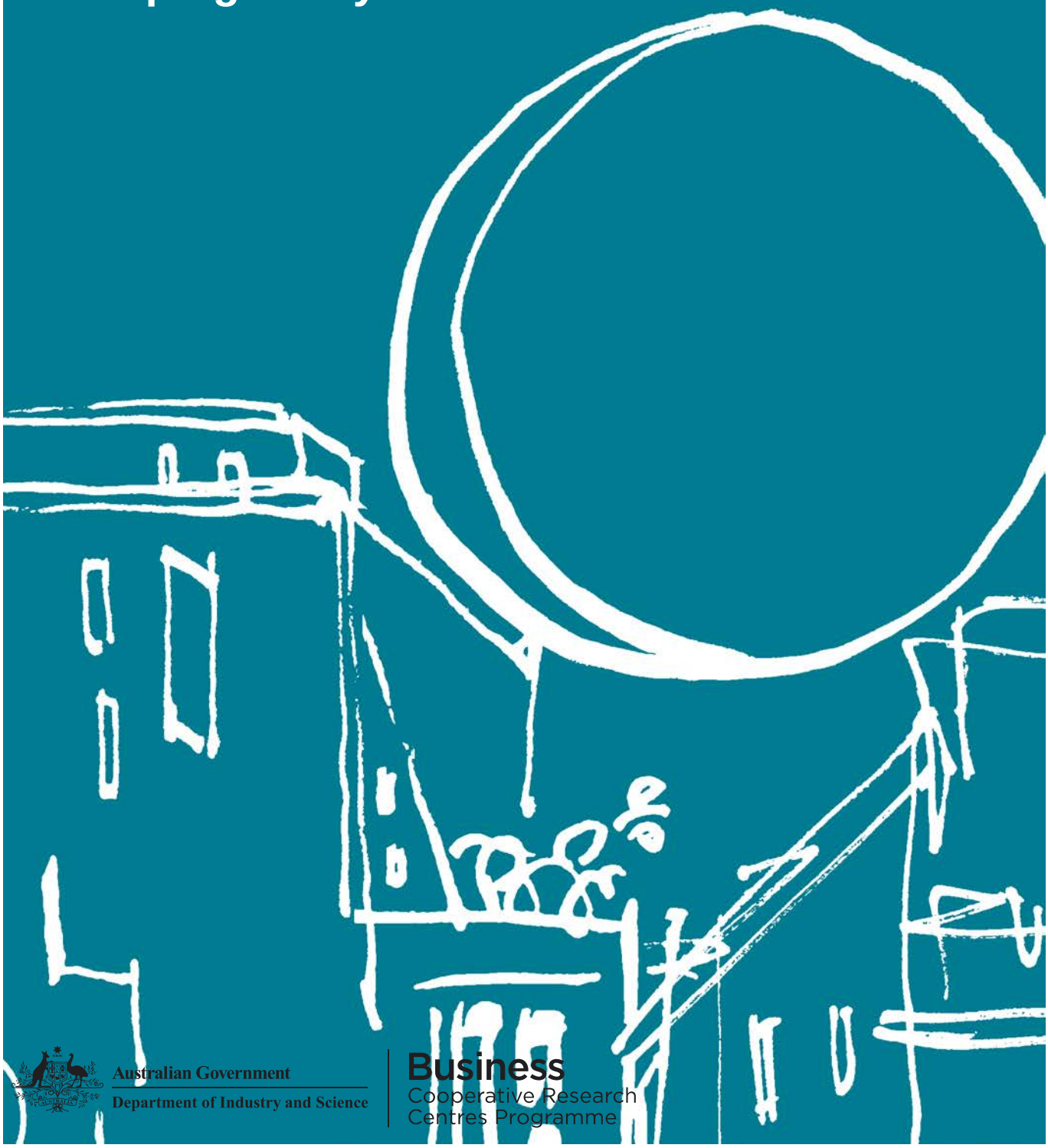
LOW CARBON LIVING CRC

DELIBERATIVE DEMOCRACY/PARTICIPATORY SUSTAINABILITY FOR LOW CARBON LIVING: Scoping Study



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EXECUTIVE SUMMARY

The Low Carbon Living CRC aims to facilitate the transition of the Australian built environment to a low-greenhouse gas emissions future while maintaining industry competitiveness and improving quality of life. The transition to low carbon living will involve complexity and unpredictability of interactions and inter-dependencies - 'wicked problems' – those that have many or obscure causes and for which there is no clear, straightforward solution. The interacting social, economic and environmental factors likely to be involved will be seen very differently by disparate stakeholders. To respond effectively, diverse forms of knowledge, values and aspirations will need to be integrated and harnessed in the effort to formulate and implement solutions. The transition will be an on-going, iterative process, requiring the broad participation and endorsement, not only of governments, industry and other 'experts', but the vast majority of ordinary people.

Good governance practices will be a vital prerequisite for mobilizing this process. Unfortunately, current governance approaches are arguably failing to adequately deliver.

Efforts to devise and implement effective responses to wicked problems are constrained by the fact that the existing civic and governmental 'infrastructure'—relationships, practices, habits, procedures, and processes—was not designed to handle, and has not been upgraded so it can handle, the wicked problems that impede improvement in our quality of life and that increasingly threaten the quality of life that has been achieved. Disconnection and lack of collaboration between the community, government, non-government organizations, and the private sector is a major barrier to building sustainable cities and countries. In addition, existing civic and governmental infrastructure does not provide a civic space in which communities can deliberate about what ideas such as 'low-carbon living' and 'sustainability' mean to them, an essential first step in determining what actions should be undertaken.

Many systems of representative democracy around the world, including Australia, are founded on administrative rationality, which endorses objectivism, universalism, mechanism, atomism and monism. Bureaucratically-administered representative government privileges expert knowledge to the near-total exclusion of the practical knowledge possessed—and valued—by ordinary citizens. Operating on the basis of a 'knowledge-deficit model', government officials assume it is *ordinary people* who lack an adequate grasp of complex issues. As a result, their efforts to 'consult' and 'engage' the public, while denying them meaningful influence over policy, have only generated increased cynicism and resistance to change. They have also resulted in poor grass roots knowledge and collaboration, leading to inappropriate/ poor decision-making.

Alternative governance systems are required that can integrate multiple legitimate perspectives and knowledge. To paraphrase Einstein, we cannot solve a wicked problem with political machinery that aided and abetted creation of the problem in the first place.

According to renowned social and physical scientists, resolving these new 'wicked problems' will require a "new technology of cooperation" (McKibben 2006). In order to address our most intractable problems and achieve sustainable living, we need to find new ways of thinking together, deciding together and acting together, and then ensure that the changes we adopt become 'business as usual' in institutions repurposed to the task of facilitating genuine public participation.

The Low Carbon Living CRC has proposed that *deliberative democracy* can provide a model and a set of principles to guide the transition to a low carbon built environment.

What is Deliberative Democracy?

Deliberative democracy enables important decisions to be maximally inclusive, egalitarian, participatory and deliberative:

- *Inclusion* of diverse viewpoints is essential because wicked problems cannot be understood adequately,

and effective responses cannot be crafted or implemented, without cooperation from those involved. The practical challenge is to figure out how to include all those voices in large scale societies and communities. Using representative samples offers a workable solution to the problem of scale.

- *Egalitarianism* is imperative because (1) each member of a democracy has an equal stake in a collective decision that respects his or her concerns and interests, and (2) everyone has a perspective that is 'equally' important to forming a comprehensive understanding of the situation.
- *Participation* is indispensable since no one can authoritatively articulate the perspectives, concerns, and interests that must be taken into account except the people who 'own' them. Moreover, the issues that must be resolved are issues that arise *within* the public. Without participation, ordinary citizens cannot work through their differences together. Participation makes an active partnership with government possible by forming a public with which government can collaborate.
- *Deliberation* is required because (1) every issue of policy involves conflicts of values or value- priorities that must be weighed against each other and reconciled in a way acceptable to all, and (2) deliberation focuses attention on the hard choice that must be made, the need to recognise and accept trade-offs, and the importance of resolving conflicts through reasoning together rather than through employing the power that organised interests wield in conventional political systems. Deliberation de-emphasises voting - which simply records the outcome of a competition, in favour of collaboration – which has the aim of arriving at a broadly supported and coherent 'public voice' that conveys a richer, more nuanced understanding of and response to the issue concerned than is achievable by simply aggregating competing views or choosing between them.

Deliberative democracy differs from:

- 'Democracy as voting' in that it is not simply the outcome of a competition between independent perspectives. Instead, participants collaborate with the aim of arriving at a broadly supported and coherent voice, co-creating a better understanding of the issue concerned than is possible by simply aggregating competing views, or choosing between them.
- 'Community consultation' or 'community engagement', which generally involve efforts from government or corporations to inform (and/or often sell to) local residents, what is about to happen / what they are about to receive, as fait-accompli solutions from all-knowing experts. These activities have little to do with the deliberative democracy approach of co-creating foundational knowledge and a basis for action.

Deliberative Democracy is widely applicable. For example it can be used to:

- *Develop broad co-ownership of 'wicked problems', by creating opportunities for the public to learn, discuss and problem solve together:* A wide range of deliberative democracy tools are available to engage the public in unbiased discussion, designed to explore common ground, create space for preferences to shift, and allow for minority views to emerge and be retained. Tools include 21st Century Dialogues, Citizens' Assemblies, and Open Space Technology.
- *Develop ideas and assist in the design of solutions (policies, programs, technologies):* Drawing deliberative democracy research and game theory, people can obtain results that are 'better than rational' when they engage in thoughtful dialogue with a broader, more representative sample of the community. A feature is the ability to encourage "co-creativity", providing strong links and support to the Low Carbon Living CRCs Living Laboratories activity.
- *Make decisions and prioritise funding*: A range of deliberative democracy tools are well suited to answer a particular 'charge' or question (e.g.

Citizens' Juries and People's Panels), and some can be used to reach decisions or develop recommendations for implementation (e.g. Participatory Budgeting).

The success of deliberative democracy resides in its ability to provide (i) legitimacy to decisions, (ii) its ability to deliver more appropriate decisions representative of the community and (iii) its ability to create ownership and commitment to action in the community, through active participation in the process. It particularly overcomes some of the key failures of current governance:

- tight-coupling (group think on an institutional scale);
- decoupling (silo thinking and acting);
- institutional domination (when a part of the system eg the media, a social class or interest, has undue influence over the other parts); and
- entrenched partisanship (zealous advocacy and polarisation)

Deliberative democracy has been used extensively by local government (in more than 1500 cities over 5 continents) and planning authorities (e.g. WA Dept of Planning and Infrastructure), mainly related to infrastructure and resource development projects. Research institutes and NGOs have applied deliberative democracy (e.g. WorldWideViews for Climate Change, Alberta Climate Dialogue, Portsmouth Listens) to inform national and international debate with a legitimate democratic voice. New regulatory demands on utilities, looking to invest in new infrastructure, are pushing the utilities to employ more sophisticated techniques for deliberative dialogue with communities.

In the broad domain of sustainability, deliberative democracy has demonstrated its potential. For example, in Western Australia, the City of Greater Geraldton has been applying deliberative democratic principles and methods to prepare plans and select actions that are more far-reaching than local decision makers had ever envisaged, including the proposal to become a carbon neutral city region. In the environmental domain, in the USA and Canada, deliberative democratic principles and methods have been applied successfully to manage multi-jurisdiction environmental issues around the Great Lakes.

This success in sustainability and environmental arenas is not surprising, as deliberative democracy has the power to integrate other forms of knowledge, which simple "rational" discourse alone cannot capture, in order to achieve the normative visioning required to address sustainability challenges. These other forms of knowledge (citizens' stories, values, ethics, hopes, emotions, and religious and spiritual beliefs) are all crucial to the pursuit of normative or ethical goals.

Although there are commonly accepted principles underlying deliberative democracy, these are variously understood and applied in practice.

Misapplication of deliberative democracy can lead to (i) sub-optimal solutions and decisions and (ii) solutions and decisions that have no legitimacy in the community.

Three elements, in particular, of deliberative democracy are critical to its success, and hence must feature prominently in CRC projects:

1. *Deliberativeness* encompasses mutual comprehension of multiple perspectives through dialogue, the collective identification and weighing of options, and the articulation of a coherent public voice that indicates a way forward everyone can live with. Deliberativeness significantly affects the quality of the solutions delivered;
2. *Representativeness* must be achieved with regard to both the demographic diversity of the population and the inclusion of a diversity of viewpoints and values. No set of conclusions, recommendations, or decisions can be fully legitimate in the eyes of the wider public and government officials unless citizens in general can identify with the participants who deliberate. Representativeness also improves the potential for innovation and the quality of the results;
3. *Influence* on subsequent policy and decision-making is essential to ensure that participants' seriousness, commitment, diligence, persistence, and candor are properly rewarded. Without making good on the

> promise of deliberative democracy to produce effective, durable, and broadly supported policies, the prospect of a low-carbon society, like solutions to other wicked problems, will continue to elude us.

The importance of all three elements of deliberative democracy, each one enhancing the other, is highlighted in the review of international examples of public participation relevant to low carbon living. Many of these examples successfully engendered the deliberative element, however they typically followed the entrenched path of administrative rationality, privileging expert knowledge and devaluing/not including citizens' views and knowledge. The Low Carbon Living CRC's "Visions 2050" project is a similar initiative which would benefit from deep consideration of these three deliberative democracy principles.

Participatory Sustaianbility:
Scaling Up, Scaling Out and Institutionalising Deliberative Democracy

While it has been widely acknowledged that a low carbon future cannot be achieved without involving citizens, in most cases, full control has remained in the hands of governments, with some stakeholder engagement and little to no public participation. We have therefore proposed an approach we call *'participatory sustainability'*, which explicitly links deliberative democracy (and participatory processes in general) to sustainability. We define 'participatory sustainability' as a worldview and a way of living in the world that draws on the *collective* intelligence, wisdom, and power of people ('power *with*' rather than 'power *over*') to construct a sustainable planet with sustainable civilizations, societies, and communities. We situate this approach in the real world of competing values, powerful interests and a world in turmoil politically, socially, economically and environmentally. Our approach applies at all levels of political organization, from local processes to national and even global efforts to deal with wicked problems. Participatory Sustainability focuses on the essential but typically neglected question of how contemporary societies and communities can achieve the substantive changes required for low carbon living, by scaling up, scaling out and institutionalising deliberative democracy.

Work undertaken for this scoping study revealed the need for the CRC to institute four key research strategies to enable Participatory Sustainability to bring about the transitional change to low carbon living. These are:

1. *Adhere closely to best practices in deliberative democracy:* The key elements of Participatory Sustainability need to be articulated in guidelines that set forth clear criteria (from minimal requirements to optimal features) for designing, implementing, evaluating and potentially accrediting (certifying) low carbon deliberative democracy initiatives within the CRC. These guidelines will embody the key elements of 'representativeness (inclusiveness), deliberativeness, and influence'. The limitations and failures demonstrated by previous participatory initiatives cannot be repeated.
2. *Scale up deliberative democracy*: The technological and process issues raised by the transition to low carbon living are hard for lay-people to understand and place in to context, because of the extreme complexity and uncertainty that attends an intentional change of this magnitude. To avoid superficial, circumscribed, or truncated deliberation, a variety of new tools and methods for communication and collective decision-making will need to be tested. For example, in one European experience, the research team found that 'while graphs and maps are well suited for scientific audiences, additional visual aids may be important for stakeholder audiences'

   The complexity of the problem and the greater sophistication of the tools and methods required for the public to deal with it competently, in turn will necessitate increased rigour of deliberative processes and the time dedicated to them. The work of deliberation must be scaled up so sophisticated public examination and discussion of wicked problems is feasible. To facilitate this, an

International Participatory Sustainability Panel (IPSP) is proposed as a mini-structure within the CRC. The IPSP will help to design, operationalize, evaluate, and potentially accredit participatory initiatives across the CRC. It will provide neutral, unbiased, and sophisticated guidance on participatory processes in much the same way as the Productivity Commission works in the Australian context.

This deliberative work will also be able to benefit from and utilize the broader research findings and tools developed by the Low Carbon Living CRC. Additionally, it will provide secondary benefits through increased learning opportunities and enhanced social capital throughout affected communities and the Australian public.

3. *Scale out deliberative democracy*: If deliberative democracy is to be effective as a vehicle for the transition to low carbon living, it must be scaled out so communities, regions and nations can be brought into deliberative conversation, and ever-greater percentages of populations can take an active role in determining the nature, direction and speed of the transition. Though some important examples of national and international deliberative democracy initiatives on the subject of climate change have achieved significant scaling out, it has been difficult to retain the element of deliberativeness. Many of these efforts have involved online processes, platforms and tools. Online deliberation is an obvious though yet unproven technology in terms of its ability to achieve the quality of deliberation observed in face-to-face settings. Experience has shown that to be successful, online deliberation will require more innovative integration with social media, as well as with traditional media, including print, radio and television. The IPSP will provide advice and support to CRC efforts to scale out deliberative democracy initiatives, linking into technological innovations in communication and problem solving in the CRC and elsewhere, and learning from scaling out experiences internationally.

4. *Institutionalise deliberative democracy*: There is tendency for government and other organisations to employ ad hoc participatory initiatives that address particular problems or opportunities, at particular points of time, with varying degrees of adherence to the functions and elements of deliberative democracy. These initiatives often repeat the mistakes of the past and have a low probability of achieving long term, transformational impacts. Research is required to identify "pinch points" where Participatory Sustainability will need to be embedded in routine local, national and global governance practices and institutionalised. Benchmarks will need to be established and evaluation carried out systematically, to gauge progress and continuously improve these practices. Progress and successes will need to be recorded and celebrated. These will be some of the tasks of the evaluation and accreditation arms of the IPSP.

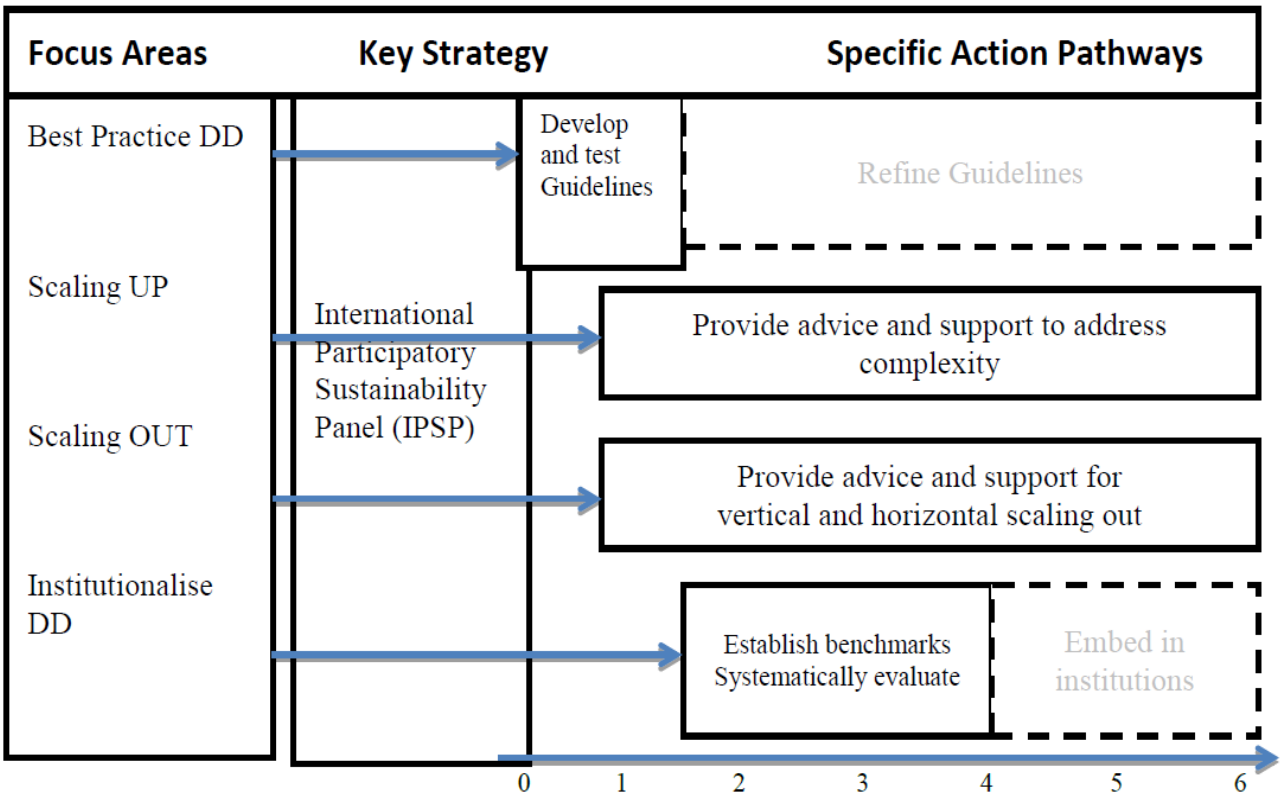
In addition to the foregoing research recommendations, this study proposes two initial pilot case studies (Living Laboratories) for exploring Participatory Sustainability with CRC members:

- The first pilot is with the City of Greater Geraldton in Western Australia, which has already demonstrated the possibilities of using deliberative democracy to facilitate low carbon living planning processes, and continues to innovate in this arena. This pilot specifically explores participatory budgeting with a focus on carbon reduction (a global innovation).
- The second pilot is with Sydney Water which has made a policy commitment to mitigate and adapt to climate change, and is simultaneously seeking to explore cutting edge innovations in its community and staff engagement strategies.

The research vision and parcels of work involved in delivering the Participatory Sustainability aspects of the Low Carbon Living CRCs research plan are illustrated below.

