

Responsible Action

Citizens' Dialogue on the Long-term Management of Used Nuclear Fuel

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CPRN is a not-for-profit policy think-tank based in Ottawa. It has been using public dialogue for a number of years as a means to involve citizens more directly in research and public policy discussions on issues such as health care reform, quality of life indicators, Canada's children, aging and the society we want. You can obtain further information about CPRN and its work in public involvement and other policy areas at www.cprn.org

CPRN developed this citizens' dialogue, adapting Viewpoint Learning Inc.'s ChoiceWork Dialogue methodology. The dialogue is designed to give decision makers a deeper understanding of citizens' value-based policy choices and to predict the future direction of people's preferences on important issues. CPRN initially used this methodology in the Dialogue on the Future of Health Care in Canada (Romanow Commission), and has since adapted it for use in policy research.

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Foreword

Canada has 22 commercial nuclear reactors, producing 13 percent of our electricity. Over their life time, they will produce 3.6 million bundles of used nuclear fuel. When they are first removed from the reactor, the bundles are very hot and extremely radioactive so they are moved by remote control to water-filled pools to reduce the heat and radioactivity. After 7 to 10 years, they can be safely moved into dry storage at the reactor sites. The bundles are placed into highly secured containers which are designed to last at least 50 years. While these containers can be replaced or upgraded, they were not built with the intention of providing storage for the very long term. The used fuel itself will remain hazardous for thousands of years.

The question put to citizens in this dialogue was how Canada should manage this used fuel over the long-term. A decision to move forward with a management plan would likely take 20 to 35 years to implement. International experience demonstrates that arriving at a decision that is accepted as legitimate, fair and technically sound requires a significant amount of time.

Canada is now approaching the time (November, 2005) when the Nuclear Waste Management Organization (NWMO) will deliver its recommendation to the Government of Canada with respect to the management of used nuclear fuel. As part of its comprehensive preparations, NWMO asked CPRN to undertake a Citizens' Dialogue on the Long-term Management of Used Nuclear Fuel. This report describes the outcome of the dialogue which took place in the winter of 2004. The results of this citizens' dialogue, along with the results of the other dialogues it has held, will be used to inform its work to assess and compare the benefits and costs of the different technical options available to Canada. NWMO has chosen to reflect societal values, in addition to technical merit and economic factors, in comparing these options and formulating a recommendation.

I commend NWMO for its broad and progressive approach to engaging citizens and stakeholders early in its process. I believe its efforts at public engagement offer a model for other decision makers who are trying to better understand the social and ethical considerations posed by complex, technical issues.

In the Dialogue, 462 Canadians, randomly selected to represent the population, learned about the challenges and worked through the issues with respect to who is responsible and how the decisions should be made. Their deliberations provide all Canadians, especially NWMO, the industry and governments with a values framework to guide their decision-making.

One of the challenges we faced in this dialogue will require serious attention in coming decades: Canadians know very little about the radioactive waste being produced by their electricity systems. Participants were taken aback by their own

lack of information. They immediately recognized the lack of public awareness as a serious handicap to responsible decision-making, both now and for future generations, on a topic of great long-term importance to the safety and well-being of the population and of the environment.

These citizens did not become experts in their day of dialogue. But they quickly seized the importance of the issue, and soon came to terms with the fact that action is required now – that we cannot leave such decisions to future generations. They settled on a step-by-step process, which would put in place the deadlines for completing the long process ahead: technical analysis, the public education, the research, and the interaction with civil society and host communities that will be needed to build trust and confidence in the choices to be made in coming decades. In a society where everything is instant, these long time frames are a severe test of our ability to be attentive to the decisions that really matter for the well-being of human kind into the future.

I wish to thank NWMO for entrusting this mandate to CPRN. I also thank the Project Team at CPRN and NWMO for their professional handling of this issue. Most especially, I want to express my admiration for the Canadians who participated, on behalf of all of us, in working through these difficult choices. It was truly an honour for those of us who attended the dialogues to listen to these people as they applied themselves to this issue. They demonstrated quite clearly that a successful long-term outcome will require sustained engagement with citizens over the coming decades and even centuries.

Judith Maxwell
July, 2004

Executive Summary

Why the Dialogue was Held

Like many other countries, Canada is now on a path to making a decision about how to manage used nuclear fuel for the long term. Efforts to study options have been underway for some time now. In the late 1980's, the government established a Federal Environmental Assessment Panel which undertook an extensive study and held broad hearings to examine the concept of deep disposal of the used fuel in the Canadian Shield. The Panel issued its report in 1998 and concluded, among other things, that more work was needed to design a management approach that would be acceptable to Canadian society, and recommended that a social and ethical framework be developed and used to compare the various possible approaches.

The Nuclear Waste Management Organization (NWMO) was established in November 2002 and is committed to working with Canadians to develop an approach that is socially acceptable, technically sound, environmentally responsible and economically feasible. The NWMO is required to make a recommendation to the federal government on a long-term approach by November 2005.

In designing the framework with which to compare the various approaches, the NWMO is undertaking broad dialogues with communities of interest, Aboriginal peoples, experts in many fields and other stakeholders early in its process. As part of this process, it asked the Canadian Policy Research Networks (CPRN) to conduct a citizens' dialogue with unaffiliated Canadians, to help identify the core values that are most important to Canadians with respect to this issue and that they would want to see reflected in a long-term management approach.

Who Participated

Between January and March 2004, 462 Canadians gathered in 12 cities across Canada to have a dialogue with each other about the values they expect to be reflected in Canada's approach to the long-term management of used nuclear fuel. All the participants were randomly recruited by a professional polling firm to be as representative as possible of the Canadian population, 18 years of age and older. They therefore came as unaffiliated individuals, not as representatives of stakeholder or special interest groups. Because the dialogue was held with a randomly selected, representative group of Canadians, it is reasonable to conclude that these citizens generally reflect the views of the broader population.

The participants took their role seriously and applied themselves with enthusiasm and commitment, reflecting their desire to make a contribution to this important public policy issue.

The Dialogue Methodology

The deliberative dialogue methodology used by CPRN for this research project was based on Viewpoint Learning Inc.'s ChoiceWork Dialogue methodology, which brings people together in groups of approximately 40, and supports them in working through difficult issues as they engage with one another. It enables people to interact, hear other perspectives and modify their views as they work together to reconcile those views with deeper values that underpin the choices they make.

There were a number of challenges in using this methodology on this particular issue. Few people, outside of experts, are familiar with issues related to nuclear energy, and the technical complexity can be overwhelming to many lay persons. Another unusual aspect about this issue, compared to many other public policy issues is its very long term nature. It is difficult for most people to conceive of the possible impact in 500 or 1000 years of decisions made today.

It was not intended to turn participants into technical experts on nuclear fuel over the course of one day, nor to ask them to deliberate on the merits of the different technical methods available. Rather, the dialogue was designed to give them enough information to understand the broad issues at play for society, examine different values-based perspectives and deliberate with each other about what is most important for them with respect to the long-term management of used nuclear fuel.

Dialogue participants were presented with four scenarios, each representing a plausible view that could be held by a segment of society. They could choose or reject elements from different scenarios, or identify their own new ideas, in arriving at their own preferred scenario.

The scenarios provided to citizens for this dialogue addressed the issues that society is best placed to answer. They were presented with arguments in favour and against each perspective, reflecting different values that people hold dear.

The first set of scenarios asked the question, ***“How do we best share rights and responsibilities across generations? Should we emphasize using the knowledge we have today? Should we emphasize choice for future generations?”***

The second set of scenarios asked, ***“How do we best ensure confidence and trust in a management approach? Should we emphasize the role of governments? Should we emphasize the role of affected communities and civil society?”***

Citizens' Guiding Values

In looking at the advantages and disadvantages presented in the scenarios, and in thinking through the issues as a group, citizens were forced to explore what was really important to them.

Safety from Harm - An Overarching Requirement

One overriding need underpins the values framework that emerged from the 12 dialogue sessions - that is the basic human need to feel safe from harm. This need did not arise from a sense of fear nor from an expectation of a risk free world, but rather from a sense of responsibility to this generation and future generations to take the necessary precautions.

They talked about safety and security in the context of recent events that posed risks to public health and the environment and expressed concerns about possible acts of terrorism, both now and in the future.

To manage these risks, they looked to governments to fulfill their responsibilities as regulators and standard setters. And they called for better information, greater transparency and inclusiveness in decision making to build public confidence about their overall safety.

The values framework summarized below reflects the choices they made, the conditions they imposed and the reasons they gave for choosing one outcome over another.

The Values Framework

Responsibilities across Generations:

- 1. Responsibility** - we need to live up to our responsibilities and deal with the problems we create
- 2. Adaptability** - continuous improvement based on new knowledge
- 3. Stewardship** - we have a duty to use all resources with care and to leave a sound legacy for future generations

Ensuring Confidence and Trust:

- 4. Accountability and Transparency** - to rebuild trust
- 5. Knowledge** - a public good for better decisions now and in the future
- 6. Inclusion** - the best decisions reflect broad engagement and many perspectives; we all have a role to play

1. Responsibility - we need to live up to our responsibilities and deal with the problems we create

Citizens want to leave a legacy for their children and grandchildren that they can be proud of. They want to take concrete steps to deal with problems. Dialogue participants were surprised and upset that the decision to use nuclear fuel was made 30 or more years ago without a plan in place to manage the used fuel for the long-term. As the generation that has consumed the energy and created the used fuel, they felt a sense of responsibility, to the extent possible, to act now and pay now.

2. Adaptability - continuous improvement based on new knowledge

Citizens do not presume that we have the best answers today. They look back over the last century and see how dramatically technology has changed their lives, and they expect this advancement to continue. They wanted to make deliberate investments in research so that future generations will have safer, more efficient ways to deal with the used fuel. They also wanted to invest in measures to ensure that future generations will have the knowledge and capacity to fulfill their own responsibilities with respect to the used fuel.

They therefore wanted to ensure that future generations will have access to the fuel so they can apply new knowledge. And they wanted a flexible, step-by-step management approach that would regularly take stock of new knowledge and adapt accordingly.

3. Stewardship - we have a duty to use all resources with care and to leave a sound legacy for future generations

The concepts of reduce, reuse and recycle are deeply embedded in the Canadian psyche, and citizens want to use all resources wisely. They want to address issues in an integrated, holistic way, looking at all possible costs and benefits of decisions on used fuel and on broad energy policy.

