a sense of what they wanted to achieve. The result was a sense of 'knowing what to do' which was a recurrent theme throughout. 'Knowing what to do' often involved finding something out. It might be something quite factual: for example in this case where the viable woodland around Barnsley needed to be

quantified:

> 45000 tons is from my PowerPoint presentation because that's figures that have been provided by the forestry people. That is for the 12000 hectares of woodland within South Yorkshire which is not all Barnsley Borough obviously.

From Barnsley transcript

Or where technology is involved, proof of concept is the kind of knowledge that is needed and this can be achieved through a low risk trial, or a small kick-start project. This occurred in Southampton where a small stand-alone heating scheme was trialled at Holyrood. And also in Barnsley where a trial was run to see how existing coal boilers might run with wood pellets:

> Yorkshire Forward asked us if we would project manage a trial for all of South Yorkshire to see whether or not wood pellets could be burnt effectively on boilers designed to burn coal.

From Barnsley Transcript

A common view is that groundbreaking projects necessitate an expert to hold the knowledge it requires. A participant at B&NES put this view forward:

> Doesn't Barnsley conclude, and certainly it is in my experience, **that the more dispersed it is the more difficult it is to make anything happen**. Because nobody can actually grasp it and the whole thing falls down if one person is doing something else that day or got other priorities....**it's the classic reason why local government never does anything**..."

B&NES participant, Session 3

The above theme is responding to this by saying that sometimes, even with a dispersed project team, knowledge can be held and in these cases local government does manage to do something.

Learning questions: knowledge and translation

What knowledge domains does my project cover?

What are our processes for calling in expertise?

How do we identify what we don't know?

Who in our champion/coalition network holds awareness of what we don't know?

What blocking points do we have that prevent knowledge circulating easily?

Theme 4: Rewards and Recognition

Approach to reward in breakthrough low carbon projects.

Each learning history referred to how the projects were rewarded and recognised. External systems of reward and recognition often kicked in after the project was successful and was not always rewarding in meaningful ways. Success attracted people to the project. Pre-dating this, real rewards for people came from the experience of the project itself. They felt rewarded by its success, the sense of shared endeavour and the opportunity to connect to an agenda that was meaningful to them.

Each of the projects I featured had enjoyed a certain amount of success by the time I came to visit. Merton and Nottingham had become famous in local authorities because the innovations that carried their name had spread throughout the field. Barnsley and Kirklees had won the prestigious Ashden Awards for Sustainable Energy. And the Southampton project was starting to gain a reputation as 'Woking, only better'. And there was a mood of celebrity about too. Kirklees had just had a royal visit from Prince Phillip when I visited in June 2007. And the week before my visit to Southampton they had just had a high-level visit from the mayors of seven US cities who had wanted to see the scheme. Such visits were described to me with a certain amount of surprised pride. As fame attached itself to the projects, organisations that formerly might have been wary moved in to lay claim to the success they had become. As a result a form of post-hoc branding sometimes occurred in ways that sometimes surprised the original participants.

> I must admit the whole evolution of this concept of the 'Primrose Hill Solar Village' which is the whole thing together – to me that came quite late in the day.

Kirklees transcript

> The interesting thing about the 10% policy is, is, is, y'know, is it would have probably just drifted into history and it is quite intriguing but for the fact that Greater London Authority tried to steal credit for it!

Merton transcript

Figure 48 A royal visit to the Primrose Hill 'Solar Village' in Kirklees in 2007

The projects were attracting less illustrious visitors as well. Researchers at a rate of at least one per week were approaching Southampton and Barnsley. Merton too had been a focus for several policy researchers. And the technology-based projects had become showcases. They all hosted open days and frequent visits from other authorities and groups who had an interest in doing the same thing.

All this recognition occurred after the projects had become successful. And some of it was not rewarding but put an additional burden on the teams, as they needed to now communicate outwards as well as sustain their projects. Some of the councils I visited had become Beacon councils. The Beacon scheme was run by the central government agency for development and learning in local authority, the I&DEA. It awarded Beacon status to the 'best' councils in different areas of service provision and provided funds to them for the showcasing of their practices. The scheme was widely appreciated within local authority circles as a great source of learning. It did however play into a mentality of winners and a grudging tone akin to that describing the 'best boy in class' crept into conversations about Beacon councils.