Participatory Sustainability

Aim– *Develop participatory sustainability tools and practices, demonstrate these practices at national scale, and embed them into the governance of key institutions*



Focus Areas	Infrastructure Development			Research Projects			Living Laboratories		
	Establish International Participatory Sustainability Panel								
	Establish Benchmarks	Evaluate Systematically	Embed in Institutions	Participatory Sustainability Guidelines	Governance Models	Interactive media – social, online	Geraldton Participatory	Sydney Water Pilot	Other
Best Practice DD	X	X	X	X	X	X	X	X	X
Scale Up DD		X		X		X	X		
Scale Out DD	X	X		X		X	X		
Institutionalise DD		X	X	X	X		X	X	

BACKGROUND

The Low Carbon Living CRC adopted the implementation of deliberative democracy as a key plank to achieve its goals. This approach was adopted because of the apparent ineffectiveness of conventional community consultation/stakeholder participation practices across the globe to achieve desired low carbon living outcomes. Often such initiatives have had a contrary effect to that intended. Increasing the negativity and cynicism of the public. Although much conventional community consultation has been rebranded as community engagement, the name change has not remedied either the tokenistic nature of much community engagement practiced by local, regional and national governments, or the disaffection of the public. This scoping study overviews the global literature related to participatory approaches to issues relating to low carbon living. It focuses on empowered public participation, in particular, global innovations in deliberative democracy as they relate to co- creating low carbon living and sustainability. The study provides a vital compass for the implementation and evaluation of the public deliberation aspects of the CRC research program. This will be highly significant in terms of potential application in the broader community, since disconnection and lack of collaboration between the community, government and industry has been highlighted as a key barrier to effective and rapid responses to climate change and more specifically, to the development of low carbon cities and more generally, low carbon living.

Deliberative democracy, is proposed as a way to significantly augment our current system of representative democracy by including the reasoned voice of inclusive, representative participants, engaged in deliberative dialogue, and empowered to influence decision-making and support action. A significant body of research has revealed deliberative democracy's capacity to draw together a critical mass of diverse stakeholders to fully explore and facilitate action in relation to complex issues such as climate change and the challenge of achieving low carbon living (see for example Gastil, 2007; Gastil and Levine, 2005; Stevenson and Dryzek, 2012). As a result of such findings, deliberative democracy was highlighted as one of the key tools that will be used to deliver the CRC's desired outcomes.

To ensure the CRC's efforts are geared to achieving the transformational change needed for low carbon living, this study highlights the importance of scaling up, scaling out and institutionalizing deliberative democracy initiatives. To this end, we apply a newly coined term - 'participatory sustainability'. Participatory sustainability is a concept embodying a normative theory for a worldview and way of living in the world that draws on the *collective* intelligence, wisdom, and power of people—'power *with*' rather than 'power *over*'—to co-create a sustainable planet with sustainable civilizations, societies, and communities. This approach is ideally suited to the real world of competing values, powerful interests and a world in turmoil politically, socially, economically and environmentally. It can be applied similarly to small scale institutional deliberative democracy initiatives as to local, national and even global initiatives.

Project Strategy

This project includes:

- Desktop research of participatory initiatives across the globe relevant to low carbon living;
- Desktop research of deliberative democracy theory and practice, including evaluation frameworks worldwide that are, or could be, of relevance to low-carbon living
- Analysis of information about relevant public deliberation initiatives and how they could be applied to this research, gathered through direct contact with national and international deliberative democracy networks; and
- Development of a deliberative democracy/ participatory sustainability framework to guide researchers wishing to undertake and/or evaluate

deliberative democracy research within the CRC, that is informed by analysis of trends and learning from the literature review and other research.

  - This includes the development of a proposal for an International Participatory Sustainability Panel (IPSP) a mini-structure within the CRC, which will help CRC researchers to implement best practice deliberative democracy/participatory sustainability processes in a consistent and unbiased manner. The IPSP will provide advice and assistance to design, operationalize, evaluate, and potentially accredit deliberative democracy/participatory sustainability initiatives. It is a prototype model for broader institutionalisation of deliberative democracy/participatory sustainability beyond the CRC;

- Development of two case studies that institute deliberative democracy for low carbon living, that are nationally relevant – 'participatory budgeting' in the City of Greater Geraldton in Western Australia in which low carbon living is an integral component; and the Sydney Water initiative aimed at pioneering deliberative democracy to address some of the critical sustainability issues facing their organization;
- Identification of opportunities for deliberative democracy research and activities over the first 3-5 years of the CRC, both internally and externally**.**

Key Research Questions/Tasks

This scoping study reviews national and international developments in participatory initiatives relevant to low carbon living. It outlines a framework for deliberative democracy, considering ways to scale up deliberative democracy to encompass the complex decisions that matter in achieving low carbon living, to scale it out to include broad publics at a national or even international level, and to institutionalize those efforts, so becoming 'business as usual'. We briefly overview literature in participatory initiatives relating to low carbon living, focusing more specifically on deliberative democracy.

We find case studies and research on other issues that, like climate change and low carbon living, deal with 'wicked problems'[1], dependent on the interactions within complex adaptive systems, and therefore require integration of diverse forms of knowledge and values. Our focus is on deliberative democracy that is undertaken with or instigated by governments wishing to achieve improved decisions, policies and programs.

The key research questions and tasks addressed are to:

- Identify the extent to which local, national and international developments in empowered public participation, and more specifically deliberative democracy, have been or could be relevant to low carbon living in Australia;
- Clarify how deliberative democracy for low carbon living can be clearly differentiated from more traditional community engagement, developing a common understanding of what it is, and how it can be implemented and evaluated in a systematic way, based on best practice, including how such initiatives can be scaled up to address the big, complex issues that matter, scaled out to a national or even international level, and institutionalized to become business as usual;
- Create a draft framework based on global best practice for designing, implementing, evaluating and potentially accrediting deliberative democracy/participatory sustainability initiatives within the CRC in terms of their processes and outcomes (including direct and indirect impacts on low carbon living)
- Develop a case study that has broad implications Australia-wide in terms of a) policy areas to address; b) new policy solutions; c) barriers to implementation; d) how these could be overcome;
- Identify opportunities for deliberative democracy research within the CRC over the next 3 - 5 years.

[1] See Rittel and Webber's 1973 paper in which the concept of wicked problems in planning was first proposed

- Institute ways to maximize the efficacy and legitimacy of such a new 'technology of cooperation', its transparency and accountability, and hence its proliferation.

Links To Crc Vision

This scoping study represents an important preparatory step in Program 3 of the CRC, "Engaged Communities". Deliberative democracy provides a powerful and effective tool for community engagement in its own right (which can be used in the CRC's Living Laboratories for instance). It also provides a unique opportunity to assist the CRC to communicate with its participants and deliver more integrated multi-disciplinary projects, with increased impact across all programs, including Program 1, "Integrated Building Systems" and Program 2, "Low Carbon Precincts". In this way, implementation of deliberative democracy within the CRC research community will make the most of the CRC's 'multi- disciplinary research capability, and diverse industry participation'. If deliberative democracy can be 'institutionalised' within the CRC it could provide an effective means of integrating the three CRC Programs in order to facilitate synergies between them, as well as integrating the interests, experiences and expectations of CRC members (including researchers, industry, government and community).

Analysis of the literature and information gained through international networks of deliberative democracy researchers and practitioners highlighted discrepancies in the way public engagement is carried out around the world, suggesting the need to establish a mechanism to develop a common understanding of deliberative democracy within the CRC and beyond. Therefore, in order to assist CRC researchers to undertake action research into the role of deliberative democracy in achieving low carbon living, a framework consisting of minimum guidelines for deliberative democracy processes is proposed. These minimum guidelines will help determine the extent to which processes that are proposed and implemented within the CRC conform with the ideals of deliberative democracy, or whether they are more closely aligned with less innovative business-as-usual community engagement/consultation processes. The guidelines relate to the design, operation, evaluation and potentially the accreditation of deliberative democracy initiatives within the CRC and in the longer term, also beyond. It will also enable researchers to examine the link between deliberative democracy and low carbon living with more clarity and rigour. Testing and further developing the framework during the life of the CRC is likely to enhance both the theoretical understanding and practice of deliberative democracy.

To achieve this, an International Participatory Sustainability Panel (IPSP) is proposed as a mini-structure within the CRC. Lack of institutionalisation of deliberative democracy/ participatory processes is identified as a major barrier to a timely transition to low carbon living. The IPSP is therefore offered as a prototype model for institutionalisation of deliberative democracy for low carbon living that has the potential to be easily replicated beyond the CRC in order to achieve rapid, widespread systemic change. The IPSP would give expert advice and support to CRC participants to implement the framework of guidelines for deliberative democracy processes in a consistent and unbiased manner. The IPSP would help to design, operationalize, evaluate, and potentially accredit such initiatives across the CRC.

The case study of Participatory Budgeting in the City of Greater Geraldton is proposed as an innovative and integrated approach to achieving low carbon living through deliberative democracy. If implemented, this case study of participatory budgeting will be the first in the world to specifically include low carbon living as an integral component. In addition to this pilot study, the scoping study also identifies broad opportunities for deliberative democracy research within the CRC over the next 3-5 years.

This research is essential to the delivery of Milestone R3.2.8 "Deliberative democracy process completed" and may contribute to other milestones such as R3.2.5 "Initial low carbon living community action tool developed" and 3.2.11 "Strategies developed for

engaging communities in low carbon planning and visualization".

INTRODUCTION

Disconnection and lack of collaboration between the community, government and industry is a key barrier to an effective and rapid response to climate change, and specifically to low carbon living. Deliberative democracy offers a way to address this barrier, since it is ideally suited to drawing together a critical mass of citizens and diverse stakeholders in a way that can fully explore the complexity of the built environment transformation challenge, and co-create a low carbon future.

We commence this Scoping Paper with an overview of the challenges of achieving low carbon living and the hope of deliberative democracy, outlining its theory and practice. Following this, we review national and international participatory initiatives across the globe relevant to low carbon living. Given the shortcomings of most community and stakeholder engagement initiatives, we focus on what has been achieved globally through the application of empowered public participation, particularly deliberative democracy. We critique the processes and outcomes of such initiatives against a theoretical 'ideal' of deliberative democracy, highlighting problems and opportunities. Finally, we propose a way forward for the 'Low Carbon Living' CRC to take - instituting an International Participatory Sustainability Panel, to ensure that CRC endeavours are not only based on best practice deliberative democracy, but also, are aimed squarely at achieving the transformational change needed for low carbon living. This proposal is based solidly on the scoping study review of national and international developments to 'scale up' deliberative democracy so it addresses the complex issues and decisions that matter in achieving low carbon living, 'scale out' deliberative democracy initiatives to include broad publics at a local, national or even international level, and 'institutionalise' best practice so it becomes 'business as usual'.

METHODOLOGY

Stage 1: Literature review and contact with relevant national and international community engagement and deliberative democracy networks to gather information about relevant initiatives

This scoping paper initially intended to focus on a literature review of deliberative democracy initiatives throughout the world as they related to low carbon living. However, it was discovered that this literature is severely limited since the field of deliberative democracy and low carbon living involves cutting edge research. Moreover, it was soon apparent that there were no commonly accepted guidelines, let alone evaluation, to help determine whether participatory initiatives could be called instances of deliberative democracy. Hence it was determined to first overview the global literature on participatory initiatives relating to low carbon living, and then focus more on those that could be constituted to be empowered, inclusive, public participation, though unfortunately, this too was often difficult to discern. Hence the literature review draws on broader community engagement and stakeholder participation in environmental and sustainability issues such as climate change mitigation and adaptation, urban planning, and public participation in sustainability science. However, the body of the review focuses on the relatively few deliberative democracy case studies from around the world that are or could be of relevance to low-carbon living in Australia.

The literature review was augmented with information gained from community engagement and deliberative democracy researchers and practitioners, connected through national and international networks. Sources included websites of major organizations such as the National Coalition for Dialogue and Deliberation (NCDD) and the International Association for Public Participation (IAP2). Colleagues and other researchers also provided suggestions about possible case studies, and summaries of their own research and links to other relevant sources.

Stage 2: Creation of draft framework for evaluating deliberative democracy initiatives within the CRC, and proposal for an International Participatory Sustainability Panel (IPSP)

The research undertaken in Step 1 confirmed that initiatives described under the broad umbrella of participatory approaches often have minimal connection with either deliberation or democracy. Even initiatives with a more specific intent of empowered public deliberation or deliberative democracy, cover such a broad spectrum of intent, process and outcome, that it is difficult to evaluate and compare them in terms of their functions (epistemic, ethical and democratic) or the elements of each initiative (degree of representativeness and inclusiveness, quality of deliberation, and the intended and actual influence and impacts). The persistent finding of the research on participatory initiatives on issues relevant to low carbon living is that they are more effective when they are deliberative, have a clear intent, are flexible to suit the context, and are meaningful to participants, in particular that the outcomes of the deliberations will matter. Additionally, it has been noted that participatory endeavours are usually one-off efforts, without the capacity to adopt or learn from rigorous research, and hence are rarely based on best practice, nor do they have the capacity to result in long term impacts, or even broader impacts than in the immediate locale at that point in time. For these reasons, a draft framework for evaluating deliberative democracy initiatives within the CRC has been developed that outlines minimum and ideal guidelines for deliberative democracy, providing scope for adaptive innovation within the guidelines, and recognising that CRC deliberative democracy projects may fall somewhere on the spectrum between these extremes. It also broadens this evaluation to encompass the concept of Participatory Sustainability, which very purposefully targets the long term aims of the Low Carbon Living CRC. In order to institutionalise this framework throughout the CRC and beyond, an International Participatory Sustainability Panel (IPSP) has been proposed, with terms of reference. The IPSP is proposed as a mini-structure within the CRC as a

prototype model for broader institutionalisation of deliberative democracy that can support scaling up and scaling out of participatory sustainability. It will provide expert advice and assistance to CRC collaborators who wish to undertake deliberative democracy projects.

Stage 3: Development of two pilots - Australian case studies applying best practice deliberative democracy to achieve low carbon living, and identification of further opportunities for deliberative democracy over the first 3-5 years of the CRC

The first pilot is a case study of participatory budgeting in the City of Greater Geraldton. This pilot is highly relevant to the findings of the scoping study in terms of aiming at transformation change for low carbon living, and builds on previous action research undertaken on this issue in the region. The case study design is informed by the success of participatory budgeting processes around the world, many of which incorporate deliberative democracy ideals. Moreover, participatory budgeting is an extraordinarily successful example of scaling up, scaling out and institutionalizing deliberative democracy, i.e. what we have termed participatory sustainability. The Geraldton participatory budgeting initiative takes the process further to incorporate consideration of low carbon living in budget decisions – a way to consider the equitable distribution of resources not just for current populations but for future generations. This is a global innovation. This case study is designed to yield research outcomes relevant Australia-wide, related to a) policy areas to address; b) new policy solutions; c) barriers to implementation; and d) how these could be overcome. It will also yield internationally significant research by broadening the scope of participatory budgeting from the goal of generating more equitable distribution of resources, to intergenerational equity.

The second pilot study is with Sydney Water, a partner in the CRC for Low Carbon Living. Sydney Water has a policy commitment to undertaking action to mitigate and adapt to climate change and help to achieve low carbon living, and is simultaneously seeking to explore cutting edge innovations in its community and staff engagement strategies in relation to low carbon living, and many other issues.

Sydney Water is interested in testing deliberative democracy's capacity to integrate diverse perspectives to provide an understanding of the wicked problems it faces in these areas, and to develop appropriate, widely-supported responses.

Stage 4: Final Report

The final Scoping Report includes:

- An brief overview of participatory initiatives across the globe, focusing on empowered public deliberation initiatives, and in particular, relevant deliberative democracy initiatives across the globe;
- Analysis and recommendations for mechanisms for scaling up and scaling out deliberative democracy for low carbon living, and institutionalising it to become 'business as usual;
- A draft framework for designing, implementing, evaluating and potentially accrediting deliberative democracy initiatives within the CRC in terms of process and outcome;
- Two pilot case studies: the first on participatory budgeting in the City of Greater Geraldton, with a particular emphasis on budgeting and planning decisions that support low carbon living; and the second in Sydney Water pioneering deliberative democracy to address some of its pressing 'wicked' problems related to low carbon living;
- Broad opportunities for deliberative democracy research and initiatives within the CRC;
- A proposed International Participatory Sustainability Panel (IPSP), consisting of experts in the field of deliberative democracy and low carbon living, who can provide impartial expert advice and assistance concerning the design, implementation, evaluation (including on low carbon living impacts) as well as potential accreditation of CRC deliberative democracy projects aimed at achieving low carbon living. This will be crucial for the institutionalization of

best practice within the CRC and beyond – helping to make it become 'business as usual'.

THE CHALLENGES OF ACHIEVING LOW CARBON LIVING

Climate change has emerged as a result of an 'intricate web of interactions in linked systems', including the natural and social (Kasemir et al. 2003a, xxiii). The greenhouse gas emissions (GHGs) resulting from the 'high carbon', or carbon intensive, forms of living that have emerged from this web of interactions must now be mitigated. In order to achieve the requisite 'low carbon living', we must deal therefore with 'wicked' problems, which do not have a single cause, or a single correct 'solution' (see Verweij and Thompson 2007; O'Riordan 2009; Rittel and Webber 1973). As Marshall explains:

> ***In contrast to a mechanistic system with unchanging relationships between unchanging parts, the parts of a complex adaptive system adapt continually to one another and to the state of the whole system as it changes in an emergent process…a world of complex adaptive systems is…characterised by high levels of uncertainty or 'surprise'. Confidence in monocentric efforts to devise universal solutions...effective for all governance settings is therefore unjustified. Science has moved on and the modern project needs to catch up (2010, 52).***

Governance for low carbon living must integrate multiple legitimate perspectives and forms of knowledge in order to deal with the sudden, unpredictable and interrelated biophysical, sociocultural and economic transformations we are likely to face (IPCC 2007). Scientific, expert knowledge is, of course, absolutely central to climate change policy and strategies to achieve low carbon living. Climate change was recognised as an issue due to the work of climate scientists and other researchers, and ongoing research into climate change and innovations that could help us to mitigate and adapt to climate change are essential. However, the need for immediate action based on normative assumptions, competing visions, disputed values, incomplete scientific information, and uncertainties that are intrinsic to biophysical systems, means that climate policy cannot be left to scientists, politicians and other professional experts alone (for example see Kasemir et al. 2003; van den Hove 2000; Jäger 2009). Universal forms of expert knowledge must be integrated with social, ecological and historical perspectives, which are likely to be unique to particular places and communities (Stoll-Kleeman 2003, 239). This sets up 'value-laden choices regarding which questions to ask, who to treat as expert, and how to deal with disagreements' (Clarke, 2003, xviii) – after all as Ravetz notes 'experts are usually "laypersons" outside their specialties, and…policy-makers are generally no more knowledgeable than ordinary citizens' (2003, 62). Therefore one of the key challenges of finding pathways to low carbon living is to find ways of bringing scientists, governments, industry, and citizens together to co-create climate change policy and support action (see Kasemir et al. 2003; Eden 1996; De Marchi and Ravetz 2001; Garmendia and Stagl 2010; Jäger 2009). Rational discourse alone cannot achieve the normative visioning required – citizens' stories, values, ethics, hopes, emotions, and religious and spiritual beliefs are all crucial to the visioning process.

According to systems theory, system elements interact predominantly with their neighbours (Finnigan 2005), which means that top down policy solutions dealing with complex adaptive systems are unlikely to adequately transform the system they are imposed upon. This implies that a significant amount of the effort directed to achieving low carbon living will need to occur through strong connections at the local level. We do not suggest, of course, that top-down governance systems should simply be replaced by a simplistic focus on local decision making. A purely local focus would be unable to cope adequately with problems such as the fact that many effects of carbon intensive living are felt far from their source; that people often demonstrate the 'not in my backyard' (NIMBY) syndrome, and the fact that the actions we take in

our daily lives do not always reflect the belief systems we identify with (for example, a person may think emissions should be reduced but still drive their car even when other options are available) (Portney 2005). Various geographical and time scales must be taken into account - low carbon living policy must range from local to global contexts, short term to long term visions, connecting local, regional, national and international jurisdictions through innovative network processes. The linkages between these multiple centres of deliberation are– for instance Hayward argues that 'decentered democracy is strengthened when multiple linkages connect local forums across time and space (2008, 79).

Responses to climate change cannot be steered by a universal, decisive action, nor achieved through 'grand master plan with precise mapping of the end point and the trajectory to get there' (Kasemir et al. 2003, xxiii). Policy for Low Carbon Living will, of necessity, be a moving feast, requiring resilient and responsive governance systems that support adaptive learning and action over the long term (for example see van der Hove, 2000). To complicate matters, it may not be enough to consider low carbon living policy without factoring in a raft of overlapping sustainability issues, including pollution; community development; poverty; health issues; economic development; loss of biodiversity; and the depletion of key energy (oil, gas, coal) and groundwater resources (for example see Sachs 2012). Governance models that support integrated thinking and action are required to deal with these challenges.

Modes of government are deeply implicated in unsustainable patterns of development (for example see Adger and Jordan, 2009). Many governments, in Australia and elsewhere, conventionally silo their various responsibilities into bodies that are disconnected from each other, and from the broader community. We suggest that this inhibits the collaboration and integration of perspectives necessary for decisions, policies and programs supporting low carbon living. It is argued that this is a reflection of the twentieth century commitment to the core beliefs of the scientific and industrial revolutions, which can be summarised as:

1. Objectivism: the belief that people can stand back objectively, separate from the system they wish to study;
2. Universalism: the belief that the world's complexity can be explained by a relatively small number of universal principles;
3. Mechanism: the belief that social and environmental systems work in a predictable way, like machines;
4. Atomism: the belief that the whole can be understood by examining its parts in isolation; and
5. Monism: the belief that it is possible to identify a single best way of understanding natural and social systems (Norgaard 1994, cited in Marshall 2010, 51).

This set of beliefs underpins governance as 'administrative rationality', in which experts take policy responsibility for disconnected parts of a complex system based on the conviction that:

> ***…phenomena widely dispersed in space and time (can) be understood by applying a few basic principles and that solutions to local problems (can) accordingly be devised from afar by a central authority. Centralised (or 'monocentric') government administration, with its decisions implemented through a single integrated command structure, thus came to be viewed as the most cost-effective governance arrangement across all areas of public policy (Marshall 2010, 50).***

Many versions of representative democracy - the most widely practiced form of democracy globally - reflect the administrative rationalist approach to governance. While some versions, such as the corporatist forms of government in Nordic countries are relatively collaborative and participatory (see for example Hunold and Dryzek 2002), the pluralist model practiced in Australia, particularly at the State and Federal level, endorses universal, 'expert' knowledge. This has often

meant that lay- citizens' knowledge is devalued and that they are therefore disempowered, while special interest groups take a key role. Communities' normative visions can be sidelined when this occurs. In this context, citizen participation is restricted predominantly to voting on government policies and programs crafted by experts (for example see Hartz-Karp 2007), or being on the receiving end of "consultation" processes that have more to do with "selling" experts' ideas than co-creating the foundational knowledge and basis for action thought to be necessary to transform complex adaptive systems. Research shows that citizens' wishes are often not appropriately reflected in political expressions of the public will (Dryzek and Niemeyer 2006, 126).