Dialogue participants saw reducing the volume of waste as a necessary part of the management approach. They acknowledged their own responsibility to reduce the amount of electricity they use, and recognized the challenge in changing behaviour. They called on governments to provide leadership to individuals and industry to reduce consumption by offering incentives and providing more information on the real costs of energy and the environmental and health impacts. They sought greater use of alternative energy sources like wind and solar power. And they wanted more research into how to safely extract more energy from the uranium as well as to try and reduce the toxicity of the waste.

4. Accountability and Transparency - to rebuild trust

Citizens hold governments, especially the federal government, as ultimately accountable for the public good, but their level of trust in government and industry is low. Dialogue participants imposed the following conditions on governments:

- There must be real engagement of experts, citizens, communities and other stakeholders before any decision is made;
- People must be told the truth. There must be greater transparency in decision making and monitoring by both government and industry. They want to know why decisions are made and how they are being implemented. They want to know if standards are being met or not. They want full disclosure of financial and management information;
- They are seeking assurance that decisions will not be made for political expediency or profit; and,
- They hold governments responsible for ensuring safety and security, including enforcing strong regulations and standards.

Participants felt that in order to have trust, they needed an independent, non-partisan oversight body to monitor government and industry, and to provide reliable information to citizens. They wanted this body to be composed of experts from many fields as well as citizen representatives.

5. Knowledge - a public good for better decisions now and in the future

Citizens are embracing the idea of knowledge as a public good to help make better choices, both now and in the future.

Their surprise at their own lack of awareness about the used nuclear fuel led to an urgent call for a) better efforts to ensure people are informed so they can engage in an informed way to support better decisions and b) investment in the education of young people to ensure that future generations have technical expertise and social institutions necessary to manage the used fuel.

Participants wanted investments to be made to create new technical knowledge and increased cooperation on research with other countries so that everyone could benefit from the best knowledge available.

6. Inclusion - the best decisions reflect broad engagement and many perspectives; we all have a role to play

Inclusion is about having a voice that is heard. Dialogue participants believed that better decisions would be made by involving as many perspectives as possible. Consumers, energy producers and related industries, scientists and other experts, affected communities, governments and citizens have a role in

making decisions and for contributing in an ongoing way to the management of used fuel over the long-term.

Citizens' Advice on the Way Forward

The core conclusions from the 12 dialogue sessions highlight the citizens' desirable characteristics for a long-term management approach. There was a high degree of consistency across all of the dialogues and the different data sources. The citizens' advice is outlined below:

- i. First and foremost, human health and the environment must be as safe as possible from harm, now and for the future.
- ii. We need to accept responsibility as the creators of the used fuel and users of the energy. Use our knowledge today to put in place a management approach for the long term. It must be flexible enough to adapt to new knowledge as it becomes available.
- iii. Recognizing that we don't have all the answers today, we need to deliberately invest in more research and expand global cooperation on research into better ways to manage the used fuel.
- iv. We need to take concrete steps now to ensure future generations have the knowledge and capacity to continue to address this issue.
- v. Future generations must be able to access the used fuel to apply better technology and manage the used fuel more safely or efficiently.
- vi. In the meantime, we need to reduce the amount of used fuel that we create, by conserving energy use, by assessing the costs and benefits of all types of energy, and increasing our use of alternative sources of energy such as wind and solar power.
- vii. There is a shared responsibility for making decisions between governments, experts from many disciplines, citizens and stakeholders.
- viii. Communities most affected should have a greater role and should be given support to ensure they have access to expert knowledge and resources if required.
- ix. Government is responsible and accountable in the end to ensure decisions are made in the broad public interest.
- x. To support the best decisions possible, there is a need for greater transparency of information about health and safety regulations, financial management and new research.
- xi. An independent body with expert and citizen representation monitors government and industry and provides reliable information to the public on the management of used nuclear fuel.

At the end of the day, participants were asked to rate their level of support for the fifth scenario they had developed together (as set out in the list above). Participants gave a high rating for their scenario (77%).

Implications from the Dialogue for the Way Forward

For the management of used nuclear fuel:

- Citizens were angry and frustrated by their lack of awareness around the issues related to used nuclear fuel. How, they argued, can society manage these issues for centuries to come if nobody knows what is going on? In order for them to have confidence, they called for government and industry to become far more transparent and effective in their communications.
- Their call for an independent watchdog, with both multidisciplinary experts and citizen representatives requires decision makers to revisit the mandates of existing oversight bodies in the nuclear field, and to determine how best to meet citizens' expectation in this area, keeping in mind the need for these bodies to have a very public face.
- The principles of reduce, reuse, recycle are deeply embedded in the Canadian psyche, and led them to insist that the industry and government invest in research and cooperate with other countries to find better ways to manage the used fuel.

In summary, dialogue participants offered a strong endorsement of the broad engagement approach the NWMO is using, and called for this type of approach to be embedded in future decision making. As NWMO assesses and compares the benefits and costs of the different management approaches and develops a recommendation for government consideration, it would do well to consider how best to continue the relationship that it has begun with citizens.

Implications for broader public policy:

- Citizens know that current patterns of energy consumption are not sustainable. They know that behaviour needs to change, that society needs to change, but they cannot see the logical path forward. They called for a discussion on the costs and benefits of all energy sources, including the cost of managing energy waste. They looked to governments for leadership in facilitating this discussion. Many of them would have liked to have started this conversation as the dialogue unfolded.
- Citizens are looking for public policy decisions to be made in a holistic, integrated way, looking at the long term, rather than short term political expediency. They want due consideration given to comparing costs and benefits, and impacts on other issues.
- There are many complex technical issues facing society today that raise deep ethical challenges and choices and have long-term consequences for generations to come. In addition to the best technical advice, decision

makers also need to understand what society values most, to help set the boundaries of risks and consequences that citizens are prepared to take themselves and impose on their children and grandchildren. They also want a voice when these decisions are made.

- Finally, the call for an independent oversight body to monitor governments and provide reliable information is driven by the absence of trust. Neither industry nor government should risk catching customers or citizens by surprise. In order to build greater confidence and to effectively engage, there is a need for a two-way conversation - with governments informing citizens and citizens having a voice, along with experts and stakeholders, in important public policy choices. It is through providing opportunity for Canadians in all their diversity to learn from each other and find areas of agreement, that we understand what society values. In this way, decisions gain trust, legitimacy and sustainability over the longer term.

Acknowledgements

The efforts of many people went into making this report possible. First and foremost, the authors wish to acknowledge the Canadians who participated in this dialogue. They committed their time, energy and thoughtfulness to this difficult issue, and it was truly a privilege to listen to them. We hope that they find this report accurately reflects their ideas. We also encourage them to continue to engage in important public issues, and hope they will encourage others to do likewise.

We also wish to acknowledge the support of the staff at the Nuclear Waste Management Organization and their extended family of consultants and experts. We would particularly like to thank Donna Pawlowski, who is managing NWMO's engagement efforts. Their wisdom and experience has guided us through the project from beginning to end. We would also like to thank the four individuals who reviewed both the draft workbook and report and offered their invaluable advice, leading to a stronger dialogue: the Honourable Allan E. Blakeney, Ms. Angela Ferrante, Mr. Blair Seaborn and Dr. Robert Slater.

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The participant recruitment was conducted by EKOS Research Associates Inc. and we wish to offer our thanks especially to Sue Galley, Mark Anderson and Derek Hughes (who patiently answered our many questions about statistics.) Prime Strategies once again provided all the logistical support for the dialogues, under the very able leadership of Cristina Nunes and her team. Jim Shepherd and his team at AVW-TELAV Audio Visual Solutions provided the audio and visual recording at each session. Jacques Fortin translated all of the material used for the dialogue and this report.

We would also like to thank other members of the CPRN team who have been essential to the completion of this project. Mary Pat MacKinnon has provided ongoing guidance and advice; Louise Jauvin has provided administrative and project management support throughout; Peter Puxley has been the key communications advisor with help from Gisèle Lacelle; and Al MacKay, our Vice President, Operations has jumped in to help whenever required.

We thank you all and take full responsibility for any errors that may have crept into this report.

Chapter 1 Background and Methodology

The Nuclear Waste Management Organization – Its Study and Where This Dialogue Fits In

In Canada, used nuclear fuel from nuclear power and research reactors is safely managed in interim facilities at the reactor sites, in accordance with regulatory requirements of the Canadian Nuclear Safety Commission. Like many other countries, Canada is now on a path to carefully consider a long-term management approach for used nuclear fuel. Used nuclear fuel is hazardous for hundreds to thousands of years and if not properly managed can pose a threat to humanity and the environment.

In November 2002, the Government of Canada brought into force the *Nuclear Fuel Waste Act*. This Act requires major owners of used nuclear fuel – Ontario Power Generation Inc, New Brunswick Power Corporation and Hydro-Québec, – to establish the Nuclear Waste Management Organization (NWMO), with a mandate to investigate approaches for managing Canada's used nuclear fuel and to provide a recommendation to the federal government by November, 2005. The Government of Canada will choose the management approach; the NWMO will then implement the approach decided upon by Government.

The Act was developed in response to recommendations made by a Federal Environmental Assessment Panel, established in the late 1980's to examine the concept of deep disposal of used nuclear fuel in the Canadian Shield. The Panel issued its report in 1998 and concluded that on balance, the concept of deep disposal was technically sound, but that broad public support was required to ensure the acceptability of a concept for managing used nuclear fuel. It concluded that more work was needed to find a management approach that would be acceptable to Canadian society. It recommended that a new organization be established at arms lengths from the nuclear industry, that it compare the different approaches to managing used nuclear fuel and that it use a social and ethical framework to assist in the comparison. It also emphasized the need for broad consultation with Canadians.¹

The NWMO is a new organization, established in 2002, and is committed to collaborating with Canadians to develop a management approach that is socially acceptable, technically sound, environmentally responsible and economically feasible. To do this, it has engaged a broad range of experts in many fields, various communities of interest, stakeholders and Aboriginal peoples. It also wants to ensure that the framework used to assess the various approaches

¹ *Report of the Nuclear Fuel Waste Management and Disposal Concept Environmental Assessment Panel*. February 1998. Minister of Public Works and Government Services Canada.

available to Canada and to develop its recommendations to government, reflects the values of Canadian society.²

The NWMO asked the Canadian Policy Research Networks (CPRN) to conduct a dialogue with Canadians, using a methodology that takes participants through a process of social learning and surfacing of core values.