> I went to one down the road [a beacon showcase] – it was good – it was okay! It was just – I guess what slightly puts me off about it is that thing of being put up onto a pedestal and saying 'here's what we do'. Something is a bit eeuuww about it

From Nottingham transcript

In 2008, the system for evaluating the performance of local authorities was overhauled and targets for addressing climate change were finally put in place. At the time of interview however, the lack of corporate incentives to act on climate change was mentioned over and again as a frustrating impediment. It meant that the featured projects could not explain themselves in terms of corporate performance and, in some cases, for example Nottingham, the absence of a legitimate incentive affected the fortunes of the project. The momentum behind the Declaration had all but died when changing leadership had resulted in a focusing down on core priorities alone.

The direct incentives that are now in place will provide those who want to act with a reason to do so, but these incentives are still situated within an overall culture that rewards success rather than experimentation. As one of the participants at B&NES put it:

> We don't have incentives to innovation – in fact we've quite a lot going in the other direction

B&NES Participant, Session 3

In the five learning histories, recognition for what had been achieved was conferred only when success was assured and there is no reason to suggest that the new incentives will change this. A culture of innovation necessitates experimentation and experiments can fail. However, again at B&NES a participant points to a culture that polarises success and failure:

> Often people who are given permission to get on with these things – they are driven by a fear of failure not by the prospect of success

B&NES Participant, Session 3

So in the absence of any officially sanctioned incentive to innovate, what drove the individuals and groups featured in the learning histories? Reward seemed to come from a process of connection that might be described as follows: first by connecting to an agenda that was personally meaningful to them (climate change, fuel poverty, community engagement, fuel security…). Second by having or creating a vehicle to carry that agenda forward in the form of a project that was clear about its goals. Third the connection to others on this project yielded positive collaborative relationships. The mutual bonhomie of 'being in the trenches' together was often a sustaining force. Finally

reward came from the sense of achievement when the project was successful *in its own terms*. This often preceded the rhetoric of success and was more to do with tangible and unequivocal project milestones being reached. In Kirklees, Jimm's reward comes from a personal sense of achievement when his project was complete:

> And I guess another high point just really finishing the scheme and seeing it completed. Coming back here afterwards and you see kids playing in the little playground and some of the chaps on the site they come and talk to you and tell you what's going on – its great there's nothing like that actually.

From Kirklees Transcript

And overall this echoes across the histories. The incentive common to all projects was not externally given; rather it was defined by the 'health' of the project itself. This health was, in all cases, tangible and quantifiable. The Merton map shows its adoption rate; Nottingham tracked the number of signatures and celebrated the 100th and 200th signatory. Barnsley's tumbling carbon emissions were tracked against internal targets that were years ahead of government targets on carbon reduction. And in Southampton the scheme's health related to megawatts supplied and the number of connections won:

> Those [meetings] were really intense….they were looking at getting new connections … Utilicom were reporting back on the successes, and sometimes we played quite a legal part in getting people linked in as well. And that was really satisfying [getting big customers] Yes always, and that's still the case now. I get a real buzz when we've got new [customers], and we're getting people, a lot more people

From Southampton transcript

It seems then that the external processes for encouraging and rewarding innovation for carbon reduction are somewhat out of step with the internal motivators that drive innovative projects forward. And indeed the current systems that reward and award successful individuals and sub-groups plays into a culture of individualised success that runs counter to the need to stimulate experimentation and to encourage complex networks of action that cross formal and organisational boundaries.