If systems theorists are right, this governance model is likely to undermine communities' capacity to address wicked problems through collaborative, adaptive learning and action, and it is at odds with the ethical basis for deliberation proposed by theorists of democracy such as Habermas (1989). From an instrumental standpoint, analysts argue that the disjointed and often narrowly defined framing of issues and corresponding narrow development of 'solutions' that result from the administrative rationalist approach, tend to result in new variations of problems leading to 'endless suites of continuing unsolved outcomes' (O'Riordan 2009, 315; see also Norgaard 2004). O'Riordan cites biofuels policy as an example in which good intentions to replace fossil fuels with biofuels have resulted in unforeseen negative complications such as land use issues, loss of biodiversity and rising food prices for the poor. Like others, he argues that 'wicked problems are unsolvable if conventional patterns of institutional design and decision tactics are followed' (2009, 315).

Marshall notes that as such failures of administrative rationality have become increasingly apparent, governments in Australia responded by opening the door to greater citizen involvement (2010, 51). However, many conventional 'community consultation' processes in Australia have tended to increase citizens' cynicism and mistrust of government and have led to poor government decisions (Hartz-Karp 2007). Such community consultation in Australia and elsewhere often revolves around an 'information deficit model' of participation, in which the public is deemed to need 'education' in order to remedy the issue concerned (Bulkeley and Mol 2003). A second response to the need to move away from direct centralised governance in order to deal with complex adaptive systems has been to use central control to wield market-based mechanisms, in keeping with the neoclassical, but only weakly democratic faith in the ability of the 'invisible hand' to provide the best overall outcomes for society (Marshall 2010, 51). This approach is evident in the use market-based policy levers such as a carbon price to reduce greenhouse gas emissions.

While there are convincing arguments for the use of market-based mechanisms as part of the solution (see for example Stern 2007), many analysts have come to the conclusion that issues related to climate change (such as achieving low-carbon living) also call for collaborative, participatory decision making and action involving a range of actors and organisations including governments, scientists, citizens, business people and non-government organisations (see for example Fierlbeck, 2010, 2; DiMarchi and Ravetz 2001; van den Hove 2000; Stern 2005). This view is also increasingly supported by analysts working at the nexus between science and community (Clark 2003; Kasemir et al. 2003; Whitfield et al. 2011; Garmendia and Stagl 2010; Bäckstrand, 2003; Bulkeley and Mol 2003; Eden,1996). For example, 'sustainability science' has emerged in an effort to 'understand the fundamental character of interactions between nature and society (Jäger 2009, 144). Sustainability science aims to:

> ***encompass the interaction of global processes with the ecological and social characteristics of particular places and sectors; integrate the effects of key processes across the full range of scales from local to global; and achieve fundamental advances in our ability to address such***

> ***issues as the behaviour of complex, self-organising systems, as well as the responses of the nature-society system of governing to multiple and interacting stresses (Jäger 2009, 144).***

Garmendia and Stagl argue that 'Advances in our understanding of how natural and social systems interact along spatial and temporal scales need to be substantiated by democratic mechanisms which can deal with inherent problems of continuous change, uncertainty and multiple legitimate perspectives of the systems' (2010, 1712). Similarly, Stoll-Kleeman et al. argue that responses to climate change, such as achieving low carbon living, require citizens to be linked to 'to new vistas of governance' involving

> ***many centres of power at every conceivable scale. It will be determined by partnerships with business and civil society through innovative formal and informal arrangements. It will require a participatory form of democracy whose early manifestations are beginning to appear (2003, 239).***

In fact, Stoll-Kleeman et al. argue that through the research and practice of participatory approaches 'the very nature of citizenship and of democracy' will be changed as what they describe as 'a new polycentered nature of participatory governance' emerges (2003, 239; see also Marshall 2010). This is already reflected to a certain extent as a practical shift from conventional modes of 'government' to participative models of 'governance', particularly in relation to environmental issues (for example see Bulkeley and Mol 2003).

It has been demonstrated that participatory, deliberative governance approaches can lead to better sustainability outcomes than top down government approaches. Examples have been noted where users of common pool environmental resources participate in a self-organising way to devise and apply their own strategies and rules, and as a result manage local resources more sustainably than when directed to act by external decision makers. Drawing on game theory, this phenomenon can be explained by peoples' ability to obtain results that are 'better than rational' when they engage in thoughtful dialogue (Larsen and Gunnarsson-Östling 2000, 148). Similarly, government organised deliberative democracy has been shown to have the capacity to improve sustainability outcomes. In Geraldton, Western Australia for example, extensive deliberative democracy processes were implemented as part of the local government's planning process *Geraldton 2029 and Beyond*, leading to plans and actions that are more far reaching than local decision makers had ever envisaged, including the proposal to create a carbon neutral city region (see Section 7 for a fuller description of this project). This is in keeping with research that indicates that deliberative democracy can 'reconcile humans and the environment in politics' (Niemeyer, 2004, 347), and the fact that it has come to prominence in relation to environmental concerns (Dryzek, 2000, 164).

Deliberative, participatory governance processes are therefore proposed as an important element of approaches to achieve low carbon living and address climate change, and therefore as a key focus for action research in the CRC. In Section 6, the theory and practice of deliberative democracy is briefly explained, particularly in relation to its capacity to of the transformations in governance called for by the analysts above to achieve low carbon living in an attempt to mitigate climate change.

DELIBERATIVE DEMOCRACY AND PARTICIPATORYSUSTAINABILITY- AN OVERVIEW

Both physical and social scientists have posited that public participation in low carbon living is important to increasing the public understanding of the issues involved, and their 'ownership' or 'buy- in' to the resolution of problems and to enacting those proposed solutions. While stakeholder engagement is critical to getting greater legitimacy for decisions made, it has been insufficient to achieve the change needed. Deliberative democracy[2] can be an important way to address wicked policy issues such as achieving low carbon living that are not only complex but involve normative judgements, hopes and visions, and for which there is no single 'correct' answer (for example see Fischer 1993).

Deliberative Democracy Defined

Deliberative democracy differs from 'democracy as voting' in that it brings together diverse views in an egalitarian way, in order to create responses that are borne of the interactions between participants rather than simply being the outcome of a competition between their independent perspectives. Participants collaborate with the aim of arriving at a broadly supported, coherent voice, co-creating a better understanding of the issue concerned than is possible by simply aggregating competing views, or choosing between them. Where the purpose of deliberation is to reach a decision, participants may not actually reach complete agreement with one another on every point – they may instead work to understand each other's perspectives in order to reach a legitimate, workable agreement that all involved can live with, and which can form the basis for action. Thus they may reach a 'metaconsensus', described as a softer form of consensus achieved when 'intersubjective deliberation produces a situation involving common agreement on important issue dimensions and legitimate possible outcomes, without necessarily agreeing on the exact outcome' (Dryzek and Niemeyer 2006, n.p.).

Significantly, it has been argued that deliberative, participatory processes may prove to be more widely accepted than 'democracy as voting' since the latter is essentially a Western construct, while deliberative democracy, or 'democracy as public reason and discussion', is more universal (Sen cited in Dryzek and Stevenson, 2011; Matthews 2012). This is a particularly important point in relation to climate change and low carbon living, which requires coordinated and/or complementary responses ranging from the local to the global level in many different cultural contexts.

Deliberative democracy enables important decisions to be maximally inclusive, egalitarian, participatory and deliberative:

- *Inclusion* of diverse viewpoints is essential because wicked problems cannot be understood adequately, and effective responses cannot be crafted or implemented, without cooperation from those involved. The practical challenge is to figure out how to include all those voices in large scale societies and communities. Using representative samples offers a workable solution to the problem of scale.
- Egalitarianism is imperative because (1) each member of a democracy has an equal stake in a collective decision that respects his or her concerns and interests, and (2) everyone has a perspective that is 'equally' important to forming a comprehensive understanding of the situation.
- *Participation* is indispensable since no one can authoritatively articulate the perspectives, concerns, and interests that must be taken into account except the people who 'own' them. Moreover, the issues that must be resolved are issues that arise *within* the

[2] A number of terms are used to refer generally to ways of involving citizens in a more participatory way, such as citizen participation, collaborative governance, community engagement, and participatory approaches. While we focus specifically on deliberative democracy in this CRC, lessons and relevant evidence on the benefits and barriers to deliberative democracy can be gained from case studies identified in these various ways.

public. Without participation, ordinary citizens cannot work through their differences together. Participation makes an active partnership with government possible by forming a public with which government can collaborate.

- *Deliberation* is required because (1) every issue of policy involves conflicts of values or value- priorities that must be weighed against each other and reconciled in a way acceptable to all, and (2) deliberation focuses attention on the hard choice that must be made, the need to recognise and accept trade-offs, and the importance of resolving conflicts through reasoning together rather than through employing the power that organised interests wield in conventional political systems. Deliberation de-emphasises voting - which simply records the outcome of a competition, in favour of collaboration – which has the aim of arriving at a broadly supported and coherent 'public voice' that conveys a richer, more nuanced understanding of and response to the issue concerned than is achievable by simply aggregating competing views or choosing between them.

A number of ideal characteristics of deliberative democracy have been suggested. It should be (1) deliberative, maximising opportunities to share reasons, explore options and arrive at a coherent voice in an egalitarian manner on issues that matter; (2) demographically representative of the relevant population, both for the sake of equity and to maximise cognitive diversity; and (3) influential, undertaken with a clear intent to share decision making with non-government actors including ordinary citizens and supported by a transparent link between deliberation, decision making and action. Many deliberative democracy practitioners and theorists argue that it should be institutionalised on an on-going basis (see for example Carson and Hartz-Karp 2005; Gastil, 2008; Meadowcroft 2004). The three key elements of deliberative democracy can be summarised as:

1. Deliberativeness
2. Representativeness/inclusion
3. Influence.

Deliberation involves inclusive, respectful consideration of diverse points of view and information about an issue, in a process in which each person has an equal opportunity to learn and express views, and to be heard (Gastil, 2008, 8). For a process to be deliberative, it must involve a rigorous analytic process, with a solid information base, explicit prioritization of key values, an identification of alternative solutions (which if they have pre-configured beforehand should still be subject to significant amendment), and careful weighing of the pros and cons. Hard choices and trade-offs are integral to the process. Deliberative processes must be run in a manner that supports equal opportunity, mutual comprehension and consideration, and respect. Professional, neutral facilitation is often needed to ensure that the quality of deliberation is high, since good deliberation is generally not self-generating (Levine et al. 2005).

The players in a deliberative public engagement need to include (a) appointed or elected officials with some degree of authority; (b) persons with content-relevant expertise; and (c) lay citizens, whether randomly selected or otherwise recruited in a fashion that seeks diverse members of the general public. Together, the interplay of these participants constitutes a public engagement process. For this interplay to work, it is essential to ensure that deliberative democracy processes are representative and inclusive of the diversity of lay-citizens in a community, because of the need to include the full range of interests and discourses in a community or political setting, as well as the ethical view that that all citizens have an equal right to be heard and to participate in a democracy. These factors are so important that Dryzek argues that there can be deliberation without representativeness and inclusiveness, but not deliberative democracy (2009, 1382). Random selection remains the best known method of ensuring representativeness and inclusiveness, and it is often necessary to work hard to ensure that disempowered groups in a community are

included. It is also essential to ensure that the diversity of arguments relevant to the issue being deliberated about is provided to participants.

Finally, deliberative democracy should be influential, and given the need for on-going, adaptive learning for low carbon living, preferably institutionalised. While many argue that participative processes can be seen as a complement to, not a substitute for conventional decision-making (DeMarchi and Ravetz 2001), it is likely that the conventional institutions of democracy must be subject to structural change to if they are to adequately support the sort of deliberative democracy processes (for instance see Pateman 2012, 10) that we maintain are necessary to underpin low carbon living. Just as strong democracy is best understood as an embedded aspect of community life as opposed to a series of voting events, deliberative democracy should be embedded in an on-going basis as a normal part of governance for low carbon living, potentially transforming the structure of democratic institutions in the process. In fact, decision-makers sometimes find it advantageous to institutionalise certain decision-making processes, particularly when contentious issues are involved, and where officials may be perceived as having conflicts of interest which compromise the integrity of the process (Levine et al. 2005). This is not to say that public deliberation is necessary for every decision or action taken, but that the intent and capacity to implement deliberative democracy as required should be a formal part of the structure of government. The nature and extent of likely transformations of governance is not yet clear.

Certainly, it would be an onerous, time consuming task to institutionalise deliberative democracy within each individual organisation whose activities impact on low carbon living. The exercises in internal culture change alone would be challenging and unlikely to be achieved rapidly. Nonetheless, some form of institutionalisation of participatory processes that can support rapid, widespread transition to low carbon living is required. Partly for these reasons, an International Participatory Sustainability Panel is proposed to be trialled in the CRC as a prototype model for institutionalisation of deliberative democracy that can potentially be emulated elsewhere to scale out deliberative democracy in order to achieve low carbon living quickly. The IPSP, and any similar bodies that evolve subsequently beyond the CRC, can provide neutral, unbiased, and sophisticated guidance on participatory processes, in much the same way as the Productivity Commission works in the Australian context, or the International Standards Organisation operates internationally.

In reality, these key elements- deliberativeness, representativeness/inclusiveness and influence - may be achieved to varying degrees in deliberative democracy initiatives (as described in Section 7). The precise manner in which the key elements of deliberative democracy are manifested in practice in different contexts varies. For instance, decision making power may be delegated entirely to citizens, or it may be retained by governments that make some level of commitment about the degree to which they will take citizens' deliberations into account, prior to the commencement of deliberative processes. This underscores the need for careful process design and rigorous evaluation within the CRC, based on a shared understanding of what constitutes deliberative democracy (See Section 9 for proposals to address this issue within the CRC).

The Practice Of Deliberative Democracy

Many processes and techniques have been developed which fall under the category of deliberative democracy. Some of the best-known include Participatory Budgeting, Citizens' Juries, Citizens Assemblies, 21st Century Dialogues, World Cafés, Station Rounds and Open Space Technology amongst many others, and innovative ways of undertaking deliberative democracy continue to be developed. Sometimes deliberation is done face to face, sometimes it takes place online, synchronously or asynchronously, and

sometimes in a combination of both online and face-to-face meetings[3]. Some processes can involve regular deliberative sessions spaced over months or years (e.g. Citizens Assemblies), while others can be undertaken over a few days, in a single day, or over just a few hours. Some are undertaken to answer a particular 'charge' or question (e.g. Citizens' Juries), some can be used to reach decisions or develop recommendations for implementation (e.g. Participatory Budgeting), some are 'designed to explore common ground and establish the extent of that, creating space for preferences to shift but allowing for minority views to emerge and be retained' (e.g. Citizens Assemblies) (Carson 2013), and others are intended to co-create a wealth of ideas without coming to a conclusion about them (e.g. Open Space Technology). Some can involve thousands of people (e.g. Citizens Assemblies, 21st Century Dialogues, large scale online deliberation), while others rest on the legitimacy of a demographically representative mini-public of a smaller number of people who are given the chance to deliberate in depth over a few days (e.g. 15-25 people in Citizens' Juries, or 150 or more in Citizens Assemblies).

A number of these processes may be included within a single deliberative project over time, in a way that strategically supports the diversity of learning and action needed for sound decisions, policies and programs, and offers a variety of ways for people to become involved. Processes are often adapted to suit local contexts, rather than being rigidly adhered to, and new innovations are continually being developed. Research shows that this adaptive approach is appropriate for issues such as climate change (see for example Forsyth 2005; Few et al. 2007; Meadowcroft 2004).

Many innovative techniques can be used in deliberative democracy to encourage 'co-creativity'. For instance Fischer's study of participatory governance approaches in Kerala, India, revealed that the 'cultural strategies' (as opposed to formal, rational discourse) used by organisers effectively allowed residents to participate and express themselves in local meetings that he deemed to be 'deliberative' (2006). This approach was in keeping with the understanding of fully deliberative space as 'not just filled up with competing interests but rather…something that is created, opened and shaped by social understandings' (Fischer 2006, 25).

Deliberative Democracy is widely applicable to the CRC, including:

- *Developing broad co-ownership of 'wicked problems', by creating opportunities for the public to learn, discuss and problem solve together:* A wide range of deliberative democracy tools are available to engage the public in unbiased discussion, designed to explore common ground, create space for preferences to shift, and allow for minority views to emerge and be retained. Tools include 21st Century Dialogues, Citizens' Assemblies, and Open Space Technology.
- *Developing ideas and assisting in the design of solutions (policies, programs, technologies)*: Drawing deliberative democracy research and game theory, people can obtain results that are 'better than rational' when they engage in thoughtful dialogue with a broader, more representative sample of the community. A feature is the ability to encourage "co-creativity", providing strong links and support to the Low Carbon Living CRCs *Living Laboratories* activity.
- *Making decisions and prioritising funding:* A range of deliberative democracy tools are well suited to answer a particular 'charge' or question (e.g. Citizens' Juries and People's Panels), and some can be used to reach decisions or develop recommendations for implementation (e.g. Participatory Budgeting).

[3] For further information on these and other deliberative democracy techniques see the National Coalition for Dialogue and Deliberation's website: http://ncdd.org ; and the International Association for Public Participation (IAP2) website: http://www.iap2.org

Systems Thinking And A Systemic Approach To Deliberative Democracy

Deliberative democracy can help citizens to practise systems thinking, by considering the full range of different, often conflicting perspectives that exist. It may be used for instrumental reasons, such as the practical need to integrate forms of knowledge in order to formulate effective policy, and/or in order to empower citizens and strengthen democracy as a normative or ethical goal in the face of sustainability challenges (Few et al. 2007). Deliberative democracy gives citizens the opportunity to collaborate, integrating rational discourse with normative visioning in a form of 'procedural rationality' (see Simon 1976) that involves various ways of thinking and knowing necessary to address wicked problems. Deliberative democracy's co-creative approach also provides a more effective basis for action within communities – it can encourage community action more powerfully than scientific knowledge and rational discourse primarily 'owned' by governments (Barker et al. 2012).

Mansbridge et al (2012) suggest the need for a systemic approach to deliberative democracy so we can think about deliberative democracy in large-scale societal terms rather than just individual sites. Theoretically, in such a system, deliberative deficiencies in one part of the system could 'right the wrongs' of deficiencies in other parts of the system. However, the authors note that "pathologies" inherent in our world-wide democratic systems mitigate the probability of any sort of ideal deliberative system. These pathologies include:

- tight-coupling (group think on an institutional scale);
- decoupling (silo thinking and acting);
- institutional domination (when a part of system eg an institution like the media, or domination by a social class or interest has undue influence over the other parts); and
- entrenched partisanship (zealous advocacy and polarisation) (Mansbridge et. al., 2012, p 22 -24).

From their broader systems vantage point, the authors propose three critical functions of a democratic system - "seeking truth[4], establishing mutual respect, and generating inclusive, egalitarian decision- making" (Mansbridge et al., 2012, 22). In other words, its three functions are "epistemic, ethical, and democratic" (Mansbridge et al., 2012, 22). These functions add a useful, more macro-dimension to the institution based deliberative democracy elements outlined in section 6.1 – deliberativeness, representativeness/inclusion and influence. Although the 'epistemic' function has similar connotations to the element of 'deliberativeness' in terms of careful consideration of differing viewpoints and options, epistemic focuses more specifically on the meaningful consideration of relevant reasons for a decision, based on facts and logic; and that this could be occurring in other locations in the democratic system. The 'ethical' function of mutual respect is usually included in definitions of 'deliberativeness', but here it is highlighted, and from a more macro-perspective, it keeps in mind that mutual respect is not only a 'would be nice' part of discourse, but "an ethical requirement among democratic citizens" (Mansbridge et al. 2012, p. 11). The 'democratic' function proposes a focus on equality, again reflected in the element of 'representativeness/inclusiveness', but the focus here on a democratic system being based on equal opportunity to participate, and not systematically excluding anyone without justification is critical. Hence, our broader notion of participatory sustainability includes these functions, not only to adopt a more macro-perspective, but importantly, to highlight the legitimacy of such decision-making as a key element of our democratic system.

Deliberative Democracy And Participatory Sustainability

Deliberative democracy has the capacity to synergise diversity wisely and disperse decision making power, both thought to be critical to generating responses

[4] Mansbridge uses this term in its broadest sense, understanding that there is no one absolute 'truth'.

to climate change and achieving low carbon living. However, deliberative democracy initiatives, to date, though achieving some important breakthroughs in terms of resolving complex issues and enacting the solutions, they have been unable to maximise the potential to bring about the transformational change needed for low carbon living. Most deliberative democracy initiatives have been one-off endeavours to resolve localised problems at a particular point in time. The question for the CRC is how to avoid this, and instead implement practices that will ripple outwards rather than concentrate inwards.

To focus on this critical aspect of low carbon living, we have coined a broader concept, that of 'Participatory Sustainability', which aims to 'scale out' deliberative democracy to include broad publics, 'scale up' such initiatives to address complex sustainability problems, and 'institutionalise' these new ways of thinking, discourse and action as 'business as usual'. We define 'participatory sustainability' as a concept embodying a normative theory for worldview and way of living in the world that draws on the *collective* intelligence, wisdom, and power of people—'power *with*' rather than 'power *over*'—to construct a sustainable planet with sustainable civilizations, societies, and communities. We situate this approach in the real world of competing values, powerful interests and a world in turmoil politically, socially, economically and environmentally. Our approach applies similarly to small scale institutional deliberative democracy initiatives as to local, national and even global initiatives.

PUBLIC PARTICIPATION INITIATIVES RELEVANT TO LOW CARBON LIVING – FROM AROUND THE WORLD

Political and legal commitment to public participation in technological change and environmental decision at national and international level can be traced back to the early 1990s. Formal opportunities for citizens to participate in decision-making have been established in law, policies and guidelines over the world, mainly related to major infrastructure and resource development projects. Planning for low carbon living and economic development and climate change has started to gear up in recent years. It has been widely acknowledged that a low carbon future cannot be achieved without involving citizens. However, it has in most of the cases been concentrated in the hands of governments and there aren't many examples demonstrating wider public participation beyond stakeholder engagement.