The word 'value' has multiple interpretations and can be defined in many different ways. In offering a definition that best describes the values CPRN tries to understand through dialogue, we draw from our own work and a number of sources. The Canadian Oxford Dictionary defines values as, "the principles or moral standards of a person or social group; the generally accepted or personally held judgement of what is valuable or important in life."³ Daniel Yankelovich notes there are many interpretations of what values are, and also of the difference between values, opinions and attitudes. His review of social science literature reveals that values lie deeper within the psyche than *attitudes*, which can be fundamental perspectives, or *opinions*, which are judgements on current issues and most subject to change. "*Values are people's ideals and commitments they make, involving religious beliefs, standards for interpersonal relations, moral and ethical judgements.*"⁴

The US based National Issues Forum, which has extensive experience in framing challenging public issues for public discourse, notes that the choices people make "... will rise out of what people hold most valuable in their individual lives and in their collective community life."⁵

CPRN's report *Exploring Canadian Values* (1995) captures well our understanding of 'values':

"Values are...the ideas that people value greatly...Values emerge as people talk about the things closest to them...Values run deep... They are the things that we care most deeply about, but may be the hardest to articulate...While these values are clear, there is often a healthy tension among them."⁶

In analysis of the dialogue proceedings, we are able to understand the values that drive participants to make their choices, and test whether those values are widely shared.

² For those interested in further information on this topic and the work the NWMO is undertaking, see Web site at: www.nwmo.ca

³ *Canadian Oxford Dictionary*. 2001. Don Mills: Oxford University Press Canada, p. 1605.

⁴ Yankelovich, Daniel. 1991. *Coming to Public Judgement: Making Democracy Work in a Complex World*. Syracuse, NY: Syracuse University Press, p. 120-121.

⁵ *Framing Issues for Public Deliberation: A Curriculum Guide for Workshops*. 2001. Dayton, OH: Charles F. Kettering Foundation, p. 13.

⁶ Peters, Suzanne. 1995. *Exploring Canadian Values: A Synthesis Report*. Ottawa: Canadian Policy Research Networks, p. 4.

The results of the citizens' dialogue, captured in this report, will be used by the NWMO along with the results from its other dialogue and engagement activities, as it moves forward in developing a long-term management approach for Canada's used nuclear fuel. Because the dialogue was held with a randomly selected representative group of Canadians, it is reasonable to conclude that their views are generally reflective of the broader population.

The next chapter describes the dialogue methodology. Chapter 3 of this report provides a profile of the dialogue participants and how they were chosen. More detail on their demographic characteristics can be found in the appendices at the back of the report. Chapter 4 is a brief description of the process participants went through over the course of the day. The next two chapters present the findings from the dialogue. Chapter 5 describes citizens' guiding values that emerged through the course of the dialogue, and describes how citizens' applied those values to the issues around the long-term management of used nuclear fuel. Chapter 6 describes the core advice from dialogue participants, summarizing the scenario that citizens designed themselves. It then reviews the key data that shows how people's thinking evolved throughout the day. The final chapter concludes with a summary of the key implications of the results of the dialogue for decision makers.

Chapter 2 Why a Dialogue?

Deliberative dialogue brings people together from all walks of life and encourages them to work through tough issues, learning from each other as they listen to and understand perspectives which are different from their own.

Dialogue facilitates the creation of “shared meaning...Dialogue broadens the understanding of the issue before moving into more formal decision making.”⁷ It allows participants to examine their own thinking, and through talking with each other, to identify areas on which they can agree, while acknowledging differences. The area of agreement, or *common ground*, provides an acceptable way of moving forward to address the issue at hand. A recent publication from the Kettering Foundation, a pioneer in promoting dialogue in the United States, notes, “...deliberation does more than tolerate differences; it uses them. And it doesn’t destroy individual differences in a homogenous amalgam; rather deliberation builds on each perspective in creating its integrated view of the whole.”⁸ (Appendix 1 provides more detail on the methodology and Appendix II describes the differences between dialogue and debate.)

For this dialogue CPRN adapted the ChoiceWork Dialogue methodology, developed by Viewpoint Learning Inc.⁹ The methodology is based on the research of its Chair, Daniel Yankelovich, into the stages through which public opinion develops, from initial raw opinion to more considered public judgement. It is particularly well suited for policy issues at early stages of development, where people have not devoted a great deal of thought or for familiar issues where changed circumstances create new challenges that need discussion. Under these conditions people’s top of mind opinions are highly unstable and misleading. The conventional public education model holds that public opinion is formed through a simple two-stage process: information leads to public judgement. However on complex issues such as long-term management of used nuclear fuel, public judgement evolves through three stages – information, followed by a middle stage of ‘working through’ conflicting values and hard choices, followed by resolution.¹⁰

CPRN has made several modifications to the methodology, based on its experience with previous dialogues on Health Care, Canada’s Future and the Ontario Budget Strategy, and its interaction with other practitioners. It was

⁷ Gerard, Glenna and Linda Ellinor. 1995. “Dialogue”. In Peggy Homan and Tom Devane (eds.). *The Change Handbook: Group Methods for Shaping the Future*. San Francisco: Berrett-Koehler Publishers Inc. (pages 218 - 229).

⁸ Matthews, David and Noelle McAfee. 2003. *Making Choices Together: The Power of Public Deliberation*. Dayton, OH: Charles F. Kettering Foundation, p. 64.

⁹ Viewpoint Learning Inc. See: www.viewpointlearning.com

¹⁰ For more information, see Yankelovich, Daniel, op. cit.

further adapted in light of the technical nature of the issues surrounding used nuclear fuel.

Deliberative dialogue methodologies like ChoiceWork Dialogue are designed to help people move beyond their initial impulse to avoid hard choices and disagreeable realities. They encourage people to work through their internal resistances and come to grips with difficult issues as they engage with one another. They enable people to interact and modify their views as they work together to reconcile those views with their deeper values. One advantage of these techniques is that they offer profound insight into how people really feel, what matters most to them and what trade-offs they will or will not accept.

Developing the Citizens' Dialogue Workbook

In the dialogue methodology used by CPRN, dialogue participants are supported by a workbook that provides key factual information and describes different perspectives or scenarios on the issue to be discussed. Each perspective needs to be plausible, reflecting views that could be held by segments of society. These scenarios are described in the workbook in a factual, objective way and presented in language that resonates with participants. Arguments are offered in favour and against each perspective, reflecting different values people hold dear. Participants don't have to agree with the perspectives offered, but the way they are presented should enable people to see another's point of view.

The scenarios are presented as starting points to help participants think through the issues at hand. They are not asked to choose between one scenario or another, and in most cases, will combine elements from different scenarios and add new ideas, as they create their own preferred scenario. In examining the various scenarios and talking together about the positive and negative implications, dialogue participants are able to assess the consequences, make tradeoffs and reject or choose various elements of the different approaches as they identify their own, preferred approach.

One of the tenets of framing public issues, according to the National Issues Forum is "...that framing an issue means getting down to people's deepest concerns: an issue framed in terms of what is truly valuable to people is very different than a problem presented in expert, technical, or ideological terms; what is truly valuable to people grows out of everyday experiences, and issues presented in these public terms give people a chance to identify with them."¹¹

It was not possible with the time available for a dialogue, to engage in a discussion of every issue and question that could arise with respect to managing used nuclear fuel. The focus needed to be on providing key information to enable participants to understand the broad context needed for an informed

¹¹ *Framing Issues for Public Deliberation*. op. cit., p. 61.

discussion without overwhelming them with too much detail or specific technical information.

The CPRN/NWMO project team spent much time and effort developing the workbook background information and choosing, framing and describing the scenarios to support citizens in their dialogue. A wide range of research papers commissioned by the NWMO in the areas of science, environment, social and ethical implications, health and safety were key sources of information for the workbook. In addition, results of focus groups organized by the NWMO helped to illuminate, for CPRN, citizens' current thinking about this issue.

Four individuals, bringing different expertise in the areas of environment, governance, public policy and communications, reviewed the draft workbook for coherence, balance and accuracy. In addition, a workshop was held with independent experts in the areas of environment, public consultation and sustainable development to critically review the workbook and ensure that it was objective, unbiased, and not advocating one position or perspective over another. The first two dialogue sessions, in Ottawa and Montreal, were pilots. Adjustments were made to the workbook based on what we heard from citizens in those two sessions, to ensure greater clarity of information.¹²

The dialogue was not intended to turn ordinary citizens into technical experts on nuclear fuel over the course of one day, nor to ask participants to deliberate on the merits of the different technical methods. Rather, the dialogue was designed to give them enough information to understand the broad issues at play for society, examine different values-based perspectives and deliberate with each other about what is most important for them with respect to the long-term management of used nuclear fuel.

The Scenarios

The long-term management (over hundreds if not thousands of years) of hazardous material raises a complex set of issues. Many of these issues require the consideration of a significant amount of background material – others require detailed technical knowledge. However, the dialogue focused on the core questions that society is best placed to answer – what responsibilities do we have to future generations? How should society deal with uncertainty? How should today's society deal with decisions that were made by previous generations?

¹² Adjustments made to the workbook after the pilot sessions included providing additional information on the state of the current storage facilities, key Canadian organizations involved in this issue, research underway on various technical methods around the world, and an outline of what other countries are doing with respect to the long-term management of used nuclear fuel.

The scenarios chosen for the dialogue on long-term management of used fuel represent possible perspectives about the roles and responsibilities a) across generations (i.e. between this and future generations) and b) within a generation (i.e. of governments, industry, civil society and affected communities). They were carefully chosen to help facilitate a discussion among participants about what is important about this issue from a societal perspective.

Participants were not asked to choose between the scenarios, but rather assess them on their own merit, and use them as a starting point for their discussion. The two scenarios in each set are not polarities at either end of a spectrum, but they do present inherent tensions. In considering these tensions, participants confront some of the difficult choices that must be made.

Summaries of the two sets of scenarios follow. The complete workbook is available on the CPRN Web site at www.cprn.org

SUMMARY OF SCENARIOS 1 AND 2

HOW DO WE BEST SHARE RIGHTS AND RESPONSIBILITIES ACROSS GENERATIONS?

Emphasize using the knowledge we have today. A long-term management approach for used nuclear fuel will be adopted now, leaving as little responsibility for future generations as possible. We have enough scientific and technical knowledge to make decisions and we benefit from nuclear technology. We have a responsibility to act now and make decisions regarding the best possible approach to managing the used fuel for the long-term.