How then might mechanisms for reward and recognition be got more in step with the 'health' and 'spread' of an innovation? This question has implications at the institutional and policy level. It suggests that the creation of projects that generate their own incentives is of paramount importance. These projects need to connect in a tangible way to agendas that have meaning for those involved. Where a project is rewarded by its own 'health' then the spread of its ideas will more naturally occur. When the 'health' of a project can be understood as something tangible then the felt sense of achievement is greater and more people are drawn to be involved in the project. So this creates a virtuous cycle. It suggests too that the current systems of recognition need to find ways to reward learning rather than just success. Currently there are few feedback loops in place to reward those secondary innovators who adopt the ideas of others and reinvent them to suit themselves. Similarly for those who have experimented but failed in some way there are rarely any formal processes to recognise what was done and to garner from it as much learning as possible. This links strongly to the discussion within the first theme on reputational risk. Until experimentation can be rewarded unconditionally, innovation will continue to be difficult in an outcomes-based culture.

Learning questions: reward and recognition

What meaningful agendas does our project represent?

How would we know if our project was 'healthy'?

Is this sufficiently clear for us to judge?

What internal systems of recognition and reward us?

What external systems of recognition and reward currently drive us?

How do I connect my sense of achievement to that of the group's?

For Policymakers

How might we reward learning and experimentation?

What projects might we create that can self-incentivise?

How might we reward successful individuals whilst encouraging collaboration?

Theme 5: Capacity Building in the Unknown

Capacity building against multiple agendas and in the unknown

Breakthrough projects result from capacity that has been built over time against multiple and changing agendas. By capacity I mean the capability to act and respond appropriately to an issue where the issue can change. In all but one learning history, a period of capacity building stretching back to the 80s laid the foundation for the innovations described today. And the agenda against which this capacity started to be built was different from today's agendas

Charting the chronological history of a project results in a much longer view than is normally associated with a best practice account. Whereas the latter describes the good practice as a fait accompli, the former describes the experiences, often stretching over years that led to the development of that practice. A common reaction to reading the learning histories then is one of surprise, and sometimes frustration, at how long it has all taken. Of Barnsley:

> It actually started in the 80s. Looking at the result now that is great but it's a long time

B&NES Participant, Session 3

By taking the historical view it quickly becomes clear that what is significant in understanding the project is not the agenda it might currently be addressing – for example carbon reduction - but the agendas against which it was originally developed.

Nottingham, Kirklees and Southampton had all shared a common history of political championing on 'green issues' in the 80s. This had been expressed in different ways: in Kirklees an environment unit was set up in 1991[30]; in Southampton the 'greenways' project was set up to safeguard the green spaces in the city; and in Nottingham a green charter had been published in 1989 in which the council made several promises to address issues that were at that time termed 'green'. The result was that by the time the

[30] Set up in 1991. My details on the exact history are sketchy as the Kirklees learning history explains.

global action plan on sustainable development percolated into local authorities in the form of Local Agenda 21[31], these authorities were already 'ahead of the game'. This early commitment to the green agenda created the conditions under which Nottingham could identify and put climate change on the agenda well ahead of it becoming a key issue of our times. In the late 90s, when he was asked what theme a forthcoming millennium conference on sustainability should have, Steve Waller remembers replying:

> Climate change is an up and coming subject for local government

From Nottingham Transcript

He comments:

> So that was nearly 10 years ago – now that was probably not quite true at that time, it was an idea slightly ahead of its time …it seemed a genuine issue…but I couldn't have predicted then what was going to happen 10 years later

From Nottingham Transcript

If Nottingham showed a clear trajectory from green capacity leading to innovation, other histories did not. There were overlapping and shifting agendas at play in Barnsley, Southampton and Kirklees. Barnsley and Southampton were influenced in different ways by the issue of fuel security. Barnsley explains itself partly in relation to diminishing North Sea gas:

> Now land locked Europe don't have a fuel rich North Sea and so has been doing other things for decades. But because we've got it there and we've just tapped into it – just convert to gas, burn it in power stations…But there's a kind of a short-termism behind all that isn't there, that you're not protecting your asset and as a consequence of course its nearly all gone now.

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[31] Unveiled at the Rio Earth Summit in 1992, Agenda 21 set out a comprehensive action plan for global, national and local government agencies and organisations to address sustainable development. Local Agenda 21 was the Local government version of this plan.

From Barnsley Transcript

And the history of the Southampton scheme can be traced all the way back to the Department of Energy digging a geothermal well in nearby Marchwood in the late 70s as a direct reaction to the global fuel crisis. By the time concerns over global fuel supplies had waned the interest in the geothermal supply had been adopted by those with more local agendas.