The United Nations Conference on Environment and Development (UNCED) in Rio in 1992 was one of the first to link the discourse of sustainable development (albeit emphasizing environmental issues) with the need for participation, stating: 'Environmental issues are best handled with the participation of all concerned citizens, at the relevant level' (Rio Declaration on Environment and Development, Principle 10, United Nations 1992). Similarly, one of the European Commission's 'Twelve principles of sustainable development' is that 'Decisions affecting sustainable development should be open and based on informed participation by affected and interested parties. A personal sense of responsibility and involvement should be promoted amongst all sectors of society' (1997, 120). The World Summit for Sustainable Development (WSSD) of 2002 was also an important milestone for participation, since it reinforced the need to institutionalise hybrid models of representation such as multi-stakeholder dialogues and partnership agreements (Bäckstrand, 2006), in keeping with the Agenda 21 statement that:

> ***Democracy, respect for all human rights and fundamental freedoms, including the right to development, transparent and accountable governance in all sectors of society, as well as effective participation by civil society, are also an essential part of the necessary foundations for the realization of social and people-centred sustainable development (United Nations 2002, 157).***

The focus on such public participation and expert deliberation at an international and transnational level has been on environmental management, aiming at factual and common good oriented problem solving. The Great Lakes regime between USA and Canada is a successful example that has adopted such practices. The International Joint Commission (IJC) a bi-national institution responsible for the administration, jurisdiction, investigation and mediation of the transboundary waters has established an expert advisory system, responsible for organizing and aggregating different deliberation and participation procedures for the public. The IJC has institutionalized six forms of public participation that inform the biannual reports informing environmental policy making in both countries. The participatory techniques are summarized in Table 1.

In the main, however, despite UNCED's recognition of the need for citizen participation in addressing sustainability issues, and the European Commission's call to involve affected and interested parties, citizens have remained at the receiving end of nearly all low carbon living "participatory" processes. Critical sustainability issues have not been addressed through public participation but rather through stakeholder participation. Lay-people have not had a voice. For example, the European Commission's Climate Policy Process, undertaken in 1997 in preparation for the Kyoto Conference of the Parties (COP) to the UN Framework Convention on Climate Change is an

example of an early deliberative exercise focused on climate change, undertaken in an administrative rationalist framework favouring expert knowledge. As such it had both positive results and major shortcomings. The process consisted of four workshops held prior to the Kyoto conference, in which researchers and decision makers together considered scientific and socioeconomic analyses, and political options for action. Then, after Kyoto, a fifth workshop was held between policy-makers and stakeholders, in which social partnerships between non-government actors and decision makers to implement climate change policy and reach abatement targets (van der Hove 2000, 466). Lay-citizens were not involved. From available reports, it appears to have been quite deliberative and productive, and it did influence the policy process at Kyoto to some extent. However, the voice of citizens was absent in these partisan workshops and in the Kyoto COP in general, effectively leaving climate policy to the elite. This followed on from many early 'participative' processes related to environmental issues that were criticized for being debates constructed mainly by and for experts (Eden 1996). Deliberation may have been achieved in the European Commissions' Climate Policy Process, but certainly not deliberative democracy. Indeed, there was no attempt at democracy since the great majority of the population - the lay-people - were excluded from the process. Furthermore, it was a one-off initiative, with no apparent intent to institutionalize it as part of climate policy development in Europe (van der Hove 2000, 466).

The fact that the European Commission's Climate Policy Process did have some influence is perhaps not surprising given research findings that although non-partisan forums involving citizens tend to have superior deliberative capacity to partisan forums (which tend to play out as competitions between competing, fixed agendas), the latter tend to have greater external legitimacy and policy impact, at least in places where deliberative democracy processes are not institutionalised and widely endorsed (Hendriks et al. 2007; Levine et al. 2005). The roles of partisans and non-partisans in public deliberation about low carbon living, including their relative long term impacts, warrant further investigation in the CRC.

In Australia, greenhouse gas emissions reductions policies are typically created through the usual top-down government channels, through administrative rationalist approaches, with citizens relegated to a peripheral vantage point. Public consultation is frequently undertaken as an add-on to technocratic, managerial systems of governance, in which experts make decisions, and the views of ordinary citizens are muted. Vested interests and lobbyists figure prominently in such hierarchical forms of consultation.

This approach can increase citizens' cynicism and mistrust of government, undermine decision making processes and erode the potential for action. This can occur despite the fact that citizens may have been invited by governments to contribute to planning processes. A vicious cycle is perpetuated when citizens perceive that governments' efforts are tokenistic, too little, too late (Hartz-Karp 2007). Similar experiences have been noted elsewhere around the world, such as in the public consultation to the UK Climate Change Act 2008 (Scheer and Höppner 2010).

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noted elsewhere around the world, such as in the public consultation to the UK Climate Change Act 2008 (Scheer and Höppner 2010).

Table 1: Institutionalised Participatory Techniques by IJC

Participation technique	Characteristics
Biannual public hearings	• Organized at a bi-national level at the end of two-year- working cycle. • Open to all residents in the Great Lakes basin. • All participants are entitled to be heard • All issues and questions can be raised.
Ad hoc public hearings	• Held whenever the IJC has to fulfill an investigative function according the Boundary Waters Treaty • Including a scientific analysis by external experts.
Public workshops and meetings	• The most numerous and widespread participatory form addressing issue-oriented and specific topics concerning ecological, economic, socio-political and institutional problems, questions on implementation, the work and tasks of the expert advisory boards, communication and coordination as well as the review of the contracts
Round tables, focus groups and consultations	• Organised to involve those stakeholders that are not actively engaged in other participation. The goal is to search for collectively acceptable problem solving options for specific issues and their common recommendation.
Regional public advisory bodies	• Established due to one of the lakes' Lakewide Management Plans, which are in cooperation with sub- national and regional governments and address the definition of problems, plans of procedures for load reduction, selection of remedial action as well as monitoring and control.
Local public advisory committees	• Established in more than 40 "areas of concern" at the local level, which serve to develop and implement Remedial Action Plans in cooperation with local and regional governments and administrations. Areas of concern are local geographic areas, in which the objectives of the GLWQA fail to a greater degree than the rest of the Great Lakes.

Source: (Klinke 2011)

A number of causes of this 'deliberative deficit' have been suggested, including:

- a lack of understanding and experience of the basic principles of designing, implementing and evaluating deliberative democracy processes to ensure deliberativeness, representativeness/inclusiveness and influence;
- bureaucratic capture of participatory processes by administrative rationalist decision makers, suffocating the participatory and power sharing ambitions of deliberative democracy;
- implementation of community engagement processes with the intention of deflecting protest rather than supporting deliberation;
- the failure to design appropriate roles for scientific and other experts;
- inappropriate facilitation;
- negative impact of the media; and
- the presence of power differentials amongst participants (Few et al. 2007; DiMarchi and Ravetz 2001; Bäckstrand 2006).

Indeed, analysts have determined that many so-called 'participatory' approaches are not actually deliberative at all (Buckeley and Mol 2003). 'Participation' has become a catch-word describing a range of activities from acquiring information about decisions that have already been taken to mass mobilisation through collaboration (Few et al. 2007). In some cases, participatory processes, such as climate change adaptation in coastal zones in the UK, that were designed simply to obtain support for predetermined goals or to block dissent and avoid conflict, have caused disillusionment and disempowerment amongst the community (Few et al. 2007). While on the one hand, the UK appears to be the global leader in creating initiatives to engage citizens for low-carbon planning, on the other hand, the majority of those examples are one-off projects, and mostly, their aim is behavior change and social learning through provision of information and sporadic community engagement. The basis is more educative than collaborative problem solving. The assumption appears to be that if lay-people

only knew better, they would behave differently. Table 2 exemplifies such practices and outlines challenges faced during the implementation of locally imitated projects aiming at carbon reduction.

Our extensive literature review has revealed a disturbing paucity of acknowledged, successful initiatives in public participation relating to low carbon living. This is despite the fact that for some decades, both natural science and social science experts have agreed that public participation is a key means to achieve sustainability, including low carbon living. Furthermore, deliberation has often been cited as a key element of effective participation. The substantial research effort into participatory approaches to environmental issues undertaken has clearly indicated that the strengths of deliberative processes include their capacity to allow new and broader perspectives to develop, educate citizens (and experts), improve the quality and democratic character of decision making, and provide greater legitimacy to political processes. Moreover, participatory approaches are more likely to achieve their objectives than conventional methods of decision making or community consultation (Meadowcroft 2004; De Marchi and Ravetz 2001). Despite research evidence about the need for deliberative, empowered, inclusive public participation to bring about improved sustainability, Table 3 reveals the overwhelming number of initiatives across the globe that have been participative, but fall well short of being deliberative, empowered and representative.

Table 2: UK examples of Community Engagement Practices in Low Carbon Communities

Project Name	Location	Aim	Engagement Activities	Challenges
TrIsCo .	Hampshire, UK; Andalusia, Spain; Viismi, Estonia; Gotland, Sweden	Transition Island Communities: Empowering Localities to Act - a two year project – July 2009 to September 2011 - aimed at overcoming the barriers to implementing low carbon communities To engage variety of communities each at a different level of involvement in the climate change debate.	• Measuring Energy use • Educational programs • Training programs • Community engagement (Climate street parties; A Solar and Biomass Heating Fair) • Knowledge Exchange & Policy influence	• Not identified
Low Carbon Community Project	Shropshire Country Council	To achieve significant reduction of CO_2 emissions within three local communities, involving household residents and business	• Home energy checks, business and building audits, energy efficiency grants and 'Climate Change Months' awareness-raising activities	• Dissemination of information campaigns thwarted by apathy and indifference towards climate change among community members • Difficulties associated with engaging community members • Building trust between authorities and communities in relation to establishing and maintaining relationship
Green Living Centre	London Borough of Islington Council	A community resource to help people in the Borough reduce their carbon emissions in and around the home	• Face-to-face advice to visitors on recycling, energy, efficiency, biodiversity and green travel. One-off events to boost the Centre's profile and engender greater interest and increase visitors numbers	
Low-carbon Communities Challenge	22 communities across the UK	To fund, and learn from, community-scale approaches to the delivery of low carbon technologies and engagement activities.	• Face-to-face, personal approaches such as door knocking, using either trusted local residents or local councillors; • Training energy or community champions to spread awareness and knowledge in the community and provide residents with 'go to' points; • Involving schools in a project to raise awareness and engender support • Having a well-known local person to champion the work. For example, Kirklees enlisted the support of a local councillor to go door knocking over a weekend; • Getting the strongest and loudest opponents on side	• resistance within the community which have been related to lack of community consultations from the outset • Project expectations and assumptions didn't match those of wider community

Source: (Peters 2010; Farley and Goulden 2011)

Table 3: Global Examples of Public Participation in Low Carbon Initiatives

Initiative	Duration	Location	Initiator	Level	Aim	Methods and participants	Participants	Outcome	D[5]	R[6]	I[7]
Danish Future Energy Systems[8]	2004-2007	Denmark, EU	Danish Board of Technology	National	To create a debate, contribute to decision-making processes and support on-going dialogue between key stakeholders.	Future panel	Members from the Danish Parliament;	Resulted in input to the Danish Parliament on a new Energy Strategy.	+	-	?
						Steering group	Politicians and experts (the biggest or most important players in the energy sector, researchers, NGOs, and the Danish parliament)				
						Public hearings open to the public	Panel members, experts, general public				
Engaging Civil Society in low-carbon scenarios[9]	April 2009 – March 2012	France and Germany	European project[10]	National	Key aim of the project was the development of a method to transparently integrate stakeholder contributions into modelled energy scenarios.	Scenario building, stakeholder workshops, creation of a European Network on Low Carbon Scenarios	Trade unions, energy companies, environmental NGOs, consumer NGOs, industries and banks.	The central position of stakeholders in scenario building allowed the integration of the degree of acceptance for specific energy policy measures or technology decisions.	+	-	/[11]

[5] Deliberative
[6] Representative
[7] Influential
[8] Dorfman,P., Prikken, I. and Burall, S. 2012. Future national energy mix scenarios: public engagement processes in the EU and elsewhere. EESC, Brussels
[9] Ibid.
[10] Participants - Germanwatch, Potsdam Institute for Climate Impact Research (PIK), Climate Action Network France (RAC-France), International Research Center on Environment and Development (CIRED), International Network for Sustainable Energy - Europe (INFORSE-Europe).
[11] This was a research project, not linked to any formal decision-making processes

Energy Cities IMAGINE initiative[12]	2006 – on-going	Europe[13]	Energy Cities; a European association of local authorities	Pan European, Local Authorities	The purpose of IMAGINE is to build 'visionary plans' for the long term sustainable development of cities for a low energy climate resilient future.	Exchange platform, think- tank, resource centre	Technological and industrial actors; those from the energy and service industry; consumers; local communities, politicians and trade unions; the academic, cultural and media sectors.	Resulted in a network of partners from the public, private and community sectors around Energy Cities.	?	-	+
Public participation approaches in radioactive waste disposal: Implementat -ion of the RISCOM model in Czech Republic[14]	January 2008 - July 2009	Czech Republic	ARGONA (European Commission programme) Coordinated by Karita Research	National	To raise awareness and facilitate active involvement of the general public and key stakeholders, in informing and improving the decision-making process. The RISCOM model attempted to enhance transparency in decision-making mechanisms about complex and controversial processes	Stakeholder reference group, working group and public hearing	Stakeholders – Czech nuclear waste management; government bodies, representatives from potential siting communities and NGOs: external expert support	NA	-	-	?
The Spanish Energy Mix Forum[15]	2012	Spain	European Commission, Economic and Social Committee	National	A structured national discussion on differing low carbon energy sources in Spain, reviewing economic, technical, environmental and socio-political aspects of differing low carbon energy sources	Piloting the pan- EU multi-stakeholder national energy forums	'Up-stream' participation of a very broad range of stakeholders throughout the dialogue	The Forum is piloting the EESC concept of multi-stakeholder national energy mix forums.	?	-	?

[12] Dorfman,P., Prikken, I. and Burall, S. 2012. Future national energy mix scenarios: public engagement processes in the EU and elsewhere. EESC, Brussels
[13] Pilot projects - Bistrita (Romania); Dobrich (Bulgaria); Figueres (Spain); Lille (France); Milton-Keynes (UK); Modena (Italy); Munich (Germany); Odense (Denmark)
[14] Dorfman,P., Prikken, I. and Burall, S. 2012. Future national energy mix scenarios: public engagement processes in the EU and elsewhere. EESC, Brussels
[15] Ibid.

Sustainable NOW[16]	2012	Bulgaria, Hungary, Italy, Germany, and the UK.	European Sustainable Energy Communities Effective Integrated Local Energy Action Today, IEE/07/752/SI 2.499210	Pan European, Local Authorities	To arrive at sustainable energy solutions at community level, work with levels of government closest to citizens through building local government capacity, learn from experience, encourage political leadership, and identify opportunities for change at political, administrative, economic, social and environmental levels	Capacity building, peer exchange and review through involvement with local and regional actors, including: local governments, 'frontrunner' communities, peer-to-peer exchanges, study visits, capacity development workshops, and staff trainee programmes	Local and regional authorities, communities and stakeholders	Resulted in energy guidance packages with instruments to support Local Energy Action Plan (LEAP) implementation.	-	-	+
PlanLoCaL (Planning for Low Carbon Living[17]	2009 – on-going	UK	Centre for Sustainable Energy, Bristol	National	A programme designed to give communities embarking on a community energy project the confidence, knowledge and ambition to achieve a low-carbon future for their area. It provides support on positively influencing strategic planning, as well as driving forward low-carbon initiatives in their area	Community-led Planning,	NGO, Stakeholder Engagement, Local Government	Community participation in local planning and decision making	+	-	+

[16] Ibid.
[17] Source: http://www.planlocal.org.uk

DELIBERATIVE DEMOCRACY AND LOW CARBON LIVING

As evidenced in section 7, the overwhelming number of participatory processes implemented worldwide that are either directly or indirectly relevant to climate change and low carbon living have fallen well short of achieving the change required to turn the curve to greater sustainability. The vast majority of these initiatives have been aimed at stakeholder engagement; others have invited broader participation, but nearly all have involved a particular initiative at a particular point of its evolution. Those initiatives involving the public sometimes aim only to inform people; other times, to consult to elicit feedback; occasionally, to involve the public throughout the process to ensure people's concerns are understood; and rarely, to collaborate in joint problem solving and decision making. Although theoretically, the spectrum of community engagement involves varying levels of public impact, the higher levels of public impact - collaboration (partnering with the public); and empowerment (placing the final decision-making in the hands of the public) are rarely employed. The only examples of such empowerment in the literature review, were those that purposefully tried to institute deliberative democracy. This is not difficult to understand. Democracy is essentially about power sharing. Engagement is essentially about one-way and two-way communication. We know most initiatives aimed at engagement have not made significant or lasting change to low carbon living. The question is whether initiatives designed according to deliberative democracy principles have made or could make more or less of an impact.

As a precursor to this exploration into deliberative democracy initiatives, it is important to note that there are discrepancies between the theory of deliberative democracy and the way it is implemented (Few et al. 2007; Bäckstrand 2006). Hence, the following review of the literature assesses the deliberative democracy initiatives found according to the ideal theoretical model outlined in Section 1. This model includes the key macro *functions* of deliberative democracy - epistemic, ethical, and democratic, aligning them with the initiative based *elements* of deliberative democracy - deliberativeness, representativeness/ inclusiveness and influence. The following initiatives show that these ideals have been achieved to varying degrees. However, if we set the target higher to that of 'participatory sustainability', involving scaling up, scaling out, and institutionalization, in order to turn to curve towards lower carbon living, it is clear that most of these initiatives fall short of the mark. It is for this reason that we recommend a methodology, instituting the International Participatory Sustainability Panel, so the CRC can help nudge the system in the right direction. Such a Panel can avoid wasting time, effort and money on one-off efforts unlikely to have lasting impact, while ensuring evidence based research on best practice design, implementation and evaluation, that will not only ensure greater effectiveness of CRC deliberative democracy initiatives, but more importantly, set the stage for the transformational change needed to move to low carbon living.

The CRC has committed to instituting deliberative democracy to achieve low carbon living. However there are no models to follow. Certainly, there is no model for global deliberative democracy that we can adopt to help to achieve low carbon living (Dryzek and Stevenson 2011). We are unlikely to achieve this in the near future. The lack of international governance institutions with legislative power makes it very difficult to institutionalise deliberative democracy for low carbon living at that scale (Chester and Moomaw 2008). This situation is further complicated by the realisation that 'state sovereignty no longer constitutes the only pillar supporting international world order' (Chester and Moomaw 2008, 192) – other major stakeholders in the global economy, and increasingly citizens who are testing their ability to mobilise political pressure through social media, are changing the playing field. Transnational governance founded on collaboration between civil society, government and market actors is assuming greater influence (Bäckstrand 2008; Klinke,

2009). This has significant implications for governance of climate change and other sustainability issues, presenting both barriers and opportunities, and specifically for deliberative democracy. The extent to which these forces will shape international governance for low carbon living is not yet clear, and is an important subject for research.

To date, there has been only one recurring, global, deliberative democracy initiative – World Wide Views (WWViews). The first of these was World Wide Views on Global Warming, run by the Danish Board of Technology. According to independent assessments, the global initiative was deliberative, yielding informed, well-considered views (Rask et al. 2011; Riedy and Herriman 2011). It was held on a single day, 26 September 2009 and involved over 4,000 citizens from 38 countries. An Australian forum was convened by the University of Technology Sydney's Institute for Sustainable Futures as part of WWViews. The initiative involved both face-to-face group work and online connection between groups around the world as the day proceeded. There was considerable effort made by the organisers to maximise representativeness, using random sampling where feasible. However there were obvious constraints in terms of money and distance, and marginalized people were unlikely to participate. The process aimed to influence the outcomes of the 15th Conference of the Parties to the UN Framework Convention on Climate. WWViews was not linked to government institutions in an official capacity, so it was not surprising that it did not significantly achieve this aim, at least, not in terms of direct influence (Rask et al. 2011; Riedy and Herriman 2011). Regardless, it was sufficiently successful to maintain global interest and support, with WWViews on Biodiversity running a global deliberation on 15 September 2012. Despite the Danish government ending their financial support for the Danish Board of Technology, WWViews still attracted 3,000 randomly sampled citizens in 25 countries who learned about the issues, expressed their views and drew conclusions that were then submitted to the Conference of the Parties (COP11) in India, October 2012. In this instance, WWViews had more apparent influence, with the report of the WWViews deliberations being considered by the Executive Secretary of the UN Secretariat for Biodiversity, then the widespread agreement of COP11 that the citizens of the world should be involved in the UN decision-making processes, and finally, the last resolution of COP11 calling on all countries to support projects such as WWViews. Currently, plans to carry out another WWViews, on Biodiversity in 2014, are being promulgated across the globe.

There are more examples of deliberative democracy relevant to low carbon living at the local and state level. The recent Alberta Climate Dialogue (ABCD) is one such innovative, action-oriented deliberative process, with a strong research intention of 'building understanding about the scientific, economic, social, and individual aspects of climate change' and exploring how to achieve better climate responses while building capacity for ongoing citizen participation in climate issues (ABCD 2012, n.p.). This five year project is based on the belief that 'well-designed citizen deliberations can shift the politics of climate change in Alberta, across Canada, and internationally' (ABCD 2012a, n.p.). It is a 'community-university' research alliance funded by grants and support from universities and community organisations. There have been significant efforts to involve industry (including the tar sands) and government. It is hoped that the project will lead to better decisions, while empowering the community to act. Its strategic aims are to:

1. Support more effective citizen engagement practices in Alberta
2. Explore the role of citizen engagement for better climate responses
3. Build capacity for citizen engagement on climate issues in Alberta (and beyond) (ABCDa 2012).