Emphasize choice for future generations. Our current knowledge and technology allows us to safely manage used nuclear fuel responsibly in the existing storage facilities for many years. Despite all the technical work that has been done, there is still much we do not know. We have a responsibility to develop new knowledge, technology and institutions so that future generations can make better informed decisions.

SUMMARY OF SCENARIOS 3 AND 4

HOW DO WE BEST ENSURE CONFIDENCE AND TRUST IN A MANAGEMENT APPROACH?

Emphasize role of governments. Canadians expect the Ontario, Quebec and New Brunswick governments and the federal government to take responsibility for protecting and promoting human health, public safety and the natural environment. As the shareholders and regulators of the power companies, these governments have an obligation and mandate to manage this issue and be held accountable for how well they do this.

Emphasize role of affected communities and civil society*. Canadians expect to have a voice in long-term decisions about their future health, safety and environment, especially the communities most directly affected by used nuclear fuel. We need to ensure that those communities are effectively involved in making decisions about how to manage used fuel, including the right to refuse to host a used fuel facility. Those communities and civil society should play an ongoing role in monitoring.

***civil society** includes non-profit organizations, interest groups and associations, and the general public.

Chapter 3 The Participants

In total, 462 Canadians gathered in 12 cities across Canada between January and March, 2004, to have a dialogue with each other about the values they expect to be reflected in choosing an approach to manage used nuclear fuel for the long-term. Nine of the dialogue sessions were held in English (Ottawa, Thunder Bay, Sudbury, London, Toronto, Halifax, Saskatoon, Calgary and Vancouver) and three were held in French (Montreal, Québec City and Moncton). Five of the sessions were held in Ontario, because it produces 91% of the used nuclear fuel in Canada. In all, 192 (41.5%) participants were from Ontario and 270 (58.5%) were from the rest of Canada.

Participants were randomly recruited by a professional polling firm to be as representative as possible of the Canadian adult population. (See Appendix III for a demographic comparison of participants to the total population based on the 2001 Census data from Statistics Canada.) There were students and grandparents, rural residents and city dwellers, people from many ethnic backgrounds, levels of education, income levels and family situations.¹³

To prevent having a disproportionate percentage of participants with strongly held views (pro or con) about nuclear energy, all 9,686 people called by the polling firm were asked questions about their support for nuclear energy. All dialogue participants were recruited from this pool of 9,686 people. Participants' views on support for nuclear energy were generally consistent with those of the broader population (55.6% and 48% respectively), surveyed by Ipsos-Reid on behalf of the Canadian Nuclear Association in November 2003. See Appendix IV for attitudinal data.

These Canadians came to the dialogue sessions as unaffiliated individuals, not as representatives of stakeholder or special interest groups. All were dedicated participants, giving up a Saturday or Sunday during our Canadian winter, to spend 9 hours talking about this issue. Their participation reflects their desire to make a contribution on an important public policy issue.

¹³ Men were somewhat over-represented compared to the general population at 56.9% with women making up 43% of the participants. In addition, there were fewer participants with less than high school graduation compared to Canadians generally.

Chapter 4 The Dialogue Process

Before the dialogue, participants received a letter explaining the dialogue process and brief background information on used nuclear fuel and the role of NWMO. On arrival at the dialogue session, they were provided with the workbook that included additional factual information about this issue and presented the two sets of scenarios to consider as a starting point for their discussions. A pre and post questionnaire asking citizens to rate each of the scenarios was also provided.

At the beginning of the day, two professional facilitators reviewed the factual information in the workbook and a short NWMO video was shown. Information provided to participants included a brief overview of what is being done in terms of current management approaches of used fuel in Canada and in other countries, the various technical methods currently being explored around the world, and the mandate of NWMO. This information was supplemented by a description of the mandates of other relevant organizations involved with the management and regulation of used nuclear fuel, wall charts and photos of current storage facilities.

Following this orientation, citizens had an opportunity to ask questions. Many of them were facing this issue for the first time and there were many questions. Often the facilitators could address the questions, but on occasion clarification or explanation was required. In these circumstances the questions of a technical nature were noted and referred to CPRN and NWMO for follow-up. Answers were provided to the group as soon as possible.¹⁴

Participants then introduced themselves to the group, stating a key issue or concern with respect to used nuclear fuel.

The facilitators proceeded to review the two sets of scenarios presented in the workbook as a starting point for the dialogue. Citizens completed a questionnaire in which they rated their level of agreement with each scenario statement on a scale of one to seven.

After reviewing the rules of dialogue and the difference between dialogue and debate, participants worked in smaller, self-managed groups to answer the question “What characteristics do we most want to see in a long-term approach to managing used nuclear fuel?” These groups were designed to be as reflective as possible of the demographic and attitudinal profile of the broader group.

¹⁴ After the first three dialogues, some adjustments were made to the question and answer part of the session, so that the dialogue could be focused on societal values, and not become sidetracked into bilateral question and answer sessions.

Back in plenary, each small group reported on the results of its discussion. The whole group, with the support of the facilitators, then deliberated together to identify the similarities and differences across their reports. The similarities were tested by the facilitators to ensure they represented common ground - areas of agreement across a broad majority of the group. The common ground became their own vision of the high level characteristics they wanted to see in a long-term approach to managing used nuclear fuel.

The same process was followed in the afternoon, with the small groups tasked with expanding on the vision they had created by answering the following question: "What choices are we prepared to make to move toward the kind of approach we want?" After reporting back from their small group discussions, the larger group again identified the common ground, elaborating on their vision from the morning and exploring some of the choices and tradeoffs they would be prepared to make. Again, the facilitators reviewed the similarities with participants, to ensure they had accurately captured the common ground.

At the end of the day, participants were again asked to rate each of the four scenarios. This time they were given the opportunity to attach conditions to their ratings and 350 participants (76%) attached at least one condition. They were also asked to rate their level of agreement with the vision they had developed earlier in the day. In addition, they were asked to complete an evaluation of the session itself. To conclude the dialogue each participant had the opportunity to state their insight from the day and offer one piece of advice to decision makers. The vast majority of participants chose to make this closing comment.

The common ground identified by citizens was reinforced by the other data sources, including the pre and post questionnaire ratings, the conditions they imposed on their ratings, and the opening and closing comments. CPRN analyzed all of this data to inform this report. CPRN also compared the Ontario dialogue session results with those from the rest of Canada, to test for variation. Overall, there was very little difference between them. Where there were significant differences, they are noted.

Chapter 5 Citizens' Guiding Values

As participants talked, learned and deliberated together throughout the day, their core values emerged. In looking at the advantages and disadvantages presented in the scenarios, and in thinking through the issues as a group, they were forced to explore what was really important to them. Their values are reflected in the choices they made, the conditions they imposed and the reasons they gave for choosing one outcome over another.

This chapter begins with a discussion of one overarching requirement: the basic need to feel safe from harm. This was clearly identified by participants in all 12 sessions.

Safety from Harm - A Paramount Requirement

In examining the results of the dialogues, it became clear that the basic need to feel safe from harm was paramount. In stating this requirement, participants were not acting from a sense of fear or impending doom, but rather from a sense of responsibility to this generation and to future generations, to take the necessary precautions to ensure safety from harm to the greatest extent possible. Their expectations were based on common sense, not a naïve expectation of a world without risk.

It is important to note that safety and security issues did not overwhelm the discussion throughout the course of the day. For the most part, participants were comfortable that appropriate safety and security measures are in place now. At the same time, they drew on recent events in areas affecting public health and the environment, and uncertainty about the environment over the long term. Some expressed concern that the materials used to store the used fuel over the long term could deteriorate, posing potential risks to human health or contaminating the environment. *"Remember, whatever decisions we make concerning Mother Earth will affect all people in future generations to come. This is why I feel it is very important to make sure that all necessary precautions are taken so that these waste materials are safely stored so that the future contamination of Mother Earth and the human race can be prevented. Remember, we are borrowing from our children. So my question here would be, how safe are these storage systems? And it would help me to understand more so that I can have some kind of security."* [Ottawa]

They also looked at the political instability in the world today and expressed concerns about actual and possible acts of terrorism, citing the events of September 11, 2001 which were still very present in their minds. As stated by a participant in Montreal, *"...we talked about September 11. There are wars that will be possible in 200 years. I think it's important to put money, staff and research into protecting the waste."* [Translation]

Most, however, spoke about safety and security in a broader, all encompassing sense. They wanted action taken now to ensure safety and security for people, their health and the environment - now and for the future.

As they thought about what would make them feel most safe and secure, they looked to governments to fulfill their responsibilities to enforce regulations and standards. But they also want a trustworthy source to provide more information about whether governments are doing their job and regulations are being met, and to help them make more informed choices as individuals and as part of the broader society.

While some participants indicated they were prepared to keep some information secret for security purposes (such as transportation routes of used fuel), most saw greater transparency and inclusiveness as key to feeling more confident about their overall safety. In the words of a participant in Toronto: *"...more has to be transparent. It's impossible to keep things secret from the public. This isn't the sort of society that does that, and the price to pay for that is it costs more in terms of security - in terms of monitoring these facilities, monitoring rail routes if necessary, heavy security at the locations where the waste material is housed. ...as long as we're willing to bear that cost, that just goes hand in hand with an open society...."*

A number of people identified the "fear factor" around nuclear issues, and they called for better information in order to understand and deal with the real rather than perceived issues. *"I think the people need to be fully informed of the huge number of safeguards that go into these nuclear plants and the studies that are being taken to safely remove the used fuel...if the public could get reassured that their safety is paramount ... [then] the words 'nuclear energy' won't...set off hairs standing up at the back of your neck...."* [Toronto]

Citizens were not asked to determine the best location for the used nuclear fuel, nor were they provided with information that would allow them to assess different site possibilities. However, the issue did arise as participants discussed what would make them feel safest and different perspectives were raised. These are included here to provide insight into how people addressed this issue.