Converging and overlapping agendas was a common feature of all the histories and this occurred at the macro and at the micro level. In Kirklees the 'green' orientation of the 80s started to come together with the social agendas of regeneration and tackling fuel poverty in the 90s. And it was the confluence of these agendas at a particular moment that led to and sustained the breakthrough of the solar project. It is important to distinguish that generally agendas tended to converge rather than merge. The Merton history illustrates this point well. A coalition of a campaigning NGO, the local authority and a privately owned solar company came together in support of the rule. Clearly there were commercial and political interests at play here but these were compatible with each other. In Southampton the scope of the 'green' agenda started to widen from landscape to include energy in the 90s. At the micro level this was accompanied by the shift in the agenda of one of the key actors, Mike Smith. Mike was a financial director at Southampton whose initial interest in the first well at been pragmatic. He wanted to '*know what was going on up there'*. Over time however his own position had become much more environmentally motivated. When the explorations of the second well showed the aquifer to have limited capability as an energy source he describes his disappointment:

> Oh we were [gutted] and we put a lot of time and effort and I must admit I'd changed from a sort of cynical sceptical accountant to a very enthusiastic sort of environmentalist.

From Southampton Transcript

Not every person in the learning histories started as a passionate environmentalist or ultimately became one. For some, as in Kirklees, issues of social justice were more to the fore. However overall there was a willingness to embrace the carbon reduction agenda. What was distinctive about all the examples then was that over time, there were

multiple agendas at play in mutually satisfactory ways.

Against these shifting agendas, teams and individuals came together in ways that increased their capability to respond to and develop the direction of the issues they wished to address. Varied responses erupted from the particularities of the individual personalities and the situations they were in. At Southampton, when we discussed the different innovative projects in local authority, Bill Clark remarked that these examples had often been catalysed by a particular set of circumstances:

> **Bill** – all the examples you've quoted and you've quoted a lot of them – the catalysts have been different – it's often not easy to put your finger on them – nor indeed when that catalyst came into being

From Southampton Transcript

This observation starts to work toward a crucial point common to all the histories. Not one was singularly motivated by the issue of carbon reduction over time. Common agendas – for example fuel poverty, energy security, and sustainable development - ran through the histories but each was unique in how these agendas interacted with each other and with the motivations of the individuals involved. As a result these interesting projects were all different – all part of the ferment – that happened as a combination of capability meeting context in a unique way.

> Merton came on the scene quite quickly. And you think – ah – I wish we could have done that…what's the trigger that made it happen there? – it's just a different direction a different theme has been developed.

From Southampton Transcript

Taking this analysis into the present context suggests a couple of observations. First that finding ways to build capacity and resilience across local authority organisations in how they respond to the carbon reduction agenda is as important as the agenda itself. The potential to act, if cultivated in this way, can be lighter on its feet with a shifting context than say a team specifically put in place to meet new targets on climate change. This work, and work on the Lowcarbonworks project in general, has started to scratch the surface of how this 'potential to act' might be cultivated. The small group work with B&NES was framed in this way, but it was a short experiment. Clearly there is more

work to be done here.

Secondly the analysis suggests that because of its shifting ground, a long-term change project can only be understood retrospectively, and even then that understanding will be coloured by the context of the present day. As a result, when one is in the midst of a process of change, it can feel messy, improvised and at times meaningless. This is a point that I have made to participants, particularly those local authority sustainability champions, when they have talked of feeling overwhelmed by the task they face.

Learning questions: capacity building and multiple agendas

Macro level

What contextual factors are shifting currently that might enable/inhibit the carbon reduction agenda?

Project/Group level

What meaningful agendas does our project represent?

What other agendas might overlap with this?

What challenges or windows of opportunity does the shifting macro context open?

Where are we building the capacity to act?

Individual

What groups or groupings do I belong to that show a capability to act?

Theme 6: Chance

Chance

All the learning histories identified chance happenings that influenced the direction of subsequent events. Though these happenings did occur by chance, the potential for something happening had been increased by the vision and determination of individuals involved. So the chance, or in some cases the luck did not stand in isolation. It was made.