In 2012, ABCD ran a Citizens' Panel on Edmonton's Energy and Climate Challenges, partnering with the Edmonton Local Government, which had already developed an ambitious climate change plan, although it had not been funded. The Panel involved 56 local citizens, who deliberated together for six days over eight

weeks in order to produce a report of their recommendations for energy policy for the city (ABCD 2012b). This was the first large scale deliberative event in the project. Panel members participated in facilitated deliberations, supported by information gained from government officials, as well as industry and university experts, and climate change information provided in a handbook produced for the Panel. Their findings were presented to the Edmonton Local Government Council. According to the ABCD coordinator, it is hoped that the Panel and its Report will be a prod to bold action, and a reminder of citizen willingness to act purposefully to address climate change. However, it is recognized that this is likely to be tempered by a political climate of reluctance to adopt bold and comprehensive steps forward. In terms of deliberative democracy, this initiative was high on the scale of deliberativeness, was adequately representative and inclusive, but in terms of influence, scaling out, potential recurrence, and possible institutionalization, there are only question marks.

As critiques of deliberative democracy to date have noted, there are few examples of deliberative democracy that have eventuated in more than one-off initiatives. Participatory budgeting (PB), however, is the grand exception, It is practiced as a cyclic democratic institution in more than 1,500 cities over five continents. Its proponents cover all political orientations and organizational types. PB training manuals can be found in dozens of languages as diverse as Chinese, Spanish, Albanian, English, Japanese, Portuguese, Arabic, Korean, and German (Sintomer et al. 2010). Its inception, the renowned PB in Porto Alegré (Brazil), is an exemplar of successful deliberative democracy (Pateman 2012, 10). Although PBs have not been explicitly related to low carbon living to date, their intent is to share decision-making with ordinary citizens about issues of great importance (the budget), and to achieve a more equitable distribution of resources – both critical elements of a low carbon living world. In this institutionalised form of deliberative democracy, decision making power is delegated to citizens, usually in relation to a proportion of an overall budget. PBs are ideal demonstrations that well-designed and implemented deliberative, participatory processes involving citizens can yield decisions that are at least as sound and sophisticated as decisions made by elites, and often more so, since they incorporate the normative views of the community. Furthermore, they bring additional benefits such as empowerment and improved accountability, and a more powerful basis for action, particularly at the local level (for instance see Boulding and Wampler, 2010; Fagotto and Fung 2012).

Porto Alegré's PB is undertaken by municipalities, and involves citizens in a year-long process of budgeting for funds to be spent on public works such as schools, sewage and other public works (Boulding and Wampler, 2010, 126). Three of the four types of institutions that support the budgeting process in Porto Alegre are deliberative. The regional and thematic assemblies, the Participatory Budgeting Council (COP) are both deliberative, and citizens also deliberate about the constitution for participatory budgeting (Avritzer, 2006, 627). A variety of types of deliberation occur in the Participatory Budgeting Council (COP), during which community members deliberate about priorities, and collaborate with the municipal administration to determine the final format of the budget (Avritzer, 2006, 628). Furthermore, high levels of participation (1-1.5% of the population participated in 2006) have been achieved over time (Avritzer, 2006, 629, 630).

Porto Alegré's participatory budgeting has been researched over many years, and inevitably, there are critiques. For instance, while participation rates are generally high, levels of participation in PB across Brazil are affected by issues such as the historical circumstances that framed the relationships between citizens, government and other actors, as well as how effective citizens perceive the PB process to be (Avritzer, 2006, 630). In terms of representativeness, issues of inequality have been noted in the assemblies and COPs. While the groups of people who deliberate in PB assemblies are representative of the income distribution of the broader community, research in 2006 showed that fewer people at the lower end of

wage earnings actually spoke at assemblies. In addition, slightly more women (51%) than men attended the assemblies (Avritzer, 2006, 627). In COPs, participants were not entirely representative, since their income and education levels differed from community demographics (Avritzer, 2010, 631). On balance however, institutionalised participatory budgeting in Porte Alegré has made positive achievements in terms of its intended aims, such as improving the well-being of low-income citizens. For instance, analysis of data from 220 Brazilian cities demonstrated that there was a significant increase in spending on health and education in municipalities that have participatory budgeting, possibly because a very high proportion of citizens who participate have low incomes and low levels of education. In Porto Alegré, participatory budgeting has successfully led to a redistribution of resources away from middle-class areas to low income, densely populated areas (Boulding and Wampler, 2010, 127; Avritzer, 2006; Waiselfisz et al. 2003). Furthermore, PB has had a 'democratizing effect', significantly altering the relationship between social actors and politicians, a secondary benefit which some analysts argue is more significant than the intended redistribution of public funds (Avritzer 2006, 633). These secondary benefits are integral to a systemic concept of low carbon living.

Theorists have argued whether PBs conform to the ideals of deliberative democracy. On the one hand, many PBs are criticized for failing to match the high standards of empowered participation of the original version in Porto Alegré (Pateman 2012). On the other hand, PBs have been criticized for not being sufficiently deliberative. The issue of the deliberativeness of PBs is a much contested issue. Often, the quality of deliberation is not apparent to observers. For instance, New York's Participatory Budgeting processes, which began in 2011 and are ongoing, involve the allocation of US$1 million to improve infrastructure in each of New York City's six districts. The process involves two sets of neighbourhood assemblies and meetings at senior centres, Parent Teacher Associations, and with young people in each district, who together consider proposals that have been submitted. If more information is needed, delegates from the assemblies may be selected to go into issues in more depth and report back to the other participants. Some of the engagement techniques used are quite innovative in the field of deliberative democracy, such as using open source mapping software and videos, so that more citizens have a chance to submit proposals. Final decisions are made about which projects will be funded through a residents' voting process. The point of contention is that such PB processes often replicate known patterns of advocating, lobbying, and getting supporters out to vote, which is far from 'deliberative' as defined by theorists such as Gastil (2008) and Hartz-Karp (2007) – the respectful listening to diverse views, and discourse that carefully considers and weighs options to arrive at a coherent voice.

Most PB initiatives throughout the world are founded on the principle of the broad public determining through a voting aggregation process which projects developed by resident groups should be funded. There is only a small handful of PBs that involve public deliberation alone, where demographically representative participants (randomly sampled) collaborate in an intentionally deliberative process, often called a minipublic, over a considerable time to determine the budget allocation. Examples of the latter include Deliberative Polling in China (Fishkin, 1998) and the recent PB deliberative minipublic in Canada Bay, New South Wales, Australia (Hartz-Karp 2012, 3). Unlike most PBs, the Canada Bay PB involved the program allocation of the entire City budget. It should be noted, that from a different vantage point, some PB theorists have argued that such deliberative minipublics are not actually participatory budgeting, since they do not include a broad public vote. As an aside, to date, none of the participatory budgeting minipublic initiatives have become cyclic events, that is, institutionalized as part of the decision-making fabric.

While deliberative democracy has been institutionalised with significant success in cases such as participatory budgeting in Porto Alegré and the

Citizens Initiative Review in Oregon, elsewhere deliberative democracy is frequently implemented on a discretionary basis, and has not permeated the everyday workings of government (Pateman, 2012). While we argue for institutionalisation of deliberative democracy where appropriate, deliberative projects undertaken on a discretionary basis can still be powerful and effective, although perhaps to a more limited extent. Deliberative democracy initiatives undertaken in Western Australia from 2001-2005 at the discretion of the Minister for Planning and Infrastructure, Alannah MacTiernan, were intended to better inform the government, leading to wiser decisions, incorporating consideration of low carbon living and other sustainability issues. A demographically representative 'mini-public' (with all or at least 1/3 participants randomly sampled), was invited to deliberate about particular issues, producing outcomes that legitimately represented the considered views of the population and were therefore adopted by government (Carson, 2007). Although decision making power officially remained with the State Government, where an issue fell entirely within the Minister's jurisdiction she often undertook to abide by the decisions of citizen deliberators, effectively handing decision making power to the community. In cases where broader government approval was required, the Minister committed to take the decisions to the relevant government body for consideration.

The deliberative democracy work instigated by Minister MacTiernan, at the time, the State Minister for a mega portfolio of Planning and Infrastructure, is widely acknowledged to be a ground-breaking example of effective deliberative democracy. However, such processes were not institutionalised within State Government institutions at that time, or in subsequent Western Australian state governments. Despite this, the policy developed through these deliberative democracy initiatives, carried out over a 5 year period, became ensconced in the region's planning and infrastructure, and still remain at their core today. The longevity of the core strategy of planning documents could be attributed to the rigor and legitimacy of the public dialogue, regardless of the fact that the process was not officially institutionalised. However, the lack of institutionalisation has made the ongoing impacts of this work virtually impossible to evaluate. There has been no reflexive evaluation over time that could have aided learning about the content or process outcomes of this deliberative democracy work, let alone about potential whole-of-government approaches to foster sustainability, which the members of the portfolio later advocated. There needs to be intentional research design to determine the degree to which institutionalisation of deliberative democracy can support low carbon living, and the factors that might support this, such as organisational change within government, broader cultural change, and the influence of the media.

Another example of a deliberative process relevant to urban planning for low carbon living occurs in the American city of Portsmouth, New Hampshire. The deliberative democracy process 'Portsmouth Listens' heavily influences the development of the city's Master Plan. Portsmouth's Planning Board uses the input and priorities from 'Portsmouth Listens' to help develop the ten-yearly review of its Master Plan (Portsmouth Listens, 2003a). Citizens participate in deliberative 'study circles' in 25 areas of Portsmouth. Each facilitated circle has between 8-15 participants, who meet for two hours a week over four weeks to consider what matters to them in their area:

> ***The Portsmouth Listens Master Plan study circles involved three phases over two years involving over 400 citizens. The Master Plan adopted the Vision Statement developed by the study circles. A second round focused on specific areas like transportation, open space and sustainability, the character of downtown, or building community. In this round residents planned out the vision that was the consensus of Phase One, and worked together through dot voting to set priorities. A third phase gave specifics about implementation. The resulting master plan***

> ***was largely driven by the vision and energy of the citizen dialogue, and has provided a roadmap for much of Portsmouth's policy and infrastructure initiatives since 2004 (Sustainable Portsmouth, 2009).***

This case study provides another illustration of the way deliberative processes can catalyze collaborative action as well as collaborative decision making:

> ***Portsmouth Listens has encouraged all Study Circle participants to recognize it should be about what everyone can do. That is, in addition to what the City can do, we must also be prepared to act and contribute through public-private partnerships, non-profit and volunteer institutions, businesses, and, most importantly, as individual citizens. It is all about, "How Can We Make Portsmouth the Best Place to Live and Work for Everyone?" (Portsmouth Listens, 2003b)***

The capacity for deliberative democracy to inspire and support action is a key insight when striving for low carbon living, which will require appropriate planning decisions, as well as a commitment within the community to embrace lower carbon intensity as an ongoing lived reality.

In Hampton, USA, the local government has collaborated in partnerships with citizens and stakeholders for around twenty years, moving from priorities identified in deliberative conversations to taking action to co-produce public goods, 'including safer streets, better schools and a more cohesive community' (Schor and Tillman, 2011, 4). This project has developed over the long term as a result of the city's 'intentional investment in institutional scaffolding that supports multiple civic engagement initiatives'. This included investment in capacity building and leadership development, changing its internal institutional culture to become more deliberative and innovative, and leveraging resources through partnerships (Schor and Tillman, 2011, 4). Faced with a raft of problems in the late 80s, including low revenue, high tax rates, crime and drug use, the City government consciously 'reinvented' itself, redefining its position to become a facilitator of deliberation and action rather than a mere service provider and decision maker (Schor and Tillman, 2011). Sections of the community with particular issues came together to address them. For instance the "Coalition for Youth" consisted of 5000 young people who worked together for a year on a Youth Master Plan which was integrated into the Strategic Plan, while the Coalition became a City department with the task of using ongoing public deliberation to identify priorities and implement them. Participatory budgeting processes were also used in Hampton when decision makers were facing the task of having to make cuts from a budget that was already tight.

This approach to collaborative governance helped the Hampton community move away from the unhelpful 'us and them' mentality and the City has worked hard to ensure that the community's visions are turned into action, leading to considerable infrastructure development, and community satisfaction with the City and with the processes of government. There have also been challenges such as the loss of institutional knowledge that has occurred as staff members retire or leave, and funding cuts. The City is now looking at ways to link online and face-to-face deliberation, and to engage people with little spare time such as working parents, and dealing with an increasingly culturally diverse population, including many people who do not speak English fluently (Schor and Tillman 2011).

The 'Geraldton 2029 and Beyond' Project in Western Australia is another valuable case study of deliberative democracy, and demonstrates its capacity to lay the groundwork for more effective responses to climate change than conventional decision-making processes. Like 'Portsmouth Listens', it involves citizens collaboratively in its urban planning process. Since 2010, the City has invited stakeholders and lay-citizens to participate in a wide range of ongoing public deliberation processes to imagine the future they want for the Greater Geraldton region and then to actively

participate in achieving it. Different citizens have been involved in different elements of the overall deliberative project (see Figure 1). The process was designed to:

> ***provide diverse opportunities for a significant cross-section of the community to have conversations on issues that matter to them in ways that are inclusive of different viewpoints, cognizant of different values, seeking and carefully considering alternative options, enabling them to explore the potential for common ground and joint action. Decisions and actions that involve the City administration have been fast-tracked through the system, implemented where feasible, and explained when not (Hartz-Karp 2012, 5).***

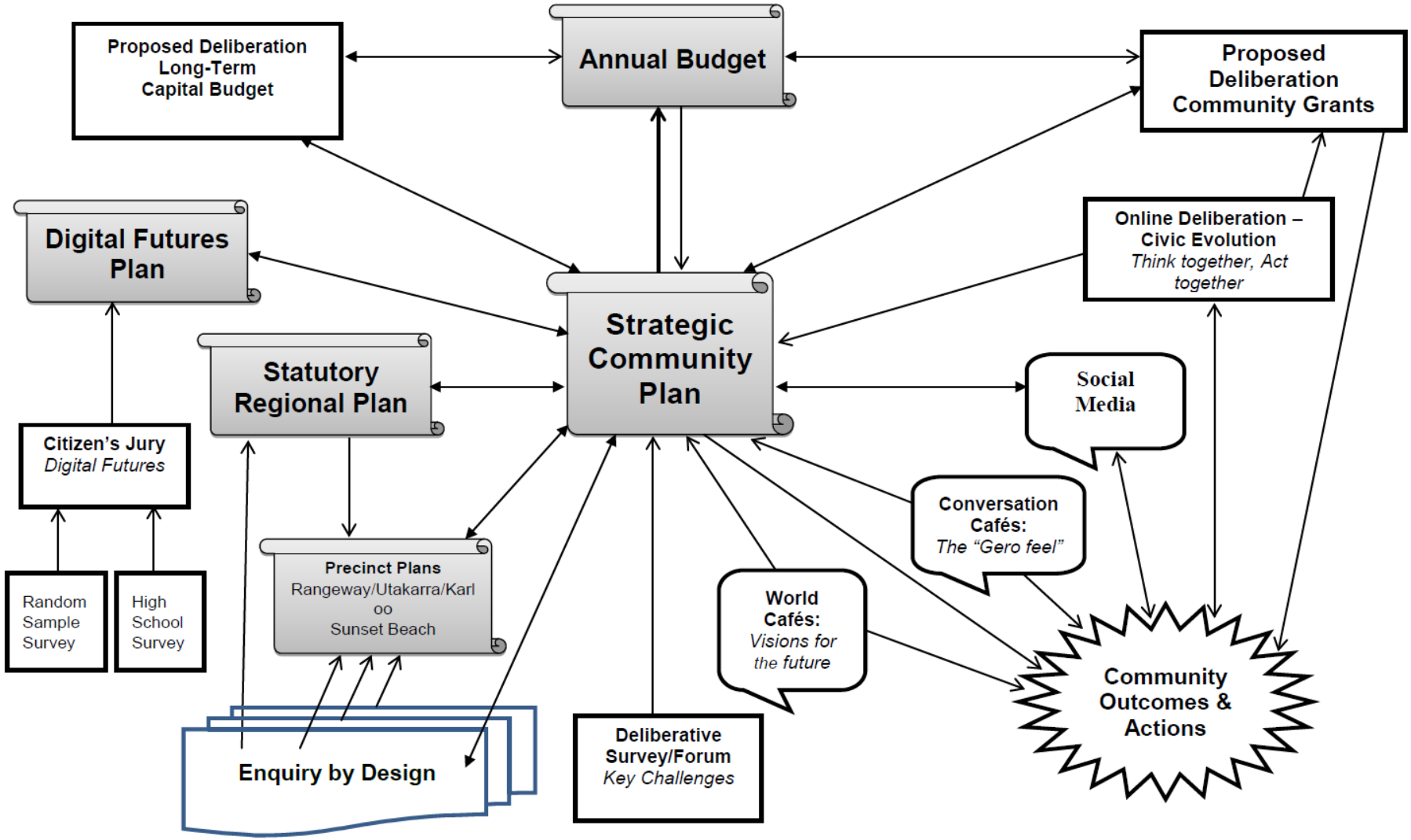
This has resulted in plans and actions that are more far reaching than local decision makers had ever envisaged, an outcome with is in keeping with other researchers' findings that public deliberation can lead to improved sustainability outcomes (Bulkeley and Mol 2003). Notably, the Strategic Community Plan, created through public deliberations over a year, incorporates a key goal for the city and region to become carbon neutral. There have been challenges, such as the need to work with existing forms of government planning and implementation, which have been met to some degree thorough adaptive management, identifying appropriate opportunities to implement deliberative democracy as they arise (Hartz-Karp 2012). Other challenges have included transitioning through local government elections, which meant that the trust built with the former council had to be rebuilt with incoming council members; and changes of key staff, such as the impending departure of the innovative CEO who drove adoption of the deliberative democracy process in the first place.

Although the above case studies are exemplary endeavors in deliberative democracy and at a minimum, at the local level, have been scaled up, scaled out and if not institutionalized, then at least they have endured over time. However, there has been no mechanism to maximize the learning gained and establish a firm basis for best practice. To achieve this would require an a priori agreed design and evaluation model that could be applied to each to compare and contrast. Instead, much of what has been written and researched about each of these initiatives has been instigated and often implemented by the initiatives' proponents, and hence lacks the legitimacy and robustness of independent analysis. As a consequence, there have been lost opportunities to learn more about potential success factors, drivers and inhibitors to transformational technologies of cooperation.

Before exploring such a design and evaluation model, there is an additional aspect to the effective scaling out of deliberative democracy initiatives, and that is the role of media, both traditional and social media. Notably, a significant aspect of the Geraldton 2029 and Beyond project has been the support of the local newspaper for many of the deliberative democracy endeavors. In a positive and proactive way that supports community development rather than the usual 'muck raking', the paper has encouraged community dialogue. This has included featuring short, positive stories about local public deliberation participants, including running reports of citizens' deliberations, and inspiring social media discourse through their facebook page which often features proposals developed through public deliberation.

Positive media support, however, tends to be the exception rather than the rule, with poor quality media coverage more often hindering the cause of deliberative democracy. Rather than 'helping to clarify differing viewpoints without prejudice', media coverage can deteriorate to 'headline' polemics, 'dirt digging' or providing support for vested interests (Hartz-Karp 2012, 14). For instance in 2010, Australia's newly elected Prime Minister, Julia Gillard, announced her intention to convene a Citizens Assembly on climate change, involving 150 citizens. However, media coverage was overwhelmingly negative, strongly criticizing the initiative and citing critics who were

Figure 1: The Deliberative Democracy Process in the City of Greater Geraldton (Geraldton 2029 and Beyond)



cynical and derogatory. Lyn Carson (2013) argues that this was due to fundamental process design flaws of the proposed initiative, and the failure to adequately inform the media about the proposal, which could have been done by distributing a media package. Carson suggests this omission meant that reporters did not recognize the difference between deliberative democracy and poor consultation processes, or if they did, the design flaws (described below) undermined the legitimacy and quality of the proposed deliberative process to such a degree that it drew heavy criticism.

Carson points to a number of design flaws and issues. First, the Prime Minister's comments indicated that she might not understand the nature of Citizens Assemblies. For instance she stated that she would lead the debate and the advocacy of the Government's approach (Carson 2013), a position that contradicts the notion that organisers should keep their own preferences out of the picture so that participants are free to go where their deliberations take them. This requires careful framing of the issue prior to deliberations so that participants clearly understand the scope of their task. Secondly, the Government's support for an emissions trading scheme (in the form of the failed Carbon Pollution Reduction Scheme legislation) was well known. The fact that the CPRS was the basis for dialogue in the Citizens Assembly made it seem unlikely that the recommendations of the Citizens Assembly would be adopted if they diverged at this late stage of policy development, a factor that increased critics' cynicism. Carson argues that the CPRS should merely have been one of the options if the Government was serious about deliberative democracy. Thirdly, the Government's approach seemed to indicate a desire to achieve consensus, at least rhetorically, however as Lyn Carson explained, Citizens Assemblies are not intended to reach complete consensus – minority views can also emerge and be retained. In addition, Carson suggests that the fact it was announced during an election campaign and was presented as if it was a policy, rather than a process was detrimental, and that if they had wanted to announce a policy it would have been more appropriate to offer "institutionalised public engagement" (Carson 2013). Finally, many external critics took the administrative rationalist view that elected politicians should 'lead' in relation to the complex matter of climate change, guided by the expert opinions of economists and scientists, and that citizens are not up to the task (Carson 2013). However, as explained, this view is inconsistent with understandings of complex adaptive systems.

The concerns documented in this paper's exegesis of participative initiatives across the globe highlight the need not only for best practice deliberative democracy, but also for mechanisms to avoid repeating the mistakes of the past of putting significant effort into ad hoc initiatives that are likely to have minimal impact on transformational change needed to achieve low carbon living. Experience has shown that even where there is genuine intent to implement meaningful public deliberation, it can be difficult for decision makers to give the ongoing, often cross functional support needed to bring about change, especially if they are used to operating within the administrative rationalist model. As a case in point, the Western Australian State Government's newly promulgated Integrated Planning and Report Advisory Standard, which is intended to provide guidance to local governments required to undertake community engagement as part of their planning process, advises local governments that their Strategic Community Plan should 'set out the visions, aspirations and objectives of the community in the district'. It is significant that the Government's approach includes suggestions to take a broad view of who belongs to the local community, and that the 'views and needs of potentially marginalised groups' should be considered (Department of Local Government, n.d., 12). The State Government provides the International Association for Public Participation (IAP2) website as a key resource, a renowned portal for more innovative community engagement and deliberative democracy practitioners. However, the lack of design, implementation, evaluation and accreditation support, and the use of shallow KPIs that do not reflect the quality of engagement processes, means that despite

the Integrated Planning and Report Advisory Standard's potential to support deliberative democracy, it risks becoming simply another tick-box exercise which leads to the implementation of conventional consultation processes, that are incapable of dealing with wicked problems. For instance, it stipulates performance indicators such as the number of electors who participate, the number of documented engagement mechanisms employed, and vaguely defined 'demonstrated effectiveness' - indicators which do not necessarily provide much information about the quality of the engagement process.