Some said that they would feel safest if the used fuel was isolated in a remote place. As one participant from Thunder Bay stated, *"...it could be a problem for the communities beside nuclear power plants as these storage facilities get larger and get older. And it's quite a populous area, so that perhaps something should be done to move it to a more isolated area and a collective area where it can be managed more effectively, both from a safety standpoint and a security standpoint."*

Others felt they would be safer if the used fuel was left where it is so as not to incur possible risks to health or environment by transporting it. A participant in Halifax said, *"We are wondering why it wouldn't be left on site or where it is stored? The fights have already been fought...everything's already been held, it's already there, so why mess with that?"*

Some raised concerns that if it were stored deep underground, there would be no incentive to continue to find better ways to deal with it. *"We want it in sight, in mind, being dealt with."* [Thunder Bay]

Most participants recognized the need for a more thorough assessment of the costs and benefits of the various options available before a decision on location could be made.

The rest of the chapter addresses the values that citizens applied as they identified the characteristics they wanted to see reflected in a long-term management approach designed to assure safety and security. Each section begins with a discussion of the value, which is supported by a description of how citizens applied the value in arriving at their preferred scenario in the dialogue, drawing on the words they used themselves as much as possible.

The first three values address the issue of how rights and responsibilities should be shared across generations. The last three values address how best to ensure confidence and trust - how decisions are made and who should be making them. The values are not mutually exclusive, but rather, they often reinforce each other. Taken together, they provide a values framework to help inform how best to go forward on this issue.

Citizens' Guiding Values

Responsibilities Across Generations:

1. **Responsibility** - we need to live up to our responsibilities and deal with the problems we create
2. **Adaptability** - continuous improvement based on new knowledge
3. **Stewardship** - we have a duty to use all resources with care and to leave a sound legacy for future generations

Ensuring Confidence and Trust:

4. **Accountability and Transparency** - to rebuild trust
5. **Knowledge** - a public good for better decisions now and in the future
6. **Inclusion** - the best decisions reflect broad engagement and many perspectives; we all have a role to play

The Values Framework

1. Responsibility - we need to live up to our responsibilities and deal with the problems we create

Citizens place a high value on living up to one's responsibilities. They want to take steps to deal with problems - especially those that have been created in their generation - in a concrete way. They do not want to avoid decisions and impose their problems on their children or their grandchildren. In fact, they are not comfortable leaving behind problems to have someone else to deal with. Providing a legacy they can be proud of is important to them.

They want to learn from the past and not make decisions that could have a long-term negative impact. They are not prepared to make irreversible decisions that will constrain future generations.

How Citizens Applied this Value:

Act now. As participants better understood the issues around used nuclear fuel their sense of the need to act increased. They were surprised and upset that the decision to use nuclear energy was made 30 or more years ago without already having a long-term plan to manage the used fuel, and that many years have gone by without a plan in place. *"I think one of the most surprising things that I've learned today is that they built these nuclear reactors and had no real definitive plan on what to do with the waste and 30 years later, we're trying to decide."* [Toronto]

Take responsibility for the problems we create. Participants saw themselves as the generation that has consumed the energy and created the waste. They felt a sense of responsibility to act now to the extent possible - to make some decisions about the long-term management of used fuel and to pay for managing the used fuel that has been created. They endorsed the polluter pay principle, and did not wish to leave a large financial burden for future generations.

"...we recognized that a decision had to be taken now, a plan of action put into place now. ...so we wanted to take responsibility, we wanted to say let's get at this now, let's get something started now, but at the same time, we said...it has to be done such that we have the options over the next 20 or 30 years to change or divert our plan a little bit, should that become a lot more feasible." [Ottawa]

They wanted to take concrete measures to put in place a long-term management approach, on the condition that future generations would be able to access the used fuel, in order to apply new knowledge and better ways to manage it. Action now also included a deliberate investment in research and in capacity development, to ensure future generations will be able to deal with this issue. Participants also wanted governments and industry to be more transparent about what is being done and more inclusive of citizens and other stakeholders both in how decisions are made and in the ongoing management of the used fuel. The

remaining section of this chapter offers more detail on the specific actions citizens want to see.

2. Adaptability - continuous improvement based on new knowledge

Citizens do not presume we have the best answers today - especially on issues that are long-term in nature. Rather, they want to be open to new learning, and be able to adapt to it. Participants looked back at the past century and saw how dramatically technology has advanced, with significant impact on their lives and they had no doubts that this advancement will continue into the future. As a participant from Halifax stated, *"...it really scares me that we would be naïve enough to think that we have all of the answers right now. I think that we really do need to take a view to the development of new technology and information to come."*

They prefer a step-by-step approach that includes ongoing monitoring and regular stock-taking of new learning. They want decisions of a long-term nature to be flexible enough so they can be adapted to incorporate new knowledge or address changing societal conditions. They embraced continuous learning.

In calling for future generations to have the opportunity to apply new knowledge, citizens give notice to future generations that they are expected to continue to take responsible action, and ensure they have the knowledge and capacity to do so.

How Citizens Applied this Value:

Keep the used fuel accessible. Dialogue participants wanted to ensure that future generations would be able to access the used fuel to apply new knowledge. They expressed a lot of optimism that a better way will be found in the future to manage the used fuel, and called for a deliberate investment in research, to support future generations to find a better way to manage the used fuel. Their optimism is driven by their practical experience. *"...science advances very quickly. In nuclear energy alone, they have discovered how to use it for non-peaceful purposes, they have discovered isotopes for our hospitals. Why could they not find a solution for managing the waste? ...They figured out how to make a nuclear bomb, for God sakes, it would be nothing now to find a way to manage the waste and to destroy it ...you have to be optimistic when you're dealing with science."* [Translation] [Montreal]

The management approach should be adaptable. Participants expected the management approach to be flexible enough to be adaptable over time as new knowledge becomes available. A person from Thunder Bay stated, *"...we felt that what we really needed was a flexible plan, a plan that did not make all the decisions for today, but made decisions to work towards what we know today, leaving enough flexibility in it that as time goes on, future generations with their new knowledge can insert into the plan and change it as required. Again, 30 years from now is different than today....So it can't just be something that we make up today and it's going to last forever."* They wanted mechanisms established now to provide continual monitoring, evaluation and adjustment based on what is

learned - to serve both current and future generations. As an Ottawa participant said, it is *"...not just taking this one- time decision quickly and then everybody goes back to sleep and somebody goes and implements, but it's the idea of ongoing vigilance and monitoring. And you can only do that if you continue to keep the level of awareness up amongst the populace."* A Vancouver participant pointed out, *"This doesn't just go away and take care of itself. We have to be active, we need to be involved, participating and careful with what we do. It's management, it's not disposal. So let's not get confused on that."*

Ensure future generations have the knowledge and capacity. Participants wanted to put in place education programs to ensure that future generations will have nuclear scientists and other experts so they can fulfill their own responsibilities in dealing with issues related to nuclear waste. (This is reinforced in the knowledge value.) *"...one of my major concerns is the dwindling number of experts who are actually well versed in the nuclear industry because there's been such a stigma attached to it that I know the industry has had a lot of trouble recruiting new people to help manage the situation. If we don't have people who are informed and educated on the subject, we're not going to be able to make very good decisions for the future."* [Vancouver]

Research is not an excuse for avoiding decisions. A number of participants wanted to set some time limitations on research, such as the life of the existing storage facilities. *"...we wanted to put our emphasis on research at this stage, continuing research which would give us time to come up with a solution that we could trust long-term. ...[but not] just keep putting it off...draw, as a deadline, the projected lifetime of current temporary storage facilities... - between where we are now and when we have to decommission these temporary storage facilities there would be an opportunity to do the research, not just in Canada, but in [a] kind of global cooperation...that would lead us to the best possible solution."* [Ottawa] For others time was not an issue - they saw continual adaptation as meaning there was no fixed end-point.

3. Stewardship - we have a duty to use all resources with care and to leave a sound legacy for future generations

Citizens seek to deal with issues in an integrated and comprehensive way and make holistic decisions. They want to look at the long-term implications of decisions and not rush into action based on short-term expediency. Citizens call for impacts of decisions to be examined from many perspectives, comparing the positives and negatives of different options. They see a need to look beyond an isolated issue to see the broader implications, including the need to assess the impacts beyond our borders.

The concepts of reduce, reuse, recycle have become deeply embedded in the Canadian psyche. Citizens want to use resources wisely - both natural and financial resources. They seek to protect and enrich what we have, to leave a better place for future generations. They take the idea of legacy to heart, especially when it comes to the environment. *"...we're only guests on this planet, and like any good guests, don't leave a mess."* [Vancouver]

How Citizens Applied this Value:

a) Decisions must be holistic

Participants expect decisions on this issue to consider all possible implications and ramifications for now and for the longer term. *"... it's coming back to this holistic view. I am really...horrified to think that they went and built these nuclear reactors and started generating all this stuff without having ever seemingly given thought to what they were going to do with the waste. And that's not very holistic. You know, it's sort of 'let's go this far and then we'll figure out the other part when we get to it'.... I just hope that we can avoid that kind of disjointed, fragmented view in the future."* [Ottawa]

Take a life-cycle approach. Participants wanted to treat the management of used nuclear fuel as part of a continuum. Some participants spoke of the 'cradle-to-grave' approach to production and called on those who mine and sell uranium to play a role in the long-term management. *"...the people that are making the money off the uranium I feel should be paying for it....I also feel that you should clean up the mess that you make and I think that the people who are doing the mining - if they are the people that are getting the most income from the sources, then they should be the ones to clean it up.... It should not be up to the public to pay for this stuff, but it should be up to the people that harvest the money from this."* [Saskatoon]

Take a global perspective. Participants called on governments, industry and scientists to actively cooperate with other countries on research to find a better way to manage used fuel for the long term. A number of participants spoke of the need to consider decisions on this issue in the context of the role Canada plays internationally as a supplier of uranium and nuclear technology to other countries. *"I am very concerned at the global level. And what I like even less is that...Canada is the world's main supplier of uranium...we have no integrated energy policies in Canada...we are trying to solve the problem [of nuclear waste]..., there is a lot of work and at the same time we are encouraging the development [of the nuclear industry] around the world. The planet is very small and belongs to us all, and I think that we have taken on a huge responsibility in developing the industry without knowing very much about how to manage the waste. I don't think that's a very good move on the part of Canadians, the Canadian government."* [Translation] [Moncton]

Consider the long-term management of used nuclear fuel in a broader policy context of choosing energy sources for the future. Participants felt that the decision on how best to manage used fuel may be different, depending on how much used fuel will be produced in the future, which led them to consider what our energy sources will be in the future. Some expressed the view that the scope of the dialogue was too narrow to grapple with the all of the issues that must be addressed, and wanted to look at this issue in the context of a broader discussion on energy policy. *"We're just talking about nuclear stuff, but again, it needs to be the broad industry of energy...if we have the information ...with regard to...these are the sources of energy - here's the pros, the cons, the full lifecycle costs, you can then use that in your own decision. That's got to be part of the education."* [Vancouver]