The previous meta-theme described how breakthrough projects seemed to result when capacity and context came together. Bill Clark at Southampton had observed that there was often a catalyzing factor. By this he meant a palpable advantage: funding, a cheap fuel source, an already dug well – that lowered the barriers and thus enabled the groundbreaking project to occur. This view is to an extent confirmed by the learning histories that chart the importance of such factors in enabling projects to happen. But the notion of change as a process of overcoming a series of barriers that stand in the way of a goal is at the same time refuted by the previous argument that there is no one agenda. If there are multiple agendas over time then there cannot be just one commonly understood barrier. If anything there are several. And over the project's lifetime there are several catalyzing factors that propel it forward. Such factors are necessarily constructed. They are recognised later. In Southampton a light bulb moment is described when the team realised that the geothermal element was merely the catalyst and the district energy network was what was important:

> That was one of the light bulb moments and you think, yes it's the network really that's important,

From Southampton Transcript

The geothermal element had started as the focus of the scheme and it was only over time that it became recognised more in terms of a helpful enabler, the '*sizzle in the sausage*' as one interviewee put it. The light bulb moment does not actually relate to a moment in time but rather an evolution in the thinking of an individual or a team. It is significant, but it is abstracted. It cannot be actually pinpointed to a moment of experience.

The final meta-theme discusses those catalyzing factors that as yet are not abstracted but that have been described in terms of the experiences of the protagonists. They are moments or events that seemed pivotal in each history. The most obvious of these is the story of the catfight in Merton that led to a chance meeting at the vets that in turn led to a crucial conversation occurring with the Minister. As the Chapter 9 on Myth describes this chance moment was already understood by the protagonist as a crucial moment of synchronicity. Similar, though more understated, moments of chance could be identified by protagonists in the other histories. In Southampton, Mike recalled how a key piece of funding was secured as a result of a chance conversation with two EU conference delegates over coffee in Italy. And in Nottingham Steve recalled how something he happened to have been reading at the time had influenced his idea for the Declaration.

> **SW**: but I also definitely remember reading about a pledge scheme that'd come up for the private sector – but it was broken up into certain phrases – 'we recognise' 'we welcome' "and I thought I can use that" and that's how the model for the Nottingham Declaration came into my [mind]
>
> **MG:** So it seems that there's a question revolving around your mind a bit – and you're quite open – and then you read something and it kind of draws together – it can appear as luck and in a way it is luck….
>
> **SW:** and in a way it isn't. In a way it's a culmination of experiences, which only I might have had because of the interest and the position I was in. It would only ever have occurred to me because of that unique situation

The final quote starts to delve into the relationship between luck and the making of that luck. It was only because he was open and searching for something at that time that SW could connect the reading of the private sector pledge scheme to a new idea for local authority. Similarly in Barnsley ideas from one place helped inspire their translation to another. Dick identifies his participation in the European wood-fuel tour as a key moment of serendipity. Yet, his ability to link that serendipitous visit to a strategy that worked back in the UK – to borrow Steve's words – relied on '*his experience, his interest and the position he was in*'.

In Southampton and in Merton the moments of luck that were described were less to do with the idea and more to do with realising it. The cat and coffee moments occurred to protagonists who were respectively searching to find a way to make something happen. Mike might have discussed Italian culture at the coffee table. Or on meeting his friend at the vets, Adrian might have caught up on old times. But instead each of them seized that opportunity to go on searching in that moment. So it was their determination to find a way that drove these conversations in the direction of realising a vision. If these conversations had led nowhere, as well they might, then the chances are they would have gone on searching.

As I described in an earlier chapter, when I present Merton to different audiences, there has often been some debate as to whether the Merton Rule would have gone through had there been no catfight. When I met researchers at SPRU (the visit itself I described in Chapter 7) this argument was pitched at the contextual level.