Hence, it is strongly recommended that the CRC employ a methodology that can rigorously counter potential claims that future CRC initiatives purporting to be deliberative democracy, fail to comply to the basic principles underlying deliberative democracy; or alternatively, that those which do comply, fail to meet the test of substantive impact on low carbon living, being one off initiatives rather than integral to institutionalized problem solving and democratic decision-making. To maximize the impact on low carbon living, all deliberative democracy initiatives will need to routinely adhere to the principles underlying deliberative democracy; and more than that, they will need to be scaled out to involve the broad population; scaled up so participants are able to deal with complexity; and finally, methods to institutionalize best practice will need to be employed.

The proposal of implementing an International Participatory Sustainability Panel is a critical foundation stone of implementing deliberative democracy for low carbon living. There is currently no workable, let alone ideal model for CRC deliberative democracy initiators to pursue. The CRC low carbon living deliberative democracy work will be setting out on a sparsely populated field of exemplary experience, without a guide to ensure best practice design, implementation and evaluation of process and outcomes. Deliberative democracy proponents need expert advice and support to learn from the successes and the failures documented around the world. The CRC efforts need to avoid being added to the list of ad hoc participatory initiatives across the globe that address particular problems or opportunities at particular points of time, with varying degrees of adherence to the functions and elements of deliberative democracy, and minimal likelihood of long term, transformational impacts. To do this, there needs to be an independent review of the CRC deliberative democracy endeavours that will be seen to be unbiased and rigorous. Importantly, CRC deliberative democracy efforts need to be strongly linked back to the likely and actual impacts on low carbon living (direct and indirect). This will require considerable investment of time and expertise prior to, during and after each deliberative democracy project. The most effective means to provide this assistance is through an independent Panel of experts from around the globe who have experience and expertise in deliberative democracy and participatory sustainability, and whose express task is to institute best practice, including best practice research. Furthermore, the IPSP is a prototype model for institutionalisation of deliberative democracy that can potentially be emulated elsewhere to scale out deliberative democracy in order to achieve low carbon living quickly. The IPSP, and any similar bodies that evolve subsequently beyond the CRC, can provide neutral, unbiased, and sophisticated guidance on participatory processes, in much the same way as the Productivity Commission works in the Australian context, or the International Standards Organisation operates internationally.

PARTICIPATORY SUSTAINABILITY – SCALING OUT AND SCALING UP DELIBERATIVE DEMOCRACY AND INSTITUTIONALISING BEST PRACTICE

The key lessons learnt from the initiatives documented in this scoping study is that to enable a transition to low carbon living, the CRC will need to institute four key research strategies:

1. *Adhere closely to best practices in deliberative democracy, e*mbodying the key elements of *'representativeness (inclusiveness), deliberativeness, and influence'* (see section 6.1). It is crucial to avoid repeating the limitations and failures of previous participatory initiatives.
2. *Scale out deliberative democracy* so communities, regions and nations can be brought into deliberative conversation, and ever-greater percentages of populations can take an active role in determining the nature, direction and speed of the transition. Small scale, localised initiatives will not get the traction needed to bring about a transition to low carbon living.
3. *Scale up deliberative democracy* so the complexity and uncertainty that attends an intentional change of this magnitude can be made intelligible to lay-people. To prevent superficial, circumscribed, or truncated deliberation, a variety of new tools and methods for communication and collective decision-making will need to be tested.[18]
4. *Institutionalise deliberative democracy*, embedding best practices in local, national and global governance practices, with benchmarks and systematic evaluation to gauge progress. One- off initiatives, which often repeat the mistakes of the past, have a low probability of achieving long term, transformational impacts.

Scaling Out Deliberative Democracy

If deliberative democracy is to be effective as a methodology of transformation change to low carbon living, it must reach - and be representative and inclusive of – local, national and global communities. However, to date, deliberative democracy processes have involved a far lower percentage of people than vote in elections, even in the United States where voting is not compulsory and have not been sufficiently widely publicized (Levine et al. 2005). While scaling out deliberative democracy to involve broad publics even locally and regionally has proven to be difficult, a number of approaches are available that have to potential to scale deliberative democracy processes out so that they adequately reflect the informed views of the broader community, *and* involve large percentages of the population in a more active way than is commonly achieved through 'democracy as voting', thereby laying the foundations for broad transformation towards low carbon living. The use of a combination of deliberative techniques is likely to be required to achieve this goal.

These approaches include techniques in which members of the public actively deliberate, such as the use of mini-publics in Citizens' Juries that represent the demographics of the broader community; large scale face-to-face deliberations that involve hundreds of thousands of people over time (such as the Citizens Assemblies in British Columbia); and online deliberation which can be used for events or processes with different numbers of participants, ranging from mini-publics to large numbers of people directly. To maximize their reach, these deliberative democracy initiatives should be complemented by techniques that reach out to and include broader publics. This can be achieved in a number of ways, such as by providing real time access (where it would not compromise the quality of deliberation) to deliberations and their outcomes and

[18] For example, in one European experience, the research team found that 'while graphs and maps are well suited for scientific audiences, additional visual aids may be important for stakeholder audiences' (see Kasemir et al. 2003a)

opportunities to be involved in aspects of the overall deliberative process, in transparent and interesting ways, possibly through the use of social media and /or media such as television for example.

Scaling out via integrating diverse deliberative democracy initiatives over time

The Geraldton 2029 and Beyond Project, has attempted to scale out deliberation. It has done this by providing a comprehensive range of face-to-face, online deliberation and social media opportunities to resolve emergent problems relating to sustainability (See Figure 1). This process commenced with a Deliberative Survey on the critical challenges facing the City Region, and was followed by small-scale deliberations, run by community members, on beginning to envision the type of community and community life they wanted that would be sustainable for future generations. Specific projects to achieve this were developed through deliberation, which were then prioritized and fast tracked through the administration. These face-to-face deliberations were supplemented by an innovative online deliberation platform, CivicEvolution[19]. Interested community members volunteered to deliberate together in small online groups using CivicEvolution to develop ideas into proposals. These proposals were similarly prioritised and fast tracked for implementation. A number of the larger and more complex proposals resulted in inter-departmental and community planning groups. Continued small-scale deliberations, this time called Conversation Cafés[20], again run my community members, ensured the discussions about the sort of place they wanted to live in, continued at a grass roots level. Social media was used to maximize exposure of the issues and encourage public interaction. All these inputs were incorporated into official planning documents including the 'Community Charter', as well as the integrated 'Strategic Community Plan', which drives the future funding of the City-Region (Hartz-Karp 2012, 8).

Online deliberation is an obvious and as yet underexplored vehicle in terms of its ability to help to scale out deliberative democracy for low carbon living. .There are a few important examples of national and international deliberative democracy initiatives on the subject of climate change (Bäckstrand 2006) that have achieved significant scaling out. Many of these involve online processes, platforms and tools. It has a number of benefits, including the possibility of reaching thousands, even millions of people, using innovative software that can help model the complexities of systems under consideration, or support deliberation. There are many online approaches to 'engaging' the public, and while not all align with the ideals of deliberative democracy there are examples which do. For instance, some online platforms, such as CivicEvolution (see below), share deliberative spaces for citizens, where they can participate in addressing an issue and creating a response to it. In addition online tools such as games can be used as part of a deliberative democracy process, exploring scenarios and consequences (Leighninger 2012, 8). Further research is needed in this area.

Scaling out via integrating in-person deliberation with social media and online deliberation

A recent highly publicised National Conference on Mental Health, hosted by President Obama and Vice President Biden, launched a "national conversation", aimed at increasing understanding, awareness and better response to mental health. This publicity was largely due to the immediacy of the problem - recent killings when the perpetrator was understood to have mental health issues. Although the start of this dialogue was with a broad range of stakeholders, the

[19] See the CivicEvolution website for more details: www.civicevolution.org

[20] A Conversation Café is a small, hosted, lively, drop-in conversation among diverse people about their views and feelings about issues of importance. They are held in real cafes or other public places to enhance the sense of inclusivity and creativity that can spontaneously occur when people get together. The aim is to foster inquiry rather than debate about issues that matter, and to speak with the heart and the mind. The structure is simple, aided by a few methods to ensure everyone has a turn to talk and to listen.

Administration has now begun to involve the larger public through social media, multi-media, and the activation of those involved in dialogue and deliberation to hold public deliberations across the nation that will ensure respectful understanding and result in potential ways forward. The integration of a pressing issue, creating invited spaces for public deliberation, using existing and new social media, and energizing non-government organisations and others committed to dialogue and deliberation to co-create a national conversation, is an interesting example of scaling out public deliberation.

Although online deliberation appears to offer the easiest pathway to scale out deliberative democracy, it also has severe constraints. The quality of online deliberative democracy varies significantly according to the 'promise' that the effort will count for something. Recruiting participants and holding their attention is more difficult than in face-to-face processes, where those participating are 'captive' deliberators until a conclusion is reached. Experience has shown that the combination of face-to-face and online opportunities for deliberation can support the recruitment process and help to retain interest. Social media can help in this respect since it reaches online networks of people who may be connected through face-to-face interaction as well (Leighninger 2012, 5). Another barrier to effective online deliberation is the "digital divide" – that is, the gap between those who have access to online arenas and technologies and are competent and confident in using them, and those who are not connected to the digital world. This is clearly a barrier to egalitarian democratic deliberation, and one that must be carefully considered in process design and evaluation (Leighninger 2012).

While online deliberation offers unique convenience and an array of useful online tools that can support synchronous and asynchronous deliberation, it is difficult to replicate the emotional experience of face-to-face deliberation (Leighninger 2012, 4). Many online deliberative democracy processes therefore link with face to face deliberation, either as part of a larger project (such as in Geraldton), or in smaller initiatives which combine face to face and online deliberation synchronously. This combination of online and face-to-face methods is generally endorsed by analysts and practitioners as the most effective (Leighninger 2012; Bittle et al. 2009). In order to inform the design of processes that optimally combine online and face-to-face deliberation deliberative democracy processes, further research through the lens of cognitive and social psychology is needed to study aspects of learning and relating in deliberative democracy processes.

Scaling out via the legitimacy of mini-publics

One method of scaling out public deliberation is to convene demographically representative mini- publics to participate in public deliberations (such as in Citizen's Juries, Citizens Panels, Consensus Conferences and Citizens Assemblies) (Fishkin 2009; Martin 2012; Niemeyer 2011; Gastil 2008). Mini-publics' deliberations can act as a barometer of what the wider public might think if given the same opportunity to deliberate (Fishkin 2009; Dryzek and Niemeyer 2011). Citizens who are not directly involved in mini-publics can then be given opportunities to join in the dialogue at some level or at least learn about it. The media, social media and online deliberation can all play a role in this (Levine et al. 2005), as was the case in the Geraldton 2029 and Beyond project (Hartz-Karp 2012).

The Australian Citizens Parliament (ACP), held from February 6-9 in 2008, is an example of a large- scale process which involved several thousand randomly selected citizens in a range of deliberative processes that culminated in a four day deliberation involving a number of different deliberative and dialogic techniques. Invitations were sent to 8,000 randomly selected people across Australia. The high positive response of 3,000 people resulted in all being invited to participate in an online deliberation to devise and develop the initial issues to be deliberated at the final 4 day form. The final forum involved a mini-public of 150 randomly selected citizens, each representing a different electorate of

Australia. Gender, age and level of education were used as variables in the selection process. This format was selected in order to try to 'reproduce a microcosm of Australia, without the size of the Assembly impeding effective deliberation' (Felicetti et al. 2012, 9) in order to consider the question "How can the Australian political system be strengthened to serve us better?" Evaluation of the ACP indicated that the people who did participate were representative of the broader population, rather than being a self-selecting group of more politically active or community-minded people (Felicetti et al. 2012). In fact, over a third of people who received an invitation to participate in the ACP accepted it Participants in the ACP also reported being able to participate effectively and reach "enlightened understanding" (Felicetti et al 2012, 11). Researchers noted that although participants enthusiastically indicated support for the deliberative process, since it was a one off event rather than an institutionalised process, it is difficult to determine the extent to which the novelty of the opportunity to participate in the ACP, and similar deliberative experiments, influences participants' self-reported views of the quality and value of the process. However, the researchers suggest that this 'excitement' and the increased civic consciousness the initiative generates could well remain, as it does with institutionalised civil and criminal juries (Felicetti et al 2012, 18).

The Oregon's Citizens Initiative Review (CIR) is another example of scaling up deliberative democracy by incorporating the use of randomly sampled mini-publics to develop the wording of citizens' initiative referenda, as well as the supporting pro and con material disseminated to the public prior to the referendum. The aim of this initiative is to encourage better public deliberation on the issue at hand, and hence decision-making at the referendum. Initiatives such as this demonstrate how low carbon living deliberative processes might be scaled out to reach across national or perhaps even international networks. In the CIR initiative (developed by the creator of the Citizens' Jury process, Ned Crosby) a panel of 24 randomly selected, demographically representative voters deliberate on a ballot measure for a week in a Citizens' Jury process. The aim is to better inform public discussion of state policy by allowing non-partisan citizens to evaluate it and report to the electorate. Participants in the Citizens' Initiative Review hear from campaigners, learn about the issues and evaluate the pros and cons of proposed policies (Gastil and Knobloch 2010). While not every citizen in Oregon participates directly in CIR deliberations, all registered voters in Oregon have the opportunity to learn about the CIR deliberative process and all are sent the findings, which can help to inform their decisions in subsequent elections and referenda. An independent review found that the CIR process supported high quality deliberation, and helped members of the public who read the report to better understand the issues. As it happened, they became less inclined to support the proposals being voted on. However, in terms of scaling out deliberation, the process is not yet optimal. For instance, research showed that most citizens did not hear about the CIR process, and did not read the Voters' Pamphlet explaining its findings (Gastil and Knobloch 2010, 1). This highlights the need to test and evaluate new ways of connecting even institutionalised deliberative democracy processes such as the CIR, if their outcomes are to significantly effect the broader community (see Fournier et al 2011; Pateman 2012).

The renowned Canadian Citizens' Assemblies are also instances of scaling out deliberative democracy by integrating the mini-public outcomes with a referendum. The research on these initiatives supports the suggestion that citizens trust the outcomes of mini-public deliberations in part because they involve people like themselves (Niemeyer 2011, 126). This was clearly demonstrated in the British Columbia Citizens Assembly on electoral reform in 2005/6 where decision-making power was devolved to the people through Citizen's Assemblies. The process enabled citizens to review their electoral systems and suggest changes as they saw fit. Their ideas were subsequently taken to the broader community to be voted on. The recommendations were very narrowly defeated in the first referendum, though more clearly in a second,

arguably because the broader community did not adequately understand the Assembly's conclusions, or the governance
processes involved due to a lack of public education, and possibly a failure to explain the reasons behind the Assembly's views (Ontario Citizen's Assembly Secretariat 2007; Niemeyer 2011). Nonetheless, it is significant that many of those who did vote for the proposal put forward by the Citizens' Assembly did so because they trusted Assembly members' perspectives (Niemeyer 2011, 126). This case study also illustrates that the effectiveness of supporting actions undertaken by government, including the appropriate linking of the mini-public with the broader community, have the capacity to significantly influence the outcomes.

The value of mini-publics depends on how they are applied. For instance, if there is any self-selection or bias when convening a mini-public, it will inhibit effective deliberation and potentially the outcomes as well as public legitimacy. In addition, Niemeyer maintains that the outcomes of mini-publics' deliberations should not be offered to the general public in the form of 'aggregated preferences', but rather should demonstrate a 'skeptical position toward potentially symbolic claims, taking into account the range of relevant issues as part of a metaconsensus' (2011, 126). If the broader community is simply asked to trust a mini-public's 'vote' without understanding the nuances of the issue, the mini- public could be seen as simply another form of distortion of the public will and therefore erode trust. It might be better to communicate the *reasons* behind findings in simple terms, rather than just listing outcomes. Furthermore mini-publics cannot necessarily be expected to deliver definitive answers to the problems put to them, unless they are very simple issues, and the deliberators have sufficient time, information, and opportunity to deliberate (Niemeyer 2011).

Scaling out via Institutionalisation

The degree to which deliberative democracy for low carbon living can be scaled out will depend to a large extent on the institutionalisation of high quality deliberative democracy as a common practice that is understood, appreciated and accepted by the broader community. This in turn will be influenced by the capacity of those government and non-government organisations with some responsibility for actualizing change towards low carbon living to undertake high quality deliberative democracy. However, we recognize that the skills and experience necessary to implement best practice deliberative democracy are lacking in many of these organisations and the communities they are embedded in, and that developing them will be onerous and time consuming task.

For these reasons we propose the International Participatory Sustainability Panel (IPSP) as a prototype mechanism to support organisations wishing to undertake deliberative democracy in order to co-create a low carbon future, within the CRC and beyond. The expert members of the IPSP can provide neutral, unbiased, and sophisticated guidance on participatory processes to CRC participants (and others), in much the same way as the Productivity Commission works in the Australian context, or the International Standards Organisation (ISO) operates internationally. Unlike the ISO however, the IPSP will focus on capacity building rather than compliance. Rather than simply "consulting", it will collaborate with CRC partners who wish to implement deliberative democracy for low carbon living.

The IPSP can speed the process of co-creating a low carbon future through the necessary participatory processes by circumventing the need for individual organisations to undertake the time consuming and expensive process of building sufficient internal capacity to implement deliberative democracy. While capacity building will still be necessary and desirable in the long term, the IPSP can help to catalyse the rapid system transformation that is required to achieve low carbon living, building capacity in the process.

This model for "bottom up" institutionalisation of deliberative democracy for low carbon living arguably has precedents. For example, there are parallels between this proposed bottom up approach to broad institutionalisation of deliberative democracy throughout

organisations and sociopolitical systems, and the current polycentric growth of carbon emissions trading schemes around the world, supported by sound, peer reviewed economic research (see for example Stern, 2007). While there are convincing economic arguments that a global emissions trading scheme (ETS) would be the most efficient and effective approach, insoluble political barriers have meant that in practice it has been impossible to establish a global ETS from the top down. Nonetheless, trading schemes have proliferated around the world at regional, state and national levels, and are now providing a basis from which a global ETS could emerge, as well as a broadening foundation of knowledge and experience that is informing the development of new schemes and the refinement of existing ones. The prototype IPSP can be trialed as a mechanism to support a similar process of proliferation of participatory sustainability within the CRC, and beyond. It could even be adapted to create an institution that would speed the process of development of a global ETS, through collaborative problem solving with governments. This model of systemic change is in keeping with the phenomenon noted in systems theory that system elements interact predominantly with their neighbours (Finnigan 2005). This suggests that top down policy solutions are unlikely to adequately transform the complex adaptive systems they are imposed upon.

The IPSP can also provide demonstrations, research, tools, and support to actively promote the internal learning processes of a myriad of organisations, as well as keeping up to date with best practice developments around the world that will need to be communicated to CRC participants. Furthermore, the IPSP will be invaluable in terms of enabling the CRC to evaluate research proposals that incorporate deliberative democracy.

Scaliing Up Deliberative Democracy To Address Complexity

The complexity and uncertainty of climate change and a transformation to low carbon living require deliberative democracy initiatives to be capable of scaling up to deal with the interdependencies and unanticipated consequences involved in understanding and responding to such problems. Sustainability science has experimented in this area, in particular, pioneering innovative uses of computer modeling to build capacity among stakeholders and lay-people. Sustainability science has recognised the need to 'understand the fundamental character of interactions between nature and society' (Jäger 2009, 144). Research topics in this field, relevant to deliberative democracy, include the need to develop systems of governance that can 'guide interactions between nature and society toward more sustainable trajectories' and better integrate 'research, planning, operational monitoring, assessment and decision (making)' into 'systems for adaptive management and societal learning' (Jäger 2009, 145). The discourse of sustainability science highlights the pitfalls of valuing expert knowledge over that of lay-citizens. As Jäger explains:

> ***A large gap persists between what the science and technology community thinks it has to offer, and what society has demanded and supported. It is this gap that has led to calls for… a new contract, under which the science and technology community would devote an increasing fraction of its overall efforts to research agendas reflecting socially determined goals of sustainable development. In return, society would undertake to invest adequately to enable that contribution from science and technology, from which it would benefit through the improvement of social, economic and environmental conditions (2009, 145).***

Deliberative democracy can play an integral part in such a new contract. For instance dialogue between scientists, citizens and stakeholders can make scientific information more accessible to the broad community and simultaneously create a richer, less deterministic model of governance that is more capable of delivering sustainability outcomes such as low carbon

living (see Kasemir et al 2003a; Bulkeley and Mol 2003). Dialogue between scientists and citizens is hampered because scientific data is often complex and hard for lay-people to understand, or not presented in a relevant format (Sheppard et al. 2011, 401). Innovative tools and diverse modes of expression and communication therefore need to be trialed in deliberative democracy processes.

One example of this took place in Europe, where a series of citizens 'focus groups' were undertaken, focusing on climate and energy issues and their relation to urban lifestyles (Kasemir et al. 2003b, 3). There were 6-8 citizens in each focus group and a total of around 600 were involved overall in seven cities: Athens, Barcelona, Frankfurt, Manchester, Stockholm, Venice and Zurich. Several groups were run in each area in an attempt to address issues of bias. These particular focus groups were selected to be heterogeneous (as opposed to demographically representative) and as such are not presented as 'deliberative democracy' per se, although the facilitated 'focus groups' were considered to be deliberative (Kasemir et al. 2003).

The focus groups used an Integrated Assessment (IA) approach, which integrates 'pictures of complex decision situations rather than highly detailed but not integrated pieces of knowledge' (Kasemir et al. 2003b, 8). The designers wrestled with the problem of how best to balance expert and lay-perspectives, deciding that the most suitable approach in their context was to use different modes of expression and communication, and to ensure that citizens had the opportunity to share their knowledge and opinions before hearing from experts. The workshops also trialed open ended approaches, in which the participants and moderation team steered the process collaboratively. This increased skepticism initially, but can ultimately help to establish mutual trust and understanding over time (Gough et al. 2003). Although the process differed slightly in each location, in general it was split into five 2.5 hour sessions on different days. During the first phase was that participants created collages of alternate futures which they discussed with the others in the group, before hearing from experts supported by computer models in a second, moderated phase which lasted for three sessions. Scientific experts and/or knowledge using computer modeled scenarios supported citizens' deliberations, informing dialogue and helping to bring suggestions to life as the deliberations proceeded. During the third and final phase of the workshops, participants deliberated together, arriving at a set of informed conclusions, written into final reports.