Compare the costs and benefits of different sources of energy. Decisions made about energy production must take into consideration the costs of managing the waste from different energy sources. *"[We need]... education also on alternatives..., what is the real cost or lifecycle of other things because the nuclear power industry is constantly telling us that it's clean power and yet we're focusing on the waste here."* [Vancouver]

b) Reduce the volume of used fuel produced

Citizens saw reducing the volume of used fuel produced as a necessary part of the management approach. They suggested three strategies to achieve this:

1. Reduce energy consumption. *"I am surprised how little I did know about the waste we are producing every year and how much more waste we are producing in the future and I would say, conservation is one of the only ways to reduce because the more we conserve, the less power we use and the less waste we have.... "* [London]

Participants saw a responsibility for themselves as users of energy. They recognized that Canadians use a lot of energy and other natural resources. Many of them left the dialogue articulating a personal commitment to use less. A person from Thunder Bay stated, *"...we are wasteful of energy, we're part of the problem, every time we turn a light switch on.... So it's power consumption, the way we use it is directly linked to nuclear waste."* A young woman from Ottawa said, *"I have to say I'm quite guilty of not really giving this a thought before today. As long as I could plug in my hot rollers I was cool. But now I'm definitely going to look into this and try to start conserving energy because I want to think of my children and my children's children...."*

Government leadership to encourage conservation. Citizens did appreciate that talking about reducing consumption is easier than doing it, and recognized that it is hard to change behaviour. Some participants spoke about the need to pay the true costs of electricity, feeling consumption will not be reduced unless people are 'hit in the pocketbook.' Others were not prepared to commit to paying more for electricity without a better sense of what those costs would really be. Some expressed concerns about the ability of people with lower incomes to pay more.

Participants called on governments to provide leadership to encourage individuals and industry to reduce consumption, including the provision of better information on the real costs of energy, the impacts on the environment and health and ways to conserve. They suggested rewards for those who conserve and penalties for those who use too much. *"...conservation in energy is an admirable goal and it's something that we need to strive for. However, having said that, we can't just shut down plants and then expect the private sector or whoever to catch up, to supply us with our power needs. We're power junkies at this point and we have to wean ourselves. I'm a firm believer that we achieve that with the carrot and not the stick. And I think the government has fallen down miserably in providing incentives to industry and to individuals in adapting and adopting these conservation measures."* [Thunder Bay]

2. Use alternate energy sources. Participants wanted to make greater use of alternative energy sources, especially wind and solar power. They felt that using renewable energy as an increasing part of the energy equation was key to reducing the amount of used fuel produced in the future. *"...there was a strong voice and strong support for exploring alternative power sources. Obviously, we've got 1.7 million bundles already that have to be dealt with in some manner, but there was a very strong voice for exploration of alternate power sources and reducing the amount of bundles that are produced annually...."* [London]. A small number of people called for nuclear energy to be phased out completely. Some wanted to reduce Canada's dependency on nuclear energy if a better way to manage the used fuel cannot be found. As a Montreal participant stated, *"...we would bluntly be for a moratorium on new nuclear plants until such time as a reversible way is found to manage the waste."* [Translation] Most, however, called for decisions to be made based on a comparison of the costs and benefits of all types of energy.

3. Recycle / Reuse: Many participants spoke about the need to find a way to recycle or reuse the used uranium - they saw it as a potential resource for the future. They sought more investment in research to find ways to safely extract more energy from the fuel and to explore ways to reduce the toxicity of the waste. *"Just because it's waste right now...doesn't mean it can't be something else. It's waste right now because we don't have technology. We don't know what to do with it right now so we're just throwing it away. We can probably use it for something else."* [London]

Many people expressed a desire to "neutralize" the radioactivity, to make the used fuel safer to handle. *"If, in the short-term there becomes a reasonable way to neutralize this stuff, it may be quite acceptable to use and be a great source of energy..."* [Halifax]

4. Accountability and Transparency - to rebuild trust

Citizens hold governments, especially the federal government, as ultimately accountable for the public good. They want to have confidence that those entrusted with responsibilities to protect the public interest are doing a good job. They are calling for increased accountability and transparency as a condition to improving their level of trust in governments. They want to be told the truth, and no longer accept that governments "know best".

They want to have confidence that decisions are made in the long-term public interest, not for political expediency or short-term profit. They want to be sure that there are no hidden agendas. They want to play a more active role in decisions that affect the public interest, and are seeking understandable, accessible information to support their increased engagement.

Increasingly, they are looking to independent oversight bodies to monitor government and industry, and to provide reliable information to citizens.

How Citizens Applied this Value:

Citizens repeatedly expressed their lack of trust and confidence in government and industry, both in general and with respect to issues related to nuclear energy. This was a big driver behind their calls for increased transparency and meaningful accountability. One of the Toronto dialogue participants added, *"Accountability and transparency. I've never seen such doubt in our government as I have today. They really need to work on trust - transparency and accountability is the only way to regain that."*

Governments and industry should tell the truth. As another participant in Toronto stated *"...we wanted to be given the facts, we wanted to be given the truth and how do we get the truth about the pros and cons...to make decisions as a public."*

Governments and industry need to be transparent about decisions and ongoing management. Citizens wanted accessible, understandable information so they can hold the government and industry to account for their actions. They also wanted it so they can effectively participate in decisions that affect their safety and security and that of their children. They were not willing to accept simply being told that they are safe, and that decisions are being made on their behalf. They were looking for evidence so they can judge for themselves. Participants called for greater transparency and accountability for decisions made, for financial management and in meeting safety standards. As a participant in Halifax said, *"...the public has the right to know what decisions are being made on what basis...."*

The federal government is responsible to make the final decision. Citizens hold the federal government responsible for ensuring the best decision is taken on a long-term management approach, as guardian of the interests of all Canadians, but they imposed four conditions on this:

- There must be real engagement of experts, citizens, communities and other stakeholders before any decision is made;
- People must be told the truth. There must be greater transparency in decision making and monitoring by both government and industry. They want to know why decisions are made and how they are being implemented. They want to know if standards are being met or not. They want full disclosure of financial and management information;
- They are seeking assurance that decisions will not be made for political expediency or profit; and,
- They hold governments responsible for ensuring safety and security.

Government is accountable for ensuring strong regulations and standards. Participants were clear that they hold governments responsible for protecting their safety and the environment by ensuring that strong regulations and the best standards are in place and enforced. *"...government must continue to enforce safety*

regulations, oversee industry standards and site management. It goes without saying, that's what they're there for - to look after us, and they simply must continue to do that." [Calgary]

Trust requires a non-partisan body, independent from politics and the industry. Citizens demanded an independent body to monitor the government and other key organizations and provide reliable information on whether or not they are meeting their obligations. They expected this body to act as a watchdog, and be comprised of experts from many disciplines of science and other relevant fields as well as having citizen representation. An Ottawa participant described this body in the following way, "...a well funded, independent citizens' watchdog committee. ...they would have the funds that make it possible for them not just to report to a government agency or make a report to parliament, but also to be able to launch public awareness and education programs of their own and raise the issues...the public would be made aware if this watchdog committee was not satisfied that the government agency was doing its job to the best of its ability." [Ottawa]

5. Knowledge - a public good for better decisions now and in the future

Citizens are embracing the information age. Increasingly, they see knowledge as a public good that should be broadly shared. As with other public goods, they see it as something that requires investment to maintain and improve upon. They want investment to create new knowledge and to enhance awareness to make better choices. This value reinforces their call for greater transparency and constructive inclusion in decision making.

How Citizens Applied this Value:

As participants' knowledge of the issues around used nuclear fuel grew over the course of the day, they realized how little awareness most people have of this subject. This surprised them and led them to feel strongly that more deliberate efforts were needed to ensure people were better informed, both now and in the future. A Vancouver participant made the following point: *"If knowledge isn't widespread, the public can't have informed opinions.... The production of nuclear energy is relatively safe, but the problem continues to be the secrecy around this kind of energy...we need to get this information before we can have a meaningful process."*

Improve public awareness and education. They called for accessible, meaningful and reliable information for all Canadians so that they can engage in an informed way to support better decisions and to be better able to hold decision-makers to account. "...we'd like other people to be as concerned as we are and that's why we're pushing this idea of information for the public, because unless public awareness is heightened, there isn't going to be a willingness...to make some sacrifices that may be required, or to get involved...or to support political decisions..." [Ottawa] Participants suggested using multiple sources to deliver this information including the internet, widely available brochures providing periodic status reports, and increased attention by the media.

Invest in education of young people. Citizens wanted to ensure future generations have the capacity - both technical and in their societal institutions to deal with the used fuel. They wanted to make certain that people many years from now would still understand how to manage the used fuel. They called for school curricula to address issues relating to used nuclear fuel and broader energy choices. As stated by a participant from Québec City, it is important to *"...inform the young people ..., think long term ...in 20, 25 years, if we have no experts, if we don't have anyone, if we don't have the institutions needed for training the workforce that can handle these problems, we need to think about informing and training the young people. Therefore, education is important."* [Translation] [Québec City]

Invest to create new knowledge and share it at a global level. Participants stressed that the management approach must include investing in new research to find better ways to manage the used fuel. They wanted Canada to cooperate internationally on research, in order to benefit from the best all countries have to offer.

6. Inclusion - the best decisions reflect broad engagement and many perspectives; we all have a role to play

Inclusion is about having a voice that is heard. This value is closely related to the values of knowledge and transparency. It is about how decisions are made and the role citizens want themselves and others to play in those decisions. Participants feel decisions will be better and more trustworthy if they are informed by as many objective sources as possible.

Their participation in the dialogue gave them an appreciation of the contribution citizens can bring to this issue and they assigned a role for themselves in the decision-making process. Citizens are not seeking to replace experts or stakeholders, nor do they want decisions to be made on their input alone. On the contrary - they expect holistic decisions on complex issues to be well informed by experts from many disciplines. And increasingly, they want to have a voice in public policy decisions - an opportunity to influence decisions - especially those that impact the safety and security of both health and the environment, for themselves and for their children.