> If Randolph hadn't been in a fight and got hurt I find it hard to believe that the Merton Rule wouldn't have gone through. I mean If the Minister had said no, there would've been an enormous stink and there'd be lots of lobbying and maybe a few years later it would've happened….[goes on to say how at that time there was lots of political push on microgeneration]….I mean contingencies matter as to how and when things happen.
>
> SPRU Researcher during seminar on Merton

The researcher is right. His point is referring back to the point made in the previous meta-theme which suggested that when capacity and shifting agendas come together favourably then change will erupt. The point being made in this meta-theme is about the actual specifics of how events erupt in such a landscape. From the analysis it would seem that indeed there are events that are somewhat serendipitous, random and unpredictable. However they have occurred through the practices of individuals who are determinedly searching to create or realise a vision. It is these practices that increase the probability of something significant occurring. When it does it is made unique through its happening. The event is separated from the search. Plucked from the field of possibility it becomes historic – a unique and unrepeatable event that creates a tale of

vision, chance and determination.

Learning questions: chance

What chance or serendipitous moments have I experienced?

What was the quality of them?

As an individual, how might I recognise or create such moments in future?

How do I work with them? What stops me acting on them?

As an organisation when do we manage to work opportunistically?

As an organisation, how might we recognise or create such moments in future?

Reflecting on this Analysis

Quite a long analysis has been presented in the form of six rich thematic areas that are relevant across the five innovative carbon reduction projects featured in this research. I like the richness of these meta-themes, their narrated tone and the fact that they are still warmed by participants' voices. However they are long and I notice the pressures there are to reduce them to bulleted definitions. With an analysis of this kind the dangers of a collapse into a positivist statement are greater than with narrative. As I present these themes back to the system now I do so with caution.

The analysis I have presented here has been drawn from human stories, and as such it emphasises the experience of change. The themes focus primarily on how individuals and group navigate uncertainty and, to borrow again from Bruner, the 'vicissitudes of intention'. Human stories have a universal ring to them and so too does my analysis. When I present it, people recognise it. On the Lowcarbonworks project, my colleagues Gill and Michelle commented that it resonated with what they were finding in their work with breakthrough projects in completely different sectors. Gill had been writing a learning history about the building of a low carbon lingerie factory in Sri Lanka; Michelle was following the story of how a major food producer was experimenting with a waste-to-energy technology in Cornwall. Though they may well have chosen different words, aggregations or groupings in their analysis, they reported a resonance between their stories and these themes. This points to the interesting paradox that from unique and situated narratives that, by definition, rely on particularity, detail and context come general themes that resonate widely and are recognisable. However these are themes not normally articulated as being important to innovation. So this analysis, just like other aspects of this research is performing a reappearing act. It is reappearing the human dimension of innovation – a familiar story presented in an unfamiliar, but legitimised way.

I have put this analysis together with an eye to it having both practical and theoretical value. The learning questions and the narrated presentation are supporting the practical. I write them to invite a participant into the analysis and to engage with it. How well did this work for you as reader I wonder?

As I wrote I tested the analysis myself against a few personal projects I had in mind. I

found that there were resonances but these were not confined to one project but to a medley of my ongoing and past experiences. Like the histories I suspect the themes echo into the context of the reader in a complex way. They do not make up a recipe for innovation. They are more like a set of relevancies. Familiar with them as I am now, I find that one theme or another often pops into my mind during conversation or it informs my actions. Sometimes I voice these links and other times I do not. They are then, part of an analytical patchwork that helps me to make sense of what I am experiencing. Most readers however will not internalise these themes so profoundly. So the pragmatic question remains as to how to frame, present and work with an analysis like this so that it has practical value. Though in the next chapter I describe my small group work with B&NES where we did some work together on themes and learning questions, I feel that this avenue of inquiry has only just begun.

I am proposing too that this analysis has value theoretically. It supports the view of change that is being presented in this thesis namely that it is unknowable, uncontrollable and of limited meaning when discussed at a distance. Stepping into the experience of change bears little relation to how it is theoretically conceptualised. The inside experience of change is about relationship, opportunity, disappointment, learning, experimentation and endeavour. It is all about possibility – good and bad – rather than certainty. In Chapter 13 I will revisit theory in the light of this analysis and the learning history work in general. In so doing I will be expanding the theoretical scope of this open-system approach to learning history.