The computer modeling proved to be an essential element of the workshops. However, while participants seemed to deal with uncertainty in the collage exercise in a sophisticated way, many reacted negatively to the uncertainty depicted in the integrated computer models. The research was not conclusive, however this discrepancy could be due in part to a misconception that many members of the public have, that science delivers absolute fact. Nonetheless, the research team found that 'while graphs and maps are well suited for scientific audiences, additional visual aids may be important for stakeholder audiences', and may also be better suited to conversations dealing with uncertainties (Kasemir et al. 2003c, 103).

It will be important to investigate the role of computer modeling and visual media in deliberative democracy for low carbon living, as a way of increasing the accessibility and relevance of scientific knowledge. It has been noted that there are currently few approaches that incorporate integrated assessment for climate change mitigation or adaptation, urban planning and applications of visual media (Shepard et al. 2011). However, face-to-face interactions remain important as well, including where participants are given the chance to interact directly with experts. Indeed, one piece of research noted the participants' preference for this latter approach once they had experienced it (Dahinden al. 2003, 119).

Australia is currently pioneering some of the most exciting work in computer modeling that will be vital to lay-people and stakeholders' understanding and ability to respond to complexity. Greening the Greyfields is a project in the CRC for Spatial Information (CRCSI)

within its Sustainable Urban Development program. The project involves the development of twenty first century planning tools to support the sustainable urban regeneration of Australian middle suburbs. One significant output of this research project has been the development of a demonstrator spatial support system called ENVISION, which utilises a wide range of planning-related datasets to investigate the suitability of areas for precinct-scale redevelopment. The toolset is now being developed as a web-based platform by the Australian Urban Research Infrastructure Network (AURIN) to support a range of stakeholder engagement interactions at the local and state government level.

In the two years of the project's operations, the research has been conducted by Curtin University in Western Australia and Swinburne University in Victoria; however, the project has recently expanded to include the University of Canterbury in Christchurch, New Zealand. The project team will be creating visualisation and assessment tools to extend the workflow of the ENVISION system to allow stakeholders and lay-people to test and compare various redevelopment scenario options. This next state of Greening the Greyfields will be developing these tools in partnership with Melbourne University, that is responsible for development of the MUtopia desktop precinct design and assessment platform, as well as the HIT Lab at University of Canterbury who have been developing augmented reality applications or urban planning. This project will, in the near future, be trialing these tools with stakeholders on real redevelopment projects in Stirling (WA), Canning (WA), Manningham (VIC) and Christchurch (NZ).

Scaling up deliberative democracy also implies the need for more sophisticated evaluation of what is likely to constitute low carbon living. Evaluation of deliberative democracy initiatives needs to be broad-ranging, considering the whole system. Low carbon living involves a complex interweaving of social, economic, cultural and environmental interrelationships. The literature on participatory processes, including deliberative democracy to address sustainability issues has documented the wide-ranging and significant secondary benefits of well-run public deliberation. These include their capacity to provide learning opportunities and build social capital; enable new and broader perspectives to develop; insert democratic principles more emphatically at the centre of decision making; provide legitimacy to political processes; take natural resources and environmental issues into account; achieve equity and realise their final objective better than conventional processes (DeMarchi and Ravetz, 2001; Meadowcroft 2004; Gastil 2008; Garmendia and Stagl 2010).

Additionally, several analysts point to evidence that deliberative processes act as important educative and socialising vehicles, building social capacity and social learning that enables communities to understand and respond to climate change (De Marchi and Ravetz 2001; Garmendia and Stagl 2010). Deliberative processes potentially enhance social learning and allow communities to deal with wicked problems by providing a way to move beyond the limitations of bounded rationality– that is people's limited ability to process information individually (Simon 1976) – to focus on procedural rationality. As outlined earlier, bounded rationality cannot deal with the full scope of wicked problems of the scale of climate change, therefore it is proposed that deliberative processes are used to create a 'shared understanding and joint action', with a particular emphasis on the quality of the decision making process (procedural rationality) (Garmendia and Stagl 2010, 1712). Indeed, a number of political scientists support the view that policy making can be a 'process of social learning' that drives shifts in ideas and beliefs systems rather than purely as an outcome of power struggles (see for example Jenkins-Smith 1988, cited in Garmendia and Stagl 2010, 1713).

However, while there is substantial anecdotal evidence to support the theory that deliberative democracy processes enhance social learning, the links between deliberative democracy, individual behaviour change and cultural or organisational change have not yet been thoroughly tested and understood. Further

research is needed to better understand the extent to which deliberative democracy/ participatory processes enhance social learning, and the influence of process design on learning outcomes (Garmendia and Stagl 2010, 1718). We do not yet have best practice, accepted methodologies to compare different models of public deliberation or to evaluate the direct and indirect impacts of deliberative democracy initiatives. Further research is needed to develop and test appropriate evaluation methods for deliberative democracy processes and outcomes. For instance, it would be worthwhile to investigate the extent to which deliberative democracy processes build social capital and improve civic resilience to respond to crises or ongoing problems. Importantly, each of the potential secondary benefits of deliberative democracy initiatives will need to be carefully assessed in terms of their potential impact on achieving low carbon living.

Institutionalising Deliberative Democracy/Participatory Sustainability

A number of the above initiatives have been institutionalised as a preferable mode of problem resolution and decision-making. The best known and most wide-spread of these are Participatory Budgeting initiatives that are instituted cyclically across the globe. The Citizens Initiative Review is an example of a State-wide initiative that comes into effect each time a citizens' initiative referendum is put to the people. Moreover, this process is now being considered by other states in the USA. Other initiatives have been institutionalized only for as long as their champion or political party has been in a position of power, for example, the deliberative democracy initiatives instituted in planning and infrastructure in Western Australia under a particular Minister over a five year period. Other initiatives, mostly at a local government level, have persisted over many years, through changes in administrative leadership and elected decision-makers. These include the Kerala, India, participative planning and implementation processes; the Hampton, USA local government 20 year collaborative partnership with residents and other stakeholders to implement a more sustainable future; and the Portsmouth, New Hampshire USA deliberative democracy processes on urban planning for low carbon living, 'Portsmouth Listens'. It also includes the Geraldton '2029 and Beyond' project which, over the last 3+ years has instituted a comprehensive range of deliberative democracy initiatives, each one building on prior initiatives, with the aim of fostering a deliberative community and collaborative governance to improve sustainability.

However interesting and hopeful each of these initiatives are for the future of deliberative democracy and low carbon living, they are, with the exception of participatory budgeting, separate and difficult to compare case studies. This scoping paper proposes a methodology, the implementation of an International Panel on Participatory Sustainability (IPSP) that will institutionalize deliberative democracy in a way that will set the stage not only for national but also international learning on how to maximize deliberative democracy for low carbon living.

In the following section, a number of recommendations are made in response to the gaps and opportunities identified in this research.

RECOMMENDATIONS

Draft Framework Of Minimum Guidelines For Designing, Implementing And Evaluating Deliberative Democracy Initiatives Within The CRC

As outlined in the literature review, governance initiatives described as empowered participatory public deliberation, or deliberative democracy, cover such a broad spectrum of intent, process and outcome that it is difficult to evaluate and compare them in terms of their degree of representativeness and inclusiveness, quality of deliberation, and the intended and actual influence and impacts. It is imperative that "deliberative public engagement" conveys a sufficiently specific meaning that we can distinguish it from generic public involvement processes, such as formal hearings or more traditional forms of community consultation/engagement. As Niemeyer argues:

> ***The "coming of age" of deliberative democracy demands the interplay of theoretical insight and empirical investigation. Such interplay requires that we first establish the conceptual criteria for what should be considered to be authentic deliberation so that we can recognize when and how it has occurred (2011, 104).***

Of necessity, deliberative democracy action research relating to low carbon living will encompass a variety of approaches. Research shows that deliberative, participatory processes, and the tools used in them, are most effective when they are chosen or developed to suit the context in which they are applied, taking into consideration their purpose and function and the way they conform strategically with long term goals (Forsyth, 2005; Few et al. 2007; Meadowcroft 2004; Mans). The need to use a diversity of deliberative techniques and processes was noted in Section 3, as was the need to develop deliberative democracy projects that combine processes strategically, and over a period of time that is appropriate for the issues under consideration.

Therefore, in order to undertake action research into the role of deliberative democracy in achieving low carbon living within the CRC, a framework consisting of minimum and ideal guidelines for deliberative democracy processes is proposed. These guidelines will help determine the extent to which processes that are proposed and implemented within the CRC conform with the ideals of deliberative democracy, or are more closely aligned with less innovative business-as-usual community engagement/consultation processes. Using these guidelines, it will be possible to create a continuum based on the extent to which an "ideal" deliberative democratic state has been met. These guidelines will set the scene for the design, operation, evaluation and potentially the accreditation of deliberative democracy initiatives within the CRC and in the longer term, also beyond. It will also enable researchers to examine the link between deliberative democracy and low carbon living with more clarity and rigour.

The need for a clearer definition of deliberative democracy has also been noted by social scientists interested in the degree to which it is possible to empirically test the normative claims of deliberative democracy theory, or at least aspects of it (Mutz 2008). Of course, empirical research on its own is unlikely to fully reveal the character and effect of deliberative democracy since 'normative theory is obviously not testable in the usual sense' (Mutz 2008, 523). Qualitative research, involving a 'naturalistic approach to the world…(in which) researchers study things in their natural setting, attempting to make sense of, or to interpret, phenomena in terms of the meanings people bring to them' (Denzin and Lincoln 2003, 4-5) is an appropriate lens with which to examine deliberative democracy. However, empirical research can also make important contributions, and is likely to be of interest to a number of CRC researchers. For instance, it could be possible to evaluate those outcomes that are 'consensually valued by theorists and empiricists alike', including:

More public-spirited attitudes; more informed citizens; greater understanding of the sources of, or rationales behind public disagreements; a stronger sense of political efficacy; willingness to compromise; greater interest in political participation; and for some theorists, a binding consensus decision (and) the perceived legitimacy of the decision outcome (Mutz 2008, 523).

As explained in Section 6, the core elements of deliberative democracy can be summarized as deliberativeness, representativeness/inclusiveness, and influence. The draft framework of guidelines set out in Table 4 includes both minimal and ideal interpretations of each of these elements. This framework can be used within the CRC to provide guidance in developing, implementing and evaluating deliberative democracy processes undertaken in any CRC project. Deliberative democracy projects in the CRC may fall anywhere within the spectrum of the minimum and ideal guidelines in the framework

Table 4: Draft Framework of Guidelines for Deliberative Democracy

Draft Framework of Guidelines for Deliberative Democracy	
1. Deliberativeness	a. Minimally: sufficient time, opportunity and encouragement should be provided to elicit and secure participant willingness to work together in an egalitarian, respectful environment, setting aside preconceived ideas, challenging assumptions, listening to new views and seeking common ground.
	b. Ideally: a respectful, egalitarian process should be provided that: i. Provides opportunities (notably through facilitation) to improve the quality of interactivity, balancing listening, enquiry and advocacy, as well as balancing team dynamics, tasks and individual needs; ii. Generates understanding, provokes thought and seeks cognitive congruence iii. Creates and/or explores options and strives to make tough decisions, often involving trade-offs; iv. Explores complexity, multiple causation, potential unintended consequences and opportunities to 'nudge' the system towards sustainability; v. Deeply explores differences and co-creatively seeks common ground.
2. Representativeness and Inclusiveness	a. Minimally: participation should include ordinary citizens/residents who reflect the demographics of the population. Particular care must be taken to ensure that those who are often marginalised, such as low socio-economic groups, young people, people from different cultural backgrounds, including Indigenous people, and the time poor can participate.
	b. Ideally: there should be random sampling of the demographics of the broader population.
	c. Where relevant/most appropriate: alternative elicitation methods include: i. Random sampling not only of the demographics, but the diverse attitudes/positions on the issues at hand; ii. Large scale elicitation, involving large numbers of the population (scaling out); iii. Other methods that intentionally seek to broaden participation, such as one third random sample, one third respondents to advertisements and one third a broad array of stakeholders.
3. Influence	a. Minimally: prior to implementation of deliberative democracy processes, government decision makers should: i. make public their intent to share the problem solving and decision making with the general public more equitably; ii. make a clear statement of the extent of the influence the outcomes of the public deliberation will have. This should include a commitment to explain to participants, andthe broader community, what actions were taken in response to recommendations or ideas generated in deliberative processes, and why.
	b. Ideally: partial or complete decision making authority over a particular issue should be delegated to deliberative democracy processes.

CRC International Participatory Sustainability Panel

In order to assist CRC participants to apply the framework of guidelines for deliberative democracy processes in a consistent and unbiased manner, it is suggested that neutral third-party expert assistance is provided. Therefore a International Participatory Sustainability Panel (IPSP) is proposed as a mini-structure within the CRC. The IPSP would help to design, operationalize, evaluate, and potentially accredit such initiatives across the CRC. Members of the Panel would also help to update the deliberative democracy design and evaluation elements of the online communication portal on the CRC website; and jointly write publications with CRC members involved in deliberative democracy initiatives as required. The International Participatory Sustainability Panel is a prototype model for institutionalisation of deliberative democracy that can potentially be emulated elsewhere to scale deliberative democracy up and out in order to achieve low carbon living quickly. The IPSP can provide neutral, unbiased, and sophisticated guidance on participatory processes, in much the same way as the Productivity Commission works in the Australian context, or the International Standards Organisation operates internationally.

The IPSP would consist of members internal to the CRC as well as a number of independent national or international members who are recognized experts in the field of deliberative democracy. This would ensure that the design of deliberative democracy processes within the CRC benefits from the combined experience of experts, and that evaluation of deliberative democracy processes within the CRC is as impartial as possible. The consistency provided by the IPSP's guidance would enable meaningful comparison across deliberative democracy projects undertaken in the CRC, thereby increasing the value and scope of comparative studies into the role of deliberative democracy in achieving low carbon living. The panel would also be the subject of research itself, insofar as it may be a mechanism by which to scale out and scale up deliberative democracy for low carbon living within Australia, and internationally.

It is proposed that the IPSP be trialed initially in 2013/14 in order to ensure that the deliberative democracy aspects of the CRC can begin as soon as possible in a cohesive, research-productive manner. CRC researchers wishing to apply deliberative democracy within their project would submit their proposal to the International Participatory Sustainability Panel (IPSP). The IPSP would work with project proponents to ensure that deliberative democracy processes undertaken in the CRC fit along the spectrum between the minimum or ideal guidelines outlined above. At least two experts would work on each of the four independent but networked branches of the IPSP:

a) Design
b) Implementation
c) Evaluation
d) Accreditation.

Each of these branches of the IPSP would be overseen by an Australian member of the CRC in collaboration with a national international expert not otherwise connected to the CRC. The IPSP will need to be supported and funded (see section 8.3.6 on funding).

Based on the experience of the deliberative democracy action research in 2013/14 (four-six deliberative democracy initiatives), the IPSP will produce and submit a more detailed set of guidelines and long term proposal that covers the duration of the CRC and beyond. A brief description of the likely role of each of the branches of the IPSP follows.

Design

In an iterative process, the design team will work with the organizing group and preferably the deliberation steering group (key stakeholders, protagonists and antagonists) to fill out the project plan including the most appropriate deliberative democracy process for the submitted proposal. (See Appendix 1, the Deliberative Democracy Process Planning Worksheet).

It will be important that this is a collaborative process, however the IPSP's Design Team will have the overseeing role of ensuring the process is egalitarian, comprehensive, unbiased, inclusive, deliberative and influential.

Implementation

The IPSP's Implementation Team will provide expert facilitation and support as required, including:

- taking the role of Lead Facilitator in key public deliberations;
- training others who wish to facilitate small groups or small scale deliberations involved the deliberative democracy project;
- working with the IPSP's Design Team to ensure the feasibility of the design process;
- organising and training in other support roles such as theme team member, scribe;
- troubleshooting and if need be, facilitating any dispute resolution.

Evaluation

The following description of evaluations is outlined in greater detail since it lies at the crux of this research proposal. The description that follows is adapted from the work of Professor John Gastil who is likely to be one of the international experts on the evaluation arm of the CRC.

Currently, there is no systematic, accepted way of evaluating and comparing public deliberation processes. This is a key barrier to effective implementation of and research into deliberative democracy for low carbon living, and for deliberative democracy in general. To upgrade our knowledge and practice, we must begin to evaluate the design, process, and outcomes of our civic engagement activities.

The best way to judge the effectiveness of a deliberative process is to assess the extent to which it achieves the goals such a process strives to achieve. However, deliberative programs share common ideals of a concern for the following four evaluative criteria, which can therefore be used to assess the overall quality of public deliberation:

Design integrity
Sound deliberation and judgments
Influential conclusions and/or actions
Secondary benefits for public life that public deliberation processes hope to realize.

These criteria are more fully described below. Processes within the CRC that do not meet these criteria adequately should not be identified as deliberative democracy.

Criterion 1: Design integrity

A high-quality deliberative engagement process gains its power partly from the integrity of its development, design, and implementation. This criterion can be broken down into three more specific sub-components:

a. Unbiased framing: The process by which issues are framed for deliberation should be transparent, subject to open criticism by all interested parties. The resulting issue frame should be a fair representation of conflicting views and arguments. Even when the organizers imagine that they have an undefined, "open" issue frame (e.g. "political reform," without specifying any options), it's still the case that they selected that issue and generated language to describe it.

b. Process quality: The deliberative procedures themselves should be developed in consultation with (or at least subjected to comment from) interested parties, particularly those with different points of view on the issue-at-hand, and the resulting process should be consistent with the best practices for deliberation (e.g., rigorous analytic process for studying the problem and generating and evaluating solutions, along with respectful and egalitarian relations among participants).

c. Representativeness: The selection of citizen participants should give broad opportunity to all

potentially interested parties (excluding only those with public offices or unusually high personal/ financial stakes in an issue). The resulting body of citizen participants (hereafter called simply a "citizen panel") should prove representative of the general population and, in particular, include representatives from any permanent minorities (i.e., groups for whom public policy consistently goes against their interests) and even smaller-numbered culturally relevant identity groups (i.e. sub-publics or communities who seek visible representation in any public deliberative body).

These design features can be assessed through direct inspection of relevant event and design records, along with interviews with organizers and interested third-parties.

Criterion 2: Sound Deliberation and Judgement

Beyond their process features, deliberative civic engagement programs should show signs of high-quality judgment. Thus, they should produce the following outcomes:

a. Manifest disagreement. Public deliberation should include periods of debate among the citizens (hereafter called "panelists," as in the instance of a "citizen panel") on both questions of fact and more fundamental moral issues. The absence of such clash would suggest excessive consensus-seeking among citizens who surely have genuine differences in experiences and values.

b. Supermajorities. Deliberative groups should be able to work through their differences and often reach broad agreement when assessing initiatives. Narrow majority views should sometimes grow into large majorities, and minority viewpoints should sometimes prevail.

c. Informed and coherent judgments. Citizens' judgments should develop in light of the information presented, the views put forward, and the careful, honest discussions among participants. As a result, participants should demonstrate more informed and coherent views on initiative-related issues after participating in panel discussions. Participants should be able to give reasons for their views, and they should be able to explain the arguments underlying alternative points of view.

These outcomes can be assessed through direct observation of the deliberative process, complemented by systematic surveys and interviews with participants, event moderators, and other interested observers.

Criterion 3: Influential Conclusions/Actions

Once implemented, successful deliberative processes should show clear evidence of their influence on the policymaking process or on the actions of the wider public. Depending on whether they emphasize policy recommendations and/or direct action, effective deliberative citizen engagement should produce the following results:

a. Influential recommendations. Deliberative engagement processes should prove to be an effective mechanism for making a policy proposal succeed or fail in light of the citizens' recommendations. Specifically, when a clear majority of panelists favor a particular policy initiative, its chances of prevailing should increase, and the reverse should be true when citizens oppose a policy.

b. Effective, coordinated action. Deliberative bodies that attempt to generate change through direct action should be able to coordinate their post-deliberative efforts to thereby change the relevant voluntary actions taken by the larger public, which may indirectly spark policy changes (depending on whether the citizens' action plan involves public policy change).

Criterion 4: Secondary Benefits

If deliberative processes are implemented and the evidence shows that they are reaching sound and influential judgments and/or transforming public action, it

would be enough to warrant their widespread adoption. Nonetheless, it is important to examine other potential outcomes because many deliberative civic engagement programs stress the impact they have on the participants themselves, the wider public, or macro-level political processes.

The range of secondary benefits in relation to governance that can be assessed include:

a. transforming public attitudes and habits,

b. changing public officials' opinions, behavior, and decision-making processes; and

c. altering strategic political choices.

Integrating Evaluative Methods

In summary, it is important to consider how one integrates these various evaluation metrics. That is, how does one move from separate assessments of each criterion (or sub-component) to an overall evaluation of the deliberative citizen engagement process as a whole? This depends, again, on one's conception of the project, but the following approach will apply to many such programs.

Each of the three elements of Design Integrity count as pass-fail elements, and a **sub-par evaluation on any one of these would yield a negative summary evaluation of the entire process**. That is, if any aspect of the design failed to meet basic standards for integrity, the other outcomes of the process are all suspect.

The three elements of Sound Deliberation and Judgment should be viewed as parts of a coherent whole, such that one arrives at a single assessment of Deliberation/Judgment in light of each element. The third of these might be most important (i.e., the coherence and soundness of the group's judgments), but this should be weighed by how rich the disagreement was and how effectively the group could move toward a supermajority. Outstanding performance on two of these criteria might obviate lower-performance on another, but outright failure on either the first (disagreement) or third (quality of judgment) should yield an overall assessment of program failure. [In turn, this would mean a negative evaluation of the process as a whole.]

The Influential Conclusions/Actions criteria are different in that some programs will emphasize only one—or neither—of these criteria. All deliberative citizen engagement programs, however, should orient toward one or the other to at least a degree, so that deliberation is not seen as "merely" discussion, disconnected from action. Even then, however, poor performance on a program's relevant influence criterion does not impugn the entire exercise; rather, it suggests the need for improving the component of the program that leverages influence.