How Citizens Applied this Value:

Don't make decisions in isolation or secrecy. Participants believed that better decisions come through involving as many perspectives as possible. *"I believe we have to trust in government to finally make the decision. That's where the buck stops. But what's impressed me today is that all of us have a responsibility to speak up in one way or another to try and make those decisions the best decisions possible."* [Halifax]

Shared responsibility. Participants wanted decisions to be informed by many sources, and called for government to ensure real consultation with citizens, communities, scientists and experts from many disciplines and other

stakeholders before any decision is made. *“...we talked about decision-making and how decisions [should be made] and who should make decisions and we agreed that it should really be a combination of different voices and ideas, so scientists, geologists, and the average citizens make recommendations but ultimately, it's the federal government that makes the decision with the understanding that the federal government is voted in by the public.”* [Toronto]

Participation in the dialogue reinforced citizens' appreciation for the contribution they have to make to these kinds of decisions. They wanted others to have the opportunity to experience what they had just gone through, and sent a loud call to be involved in an ongoing way. *“...one of the things that we gleaned from all of this is that the people are interested, and that people, even though...they may start out not being educated, that that's something that can be dealt with... I really sincerely hope consultations with the public continue permanently. And as we're going to be stuck with this problem for a while, that the input of the public is something that is kept going permanently.”* [Vancouver]

To illustrate shared responsibility, they set out the following roles for different parties involved, including themselves, not only for making decisions, but for contributing in an ongoing way to the management of used fuel over the long-term:

- Consumers are responsible for reducing consumption and contributing to costs through electricity fees;
- Energy producers and related industries are responsible for contributing to the trust fund; investing in research for new technologies including alternate energy sources, sharing knowledge; supporting education and transparency;
- Scientists and other experts are responsible for providing independent advice, monitoring, reliable information, a contribution to research, cooperation on a global level and support capacity development for future generations;
- Citizens, including those living in affected communities, are responsible for becoming informed and engaged, and holding governments and industry to account with the help of an independent watchdog; and,
- Governments are responsible for listening, acting for the long-term public interest, ensuring safety and security, monitoring, being transparent, and providing leadership for sound stewardship.

Communities most affected have a special role. To help communities most affected to understand all the implications of hosting a used fuel facility, participants recommended they have access to expert advice and knowledge. They also felt these communities should play a significant role in decision making and in the ongoing management. Many expressed doubt that any community would voluntarily agree to host a used fuel facility, although some thought that there would be volunteers if safety were assured and incentives or compensation were offered. However, if no community volunteered in the end, citizens looked

to the federal government to make the decision in the public interest, subject to the conditions outlined above.

Chapter 6 Citizens' Advice on the Way Forward

While each of the twelve sessions was unique, many common themes did emerge across the dialogue. This chapter describes the core advice from dialogue participants - the characteristics they would most like to see in a long-term management approach to used nuclear fuel. This is drawn from all the data sources, but principally the common ground: the scenario the groups identified over the course of the 12 dialogues. The rest of this chapter presents a summary of the qualitative and quantitative data sources gathered over the course of the day, and offers insight into how citizens' thinking evolved.

As people talked with each other and heard various perspectives, they worked through the issues, considering what was most important to them and what tradeoffs they would be willing to make. In each session, they identified the characteristics that, as a group, they agreed they wanted to be reflected in a long-term management approach. In finding their common ground, they assessed what they liked and didn't like from the scenarios presented to them, combining some elements and adding others. In effect, they created another scenario, which covers far more ground than the four scenarios set out in the workbook. The elements that appear in the scenario below were part of common ground in at least seven of the twelve dialogue sessions.

The Citizens' Scenario: Desirable characteristics for a long-term management approach

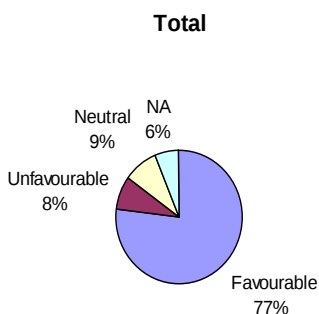
- i. First and foremost, human health and the environment must be as safe as possible from harm, now and for the future.
- ii. We need to accept responsibility as the creators of the used fuel and users of the energy and use our knowledge today to put in place a management approach for the long term. It must be flexible enough to adapt to new knowledge as it becomes available.
- iii. Recognizing that we don't have all the answers today, we need to deliberately invest in more research and expand global cooperation on research into better ways to manage the used fuel.
- iv. We need to take concrete steps now to ensure future generations have the knowledge and capacity to continue to address this issue.
- v. Future generations must be able to access the used fuel to apply better technology and manage the used fuel more safely and efficiently.
- vi. In the meantime, we need to reduce the amount of used fuel that we create, by conserving energy use, by assessing the costs and benefits of all types of energy, and increasing our use of alternative sources of energy such as wind and solar power.
- vii. There is a shared responsibility for making decisions between governments, experts for many disciplines, citizens and stakeholders.

- viii. Communities most affected should have a greater role and should be given support to ensure they have access to expert knowledge and resources if required.
- ix. Government is responsible and accountable in the end to ensure decisions are made in the broad public interest.
- x. To support the best decisions possible, there is a need for greater transparency of information about health and safety regulations, financial management and new research.
- xi. An independent body with expert and citizen representation monitors government and industry and provides reliable information to the public on the management of used nuclear fuel.

These conclusions were reached consistently across the dialogue sessions. In their final ratings, 77% of citizens across the 12 dialogue sessions supported the fifth scenario they had developed together, as set out in the list above. Appendix V provides a summary table of the common ground analysis.

There is one difference worth noting. While there was discussion in all of the dialogues about the need to conserve energy, only the participants in Ontario, Quebec and New Brunswick - the three provinces using nuclear energy and producing used fuel - put this point into their common ground as one of their desired characteristics of the long-term management approach. While it is difficult to say exactly what is behind this difference, it is possible that people living in those provinces that are producing used fuel feel more of a responsibility to take direct action to reduce the volume of used fuel produced by reducing their consumption of energy. It should also be noted that there was considerable media attention to energy supply and management issues in all three provinces during the period in which the dialogues took place.

Scenario 5 - Rating their own scenario for the long-term management of used nuclear fuel *



* Favourable scores include responses of 5, 6 and 7 on a scale of 1 to 7. Responses of 4 are considered neutral and 1, 2, and 3 are unfavourable.

Source: Participant Scenario Ratings tabulated by EKOS Research Associates

How Citizens' Thinking Evolved Through Dialogue

The analysis and comparison of the different data sources offers insight into how citizens' thinking evolved as they learned more about the issue of used nuclear fuel, and were confronted with some of the challenges in dealing with it over the long term.

Opening Comments

As citizens introduced themselves in the morning, they were asked to identify what interested or concerned them most about the long-term management of used nuclear fuel. Forty-five percent expressed a general concern for the environment, health and safety, future generations, security from terrorism / fear and uncertainty. Others spoke of the need for more research so future generations will have a better way to manage; their desire to use safe, renewable, cost-effective forms of energy; and their appreciation at being asked to participate in the dialogue.

In Their Own Words

"I acknowledge that electricity has a very important part in daily life in today's world. However, I say that we have to think about safety to maintain the quality and richness of our water, and of our soil. We are a tremendously rich country, we are a huge country, but that is no reason why we should contaminate the beautiful soil and the water. As responsible individuals, we have the duty to protect future generations who will follow us. It's the future of society." [Translation] [Québec City]

"The main reason I'm here today, my concern is for my grandchildren and their children possibly and what I'd like to get from this meeting at the end of the day is some assurance that their safety will not be compromised by the nuclear fuel that we have a problem with." [Toronto]

"I have to say that what we're talking about today is the sort of things I've always hoped someone else was looking after very well. I find the combination of trying to make plans for something for thousands of years at a time when the world seems so unstable is a bit frightening." [Ottawa]

"...when I think about nuclear energy, I think about Chernobyl and September 11... Is there anyone who could possibly use it against us?" [Translation] [Moncton]

"...I do think it's arrogant of us today as a society to think that we have all of the scientific answers... who knows? Transmutation may be a possible answer, so I think that storage would probably be a better thing than just getting rid of it altogether." [London]

A summary of the themes most frequently expressed by participants in their opening comments can be found in Appendix VIII.

Interpreting Citizens' Choices

As described in chapters 2 and 3, citizens were asked to rate the four scenarios that were presented to them in the workbook - both at the beginning of the day, and again at the end. At the end of the day, they were also asked to record any conditions they would apply to their rating. Over 75% of the participants wrote at least one condition, indicating strong engagement on their part.

The question posed on the rating form was as follows: *"Please indicate how favourable or unfavourable you feel towards each scenario on a scale of 1 to 7. (1= totally unfavourable, 7 = totally favourable). Circle the number that most closely reflects your view."* The afternoon question added the following instruction: *"If your viewpoint is based on a condition (e.g. I rate this approach at this level only if it also includes _____ or does not include _____), please indicate that condition immediately below your rating."*

By comparing the ratings participants gave on the pre and post questionnaires and the conditions they imposed at the end of the day, we can see how citizens' views changed over the course of the day. It is important to note that the scenarios were not presented as mutually exclusive. Citizens were not asked to choose between the scenarios in each set, but rather rate them on their own merit. For example, citizens' ratings for both scenarios 1 and 2 increased over the course of the day. This is because their end of day rating was given with conditions. The conditions and ratings together show how Canadians combined scenarios 1 and 2 (use the knowledge we have today and leave options for future generations) and scenarios 3 and 4 (the role of governments and the role of communities and civil society) and drew in other conditions as well. These data sources strongly reinforce the scenario that citizens created themselves in their common ground.

How Citizens' Views Changed

There were two distinct shifts over the day, both of which reflect the way citizens combined elements from the scenarios:

1. In the beginning, most people were not convinced of the need to act now based on current knowledge, but their sense of the need to take action grew over the day as they thought through the consequences for future generations.
2. Early in the day, their mistrust of government created some opposition to emphasizing the role of government in decision making. But this also changed over the day for two reasons:
 - They concluded that government has to make the final decision, because it is the institution charged with protecting public interest; and,

- They put caveats on the government's role by insisting on transparency, accountability, and independent third party oversight. They also insisted on more inclusive decision making.

More information is provided on each of these shifts below. Unless otherwise noted, there was no statistically significant difference in these ratings across the dialogues or by demographic characteristics. Pie charts providing more detail on the pre and post ratings are provided in Appendix VI. Tables showing the most common themes in the conditions are provided in Appendix VII.