Finally, Assessment of Secondary Benefits stands apart from all these other criteria in that program success may not require evidence of these impacts. If a program is well-designed, deliberative, and influential, these become "bonus" effects, not strictly necessary for justifying the citizen engagement program, per se. In the long-run, however, these secondary benefits could be of tremendous value for a public and its political culture. A more engaged public, legitimate institutions, and responsible, deliberative politics could dramatically increase the capacity for shared governance and public action and, ultimately, yield much better public policy. Such potential impacts should be assessed, for evidence of these changes could increase the estimated value of deliberative citizen engagement, thereby warranting the time and resource expense it requires.

Accrediation

In the arena of sustainability, there are growing numbers of accreditation, certification and guideline systems, such as ISO 2600 (Social Responsibility), Sustainable Tourism, Eco Tourism Certification, ISO14001 (Environmental Management Systems), Green Globe Benchmarking and Certification. Many of them, such as the ISO 2600, provide guidelines rather than certification. Most accreditation systems are technical, having particular measurable indicators, and many are voluntary.

Many other sustainability reporting frameworks and guidelines are voluntary mechanisms that relate to meeting certain standards. These include:

- the Global Reporting Initiative (GRI);
- the United Nations Global Compact:
- the International Council on Mining and Minerals (ICMM) Sustainable Development Framework;
- the Australian Minerals Industry Enduring Value framework for sustainable development
- International Finance Corporation (IFC) Performance standards; and
- the Equator Principles.

Most of these mechanisms focus on the extent to which an organisation addresses environmental impacts and contributes more broadly towards sustainable development. However, a significant problem is that there is little or no verification of the claims organisations make in their sustainability reports (Hilson 2002; Vanclay 2002; Petkova-Timmer; Lockie et al. 2009). Furthermore, reporting frameworks sometimes rely on mono-dimensional key performance indicators (KPIs) such as the number of jobs provided for the local community. This can be problematic. For example, some mining companies have claimed increases in local employment as a positive contribution to the community in regions where the unemployment rate is already low (e.g. 2%), while failing to account for any negative impacts of the practice of employing fly-in fly-out workers (FIFOs) on the local community.

Furthermore, public participation is very limited (Colantonio 2011; Glasson 2009; Colantonio 2007; Lockie et al. 2008; Esteves and Vanclay 2009). For example, non-deliberative information gathering and information providing techniques are often described as public participation, despite recognition that a lack of public participation often creates problems and conflicts between and among communities. Similarly, the lack of public participation in decision making process creates problems for all stakeholders, including communities, companies and government. Communities often miss out on opportunities arising from development simply because they are not aware of the possibilities, or because they lack the capacity to capitalise on them. Indeed current practices often result in companies facing local conflicts, project delays and blockage, and significant financial losses. Similarly, many governments struggle with the implementation of their planning agendas.

Obviously setting best practice standards and the acknowledgement to organisations that have achieved those standards is very desirable. The question for the accreditation arm of the International Participatory Sustainability Panel is how to provide a form of certification that does not revert to simplistic, mono-dimensional indicators, or 'tick the box' reporting, mostly done retrospectively and often not driven by the original intent at all.

It is envisaged that the accreditation branch of the IPSP will work in tandem with the evaluation branch to develop protocols that involve the institutionalisation of best practice, rather than the singular focus on compliance reporting of minimum basic standards. Deliberation itself may play a key role in accreditation processes for deliberative democracy. This CRC action research could lead to an accreditation scheme that could be used internationally to foster low carbon living (and other outcomes) through deliberative democracy processes.

Case Study: Participatory Budgeting in Greater Geraldton

As described earlier, the City of Greater Geraldton has embraced deliberative democracy as part of its planning processes in the ongoing Geraldton 2029 and Beyond project. The success and confidence gained through Geraldton 2029 and Beyond, as described earlier, has led the City of Greater Geraldton to embark upon an innovative and integrated approach to Participatory Budgeting. The full initiative is currently before the Council, and if it is supported in total, it will

be the first in the world to specifically include low carbon living as an integral component.

Participatory Budgeting (PB), known to many through the Porto Alegré initiative in Brazil, has now spread to all corners of the globe. From rural Australia, to New York, to Albania, to the Congo, to India, governments, international funding agencies, and civil society organizations are experimenting with participatory budgeting programs to overcome poorly entrenched policy and social problems, particularly the inequitable distribution of resources and the disaffection of the public with their governments. Participatory budgeting involves the reorganization of how public officials and citizens negotiate the allocation of public resources to solve these problems.

The impetus behind these programs is varied—some governments are required to implement them by constitutional fiat, other governments are induced by international funding agencies, while other governments are led by reformers seeking to generate change. Some governments are seeking to spark better forms of deliberation, others to mobilize the population, and others to bring transparency and accountability to local governments. These programs fit into a growing world-wide effort that seeks to use civic participation, deliberation and oversight to improve the process through which policies are made as well as the outputs generated by governments.

In Greater Geraldton, there is an additional impetus – the desire for ordinary people to better understand complex issues, so they can more effectively problem solve and jointly 'own' decisions that will be in the interests of future generations. Low carbon living is integral to this effort. This will be the first time in the world that such a focus will be incorporated in the participatory budgeting process.

The Greater Geraldton 'Community Centric Budgeting' process will provide recurrent citizen participation in, and influence on, indeed co-ownership of issues that are important to them and that the City has discretion over. Everyday residents will be involved in the budgetary process. For the first time, they will have a reason to understand its complexity, and will have 'ownership' not only of projects developed, but of the budgetary allocation decisions made about them (See Figure 2 outlining the Greater Geraldton Participatory Budgeting Process).

The Geraldton PB initiative has already commenced in a small way as an integral part of the participatory precinct design process currently being rolled out – aiming at greater sustainability. Importantly, if Council accepts the proposed integrated participatory budgeting process, this will be the first time a PB process will have as one of its key goals that of low carbon living. In terms of the CRC, this will provide a 'Living Laboratory', not just for the rest of Australia, but indeed globally.

The CRC on Low Carbon Living, as outlined in the funded proposal, has considerable potential to enable lay-people, scientists, other experts and stakeholders to co-create a shared understanding of the issues in order to make wise decisions. As noted in Section 3, this is a critical step in achieving low carbon living (Stoll-Kleeman, 2003; Kasemir et al., 2003a; Garmendia and Stagl, 2010) and one which has as yet not been achieved on a broad scale anywhere in the world. In pursuit of this goal:

Carbon footprint data is now available (via Kinesis and others) to help people to make co- intelligent decisions about future plans.

- There are new options available in collaborative problem solving and decision-making, not only for 'scaling-up' (to deal with complexity); but also 'scaling-out' (to the broader population) through a more innovative role for traditional media, as well as through online deliberation and social media.
- The elusive concept of 'social capital' for greater resilience can be tested and evaluated.
- Similarly, the notion of the role of deliberative democracy in 'transformational change' (of individuals, groups, institutions and communities)

supporting low carbon living can be tested and evaluated.

- Aligned with deliberative democracy, new forms of governance can be trialed and assessed, such as new polycentric forms of participatory governance (Stoll-Kleeman, 2003)

An overview of the focus areas, key strategies, specific action pathways, milestones and timelines of this Project is provided in Figure 3 and Table 5 below.

Figure 2: Community Centric Budgeting

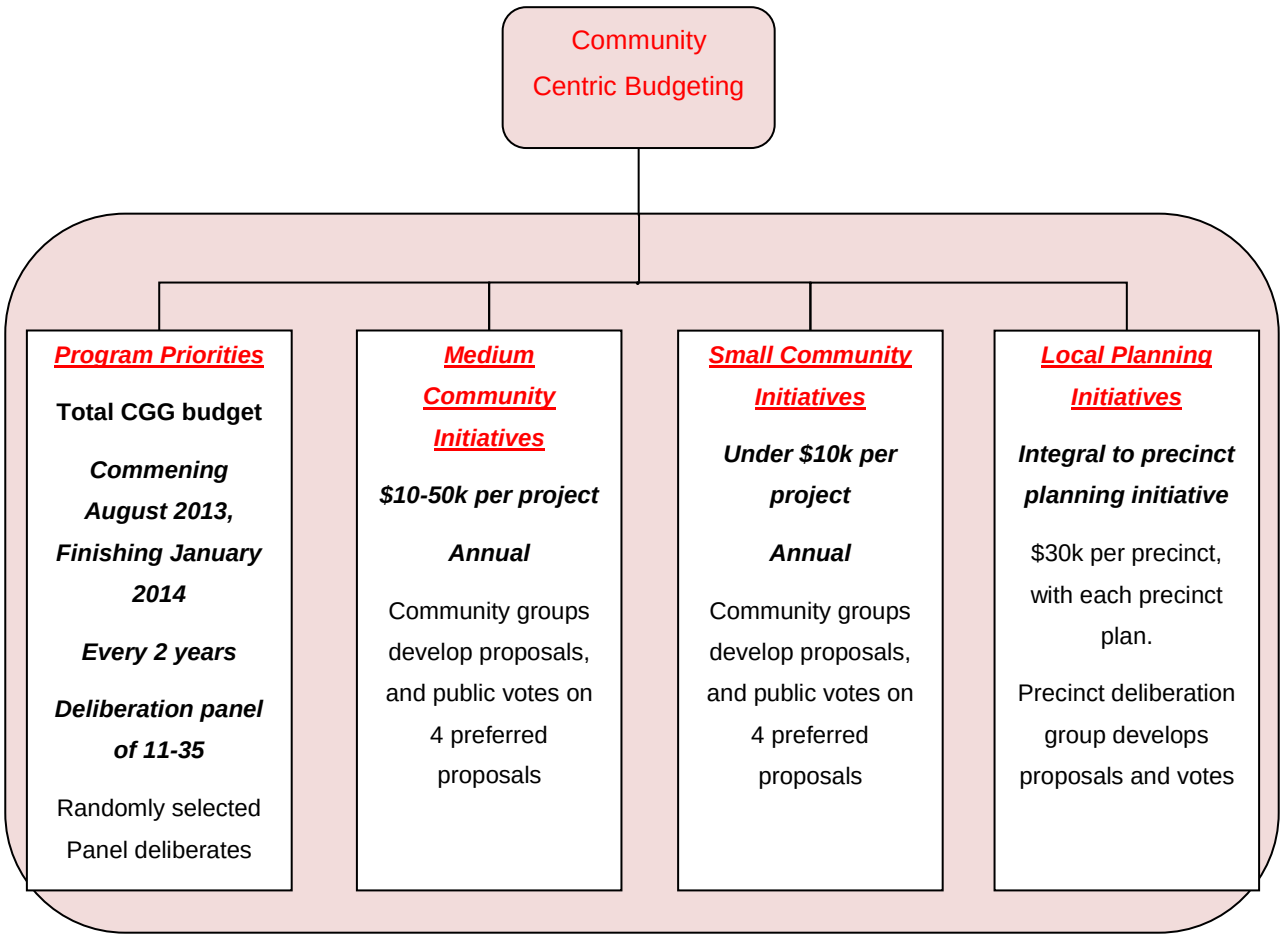


Figure 3: CRC Participatory Sustainability Focus Areas, Key Strategies and Action

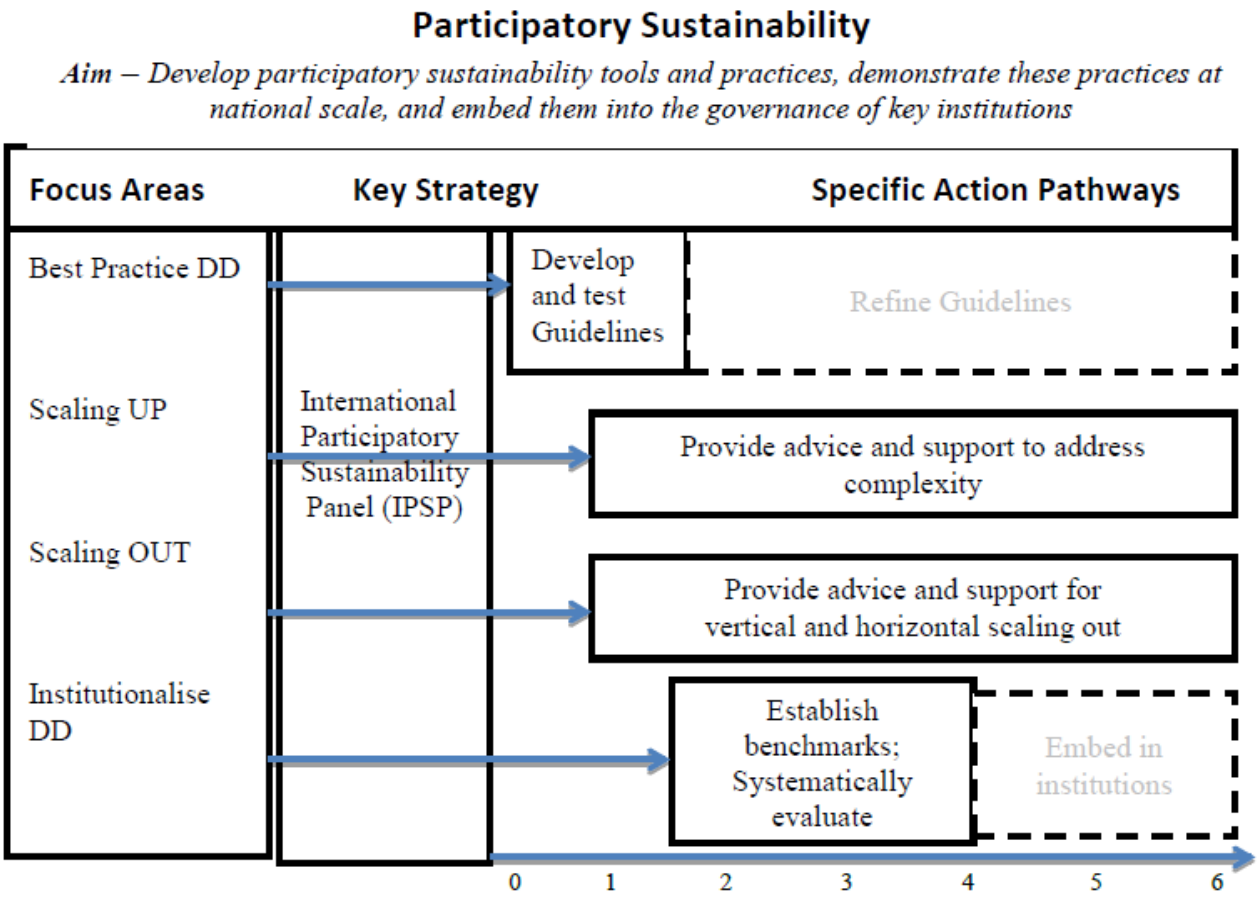


Table 5: CRC Participatory Sustainability Action Pathways

Focus Areas	Infrastructure Development			Research Projects			Living Laboratories		
	Establish International Participatory Sustainability Panel								
	Establish Benchmarks	Evaluate Systematically	Embed in Institutions	Participatory Sustainability Guidelines	Governance Models	Interactive media – social, online	Geraldton Participatory	Sydney Water Pilot	Other
Best Practice DD	X	X	X	X	X	X	X	X	X
Scale Up DD		X		X		X	X		
Scale Out DD	X	X		X		X	X		
Institutionalise DD		X	X	X	X		X	X	

Opportunities for activities and research within the CRC over the next 3-5 years

The potential scope for research into deliberative democracy and low carbon living is enormous. However, drawing on the literature review undertaking in this scoping study, a number of indicative preliminary areas are suggested below.

- Trial deliberative democracy internally to the CRC to deliver more integrated projects with enhanced impact. Integrating research across all three CRC programs can make the most of the CRC's 'multi-disciplinary research capability, and diverse industry participation';

Provide a better understanding of modes of thinking and learning that occur, or could occur, in deliberative processes, including less linear deliberative processes that mimic the learning people tend to undertake when tackling wicked problems, and approaches that are not restricted to rational discourse alone;

- Explore how social interactions play out in deliberative processes, in face-to-face and online processes; for instance the creation of identity, and in-group and out-group interactions and comparisons in deliberative democracy (see Felicetti et al 2012; Mutz 2008)
- Investigate the relative roles of partisans (such as scientists or industry stakeholders) and non-partisans (citizens) in deliberative processes;
- Investigate the extent to which deliberative democracy processes build social capital, such as political efficacy and improve civic resilience to respond to crises or ongoing problems;
- Design and trial new tools, apps and technologies that can support deliberative democracy processes, including software and online platforms, including ways to scale deliberative democracy practices up and out through various civic networks;
- Examine cultural and gender issues relevant to deliberative democracy;
- Investigate the best ways of integrating scientific research and social systems, transforming both in the process;
- Incorporate scientific knowledge into climate change and low carbon living deliberative democracy processes in order to support systems thinking, including through the use of gaming platforms or digital scenario creation;
- Research how deliberative democracy and other governance approaches to low carbon living, such as market based policies to mitigate climate change, could be designed to provide the best outcomes;
- Investigate how deliberative democracy and behaviour change for low carbon living might best connect;
- Research links between deliberative democracy, education and training, such as identifying and addressing training gaps and management discontinuities within industry.
- Develop commercialized outputs such as deliberative tools and techniques that support integrated design and planning, and help communities engage in low carbon living.

These research topics are suggested to stimulate thought, and are merely the starting point for conversations between CRC researchers about possible research projects. Many other research projects are possible. Proposals that address these (and other) research areas will be developed collaboratively with relevant members of the CRC.

CONCLUSIONS

There is strong and growing support for public participation in the development and enactment of sustainability policy and strategy in general, and in relation to climate change adaption and mitigation, including low carbon living. Governance for low carbon living must integrate multiple legitimate perspectives and forms of knowledge in order to deal with the sudden, unpredictable and interrelated biophysical, sociocultural and economic transformations. Various mode of 'public participation' have been implemented and evaluated over the last decades, however deliberative democracy in particular is identified as having particular potential to meet the new governance requirements of low carbon living, with a unique legitimacy founded on its three key elements: deliberativeness, representativeness/ inclusion, and influence.

A range of deliberative democracy processes and projects have been implemented worldwide that are either directly or indirectly relevant to climate change and low carbon living, and which demonstrate approaches to incorporating the key elements of deliberative democracy, as well as ways to scale out to directly or indirectly include large percentages of the population, and scaled up to enable deliberation on large, wicked problems that reach across local, regional, state, national and even international levels. There are however a number of gaps, barriers and opportunities in the practice and research of deliberative democracy, as identified in the research phase of the scoping study.

The draft framework of minimum and ideal guidelines for deliberative democracy, relating to deliberativeness, representativeness/inclusiveness, and influence, is intended to assist the design and evaluation of deliberative democracy initiatives within the CRC in terms of process and outcome (including direct and indirect impacts). The proposed International Participatory Sustainability Panel (IPSP) complements the Framework since Panel members will assist CRC participants to design and implement the framework of guidelines for deliberative democracy processes in a consistent and unbiased manner, and help to evaluate and even accredit deliberative projects. Of course the framework and the IPSP must themselves be the subject of research during the CRC in terms of their value within the CRC and their potential for broader application beyond the CRC, and as such as likely to be developed further. One of the first exercises the framework would be tested on is the proposed Participatory Budgeting in the City of Greater Geraldton. The use of the Framework of Guidelines for Deliberative Democracy and the IPSP's input in relation to Geraldton's PB will provide a sound foundation for comparative research and broader application across Australia, and elsewhere. It will provide an early testing ground for both the Framework and the IPSP, and possible accreditation.

The International Participatory Sustainability Panel is a prototype model for institutionalisation of deliberative democracy that can potentially be emulated elsewhere to scale deliberative democracy up and out in order to achieve low carbon living quickly. The IPSP can provide neutral, unbiased, and sophisticated guidance on participatory processes, in much the same way as the Productivity Commission works in the Australian context, or the International Standards Organisation operates internationally.

The indicative list of possible research topics for deliberative democracy research in the CRC has emerged from the research phase of this scoping study is intended to stimulate discussion and collaboration between CRC members. Many other possible projects in deliberative democracy are likely to emerge. Such innovation is to be encouraged, and can be facilitated by applying deliberative democracy principles within the CRC in order to enhance communication and project development between its participants. Deliberative democracy can play a key role in delivering more integrated multi-disciplinary projects, with increased impact across all programs. This will make the most of

the CRC's 'multi-disciplinary research capability, and diverse industry participation'. The internal use of deliberative democracy principles should also be a subject of research in itself, and would be relevant to scientific research agendas for low carbon living, and climate change in general.

Clearly, deliberative democracy action research in the CRC must gain momentum as quickly as possible to extract maximum value from the long term, networked research opportunities that exist. Therefore an indicative funding model is provided that outlines the basic resources needed to enable the proposed IPSP to begin its work in helping to apply the Framework, in order to align research programs appropriately and to begin collecting baseline data immediately.

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APPENDIX 1: CRC DELIBERATIVE DEMOCRACY PROCESS PLANNING WORKSHEET

1) Succinct Description

a) Name of project, including how it will be framed (to maximise participation in problem solving)

b) Its Purpose:

i. What is it about?

ii. Why do the organisers want to do it?

iii. Why is public deliberation important in this instance?

c) Describe the context/background (political, social, environmental, economic issues that matter)

d) How long is your public deliberation project likely to take from start to finish?

2. Desired Outcome(s)

Ideally, what difference will your public deliberation make? Include the desired short, medium and long term impacts.

3. How you will know if you are successful?

a) What are the key indicators of success?

b) How will you measure them?

4. How will you maximise:

a) **representativeness and inclusiveness? Consider:**

i. Who cares about this issue?

ii. Who will be impacted by this issue - positively and negatively?

iii. Who else has to be involved if this is to be a success?

b) **deliberativeness?**

c) **influence**

Deliberation technique(s) you think would be useful in this process and why

Name of Technique(s)	Stage applied in the process	Reasons for selecting

Resources you need for the deliberative techniques selected

Approximately how much money will you need to carry out your process(es)? For what?

Approximately how many people will you need to work on this? Doing what?

Key Milestones

Key Milestones	By When

Risk management

a. Is this process high or medium or low risk? Briefly explain why.

b. What could be done to reduce the risks? Briefly describe your contingency plans