Intergenerational Rights and Responsibilities

The most statistically significant shift in participants' thinking over the course of the day was on the first scenario. As the dialogue progressed and participants better understood the issues around used nuclear fuel, they became convinced that this generation has a significant responsibility. By the end of the dialogue, 66% of people were in favour of using the knowledge we have today, versus 43% at the beginning of the day. At the same time, their support for scenario 2 remained high at 69%. They wanted action today to be flexible enough to provide future generations with options to adapt.¹⁵

Scenario One Conditions – Emphasize using the knowledge we have today

Conditions that participants attached to their post-questionnaire support for taking action today are outlined below, in rank order:

- Citizens want to ensure that by acting today, adaptability and flexibility is integrated into the management approach for used nuclear fuel so that future generations will be able to access the used fuel and apply better technologies if they are found. In the words of one participant from Vancouver, *"We need to take responsibility and begin to act now but not make irreversible decisions."*
- In order to find these better technologies for the future, citizens stipulated that deliberate investments need to be made in research.
- Knowledge and education were identified as a significant area in need of further focus. A participant from the Sudbury dialogue noted the condition that, *"There is more education at all levels and continued research into alternatives as technology progresses."*

¹⁵ At the beginning of the day, men were more likely than women to favour using the knowledge we have today (49% of men and 34% of women). However, by the end of the day, there was no significant difference (69% of men and 64% of women). In the final questionnaire people under 35 years of age were more likely to be favourable toward emphasizing choice for future generations (77%) than those over 55 years of age (61%), though both groups became more favourable toward this scenario.

- Safety and security of people and environments have to be ensured in the meantime through careful monitoring until a longer-term solution is decided upon.

Scenario Two Conditions – Emphasize choice for future generations

The conditions citizens attached to scenario 2 are similar to those citizens added to their scenario 1 ratings, illustrating how citizens combined these two scenarios. The conditions are listed below in rank order:

- In keeping with their thinking from the previous scenario, citizens emphasized the need for research to continue in order to provide future generations with better technology for managing the used nuclear fuel. A participant from Calgary wrote, *"Choice for future generations is good because technology keeps on developing new research and improvements."*
- Citizens indicated that even if choice is emphasized for future generations, this generation still needs to take responsibility now to the extent possible. A citizen from the London dialogue commented, *"We take as much responsibility (invest) as possible now to build that future – not just dump our problem."*
- Similar to their conditions under the first scenario, citizens emphasized education and information for the public. In the words of one of the Moncton participants, *"The next generation to be better informed and educated."*
[Translation]

Ensuring Confidence and Trust

The shifts around scenarios 3 and 4 are smaller but also significant. For scenario 3, 12% of participants moved from being unfavourable at the beginning of the day to being neutral or favourable (67%) by the end of the day. The level of support for the role of affected communities and civil society remained the highest of the four scenarios at 72%, but had dropped somewhat from the 76% at the beginning of the day, as people came to believe that in the end, government must make the final choice. They called on the government to fulfill its role as guardian of the public good, on the condition that citizens have a voice and that transparency and accountability are strengthened.¹⁶ Specific conditions for both scenarios are outlined below.

¹⁶ At the beginning of the day, 68% of the male participants favoured emphasizing the role of governments compared to 55% of the female participants. By the end of the day, this difference had virtually disappeared (69% of men and 67% of women). Those with a college education were somewhat more unfavourable toward the role of government (18%) than the participant average (14%). Participants with a high school education were more favourable to emphasizing the role of affected communities and civil society (82%) than those with a university education (63%).

Scenario Three Conditions – Emphasize the role of governments

Citizens were willing to increase their level of support for government to make decisions as long as their conditions were fulfilled. The conditions are listed below in rank-order:

- Shared responsibility: citizens were concerned that before government makes any final decisions, there should be real input from a broad variety of actors including citizens, communities, affected communities, scientists and experts from many fields, as well as government. They also stipulated that it is the role of government to ensure consultation and to integrate this input into decisions. A Montreal participant wrote, *"They give citizens the chance to take part in the decision-making and deal with the consequences of their decisions."* [Translation] Information has to be provided to citizens that is meaningful, reliable, transparent, honest and accessible about what government is doing and why. A participant from Calgary wrote, *"They are above board, honest, and keep the public informed."* Another participant in Toronto commented, *"The process is transparent and the results are reported on a regular basis."*
- Citizens referred to the need for an independent watchdog to monitor the government. In the words of one participant from Vancouver, *"Independent body oversees management and that this body actually have 'legislative teeth'."*
- Participants wanted to ensure that decisions taken by the government are made in the best interests of the public, not for political expediency or to serve personal agendas. A Thunder Bay participant wrote, *"Responsibility is taken, proper authority is given; accountability is defined and decisions are not politically expedient."*

Scenario Four Conditions – Emphasize the role of affected communities and civil society

Conditions for the fourth scenario are listed in rank order below:

- In order for civil society and affected communities to play a role, citizens felt it important that they should be informed and educated about this issue. A citizen from Saskatoon noted that, *"They are educated properly and not talking from fear."* In Toronto, a participant wrote, *"They be given proper information to reach informed conclusions."*
- Citizens also stipulated that the input of civil society and affected communities should have real influence on the process. A participant from Calgary wrote, *"[They are] given a real voice to shape government policy"* and one of the dialogue participants from London commented, *"Their input is taken seriously."*
- A condition that participants placed on emphasizing the role of affected communities and civil society was that it is the role of the government to take the final decision. A participant in Moncton commented, *"But we still*

need a government to take the final decision.” [Translation] A Montreal citizen wrote that, “The government is able to decide.” [Translation]

Closing Comments

Citizens were invited to close the day by sharing their most surprising learning from the dialogue and offering key advice to decision makers. The most common theme was their appreciation for having the opportunity to participate in the dialogue and learn about this issue (22.5%). They started the day with little knowledge of this complex, technical issue - some of them wondering what they had to offer. They left the session feeling positive about their participation and felt they had made a contribution to finding a way forward on this issue.

The next most common theme was their surprise at both their own lack of awareness of the extent of the problem and the fact that the decision was made 30 years ago to use nuclear power without a long-term solution to managing the used fuel (18.5%).

The third most-often cited closing comment cited by participants was their desire to reduce the volume of waste through a variety of mechanisms such as research into finding better ways to manage the used fuel, conserving energy and using alternative energy sources (17%).

Other themes raised by participants included the importance of broad consultation before decisions are made. They reinforced their call for ongoing citizen participation in making decisions around the long-term management of used fuel and in ongoing monitoring and wanted their input to be reflected in decisions. Directly related to this, they also reinforced the need for better public education and information.

Ontario residents were more likely to speak about the need to reduce the volume of used fuel produced and the need for decision makers to listen to citizen input. This is consistent with the difference found in the common ground analysis, where Ontario participants were more specific about the need to reduce energy consumption. As noted earlier, there was considerable media attention to energy supply and management issues in Ontario, Quebec and New Brunswick during the periods in which the citizens' dialogue took place.

Participants in the rest of Canada were more likely to express their surprise at the extent of the problem. It is likely that people in Ontario are somewhat more aware of the issues involved in used nuclear fuel because nuclear energy is such a significant power source in the province compared to the rest of the country.

In Their Own Words

"It was good to see the opinions of different generations on an issue that concerns all of us... as a message, well I think that the greatest fears are due to lack of information. That means stop lying to us and tell the public the truth." [Translation] [Montreal]

"...I think we should all be glad that we're leaving here today ... more knowledgeable in this... it's important to continue these dialogues, to further public knowledge so that we can make actual educated decisions and choices...." [Vancouver]

"When I was driving here this morning, I had a pre-conceived notion that this was going to be a very dry, drawn-out day, and what I found surprising is that it wasn't dry and drawn-out, it was rather interesting and thought-provoking... I guess... the dialogue that we had...got me to sort of accept nuclear power a little easier – it's not the boogeyman in my closet as it used to be. And the one thing I'd say to the people who are making the decisions, use the technology we have now and improve on the technology we're going to create, but do it now." [Toronto]

"I've been really impressed today by...how articulate this group has been in expressing their opinions. A random sample of citizens expressing their sort of insightful opinions about this pretty complex issue makes me feel that there is hope for the future and that the decision makers should not take Canadians for granted." [Ottawa]

"I was pleasantly surprised with the interest and the passion and the persuasiveness of the participants, so I really have to hand it to the participants, really well done, and the Government should be prepared to act on an answer that they might not be prepared for. I think a lot of people are under the impression that here's the answer and justify the answer for us but I'm thinking that we're not giving that to the Government." [Sudbury]

"My greatest insight is that...the government has failed to act and be responsible. The lack of a long-term plan for this resource, it really makes me mad." [Calgary]

"I am surprised how little I did know about the waste we are producing every year and how much more waste we are producing in the future and I would say conservation is one of the only ways to reduce, because the more we conserve, the less power we use and the less waste we have. And for the government, I would say education is one of the most important things, so we know the danger if we don't look after the waste properly." [London]

"...I learned...that...the decisions which seem obvious are not so easy as that...today more than ever, it is important to inform and above all consult citizens...." [Translation] [Moncton]

"My confidence in the sector is slightly enhanced as a result of being here today. And to decision-makers, I urge them to continue to be more accountable and to provide enhanced disclosure to all interested publics. And finally, I thought that the process was beneficial to all of us." [Halifax]

"...I've really had a good education today. Perhaps this is the kind of education –even just showing this on television might be an educational route for everybody. And I too would like to see the decisions made based upon, as we said before, some strong environmental and scientific and social facts rather than political expediency." [Thunder Bay]

Appendix VIII provides a summary of the themes most frequently expressed by participants in their closing comments.

Chapter 7 Implications from the Dialogue for the Way Forward

This dialogue provides a number of lessons for public policy – many touch on the management of used nuclear fuel, but others have wider repercussions for decision-making.

Implications from the Dialogue for the Management of Used Nuclear Fuel

The participants recruited for this dialogue, representative of the Canadian public, were taken aback by their lack of knowledge and awareness of the challenges presented by the management of used fuel. As they came to understand the length of time society has used nuclear technology, and the complexity of the issues, they expressed anger and frustration at their lack of awareness and felt that both government and industry have kept information on nuclear related issues too secret. How, they argued, can society manage these issues for centuries to come, if nobody knows what is going on?

Thus, they made a strong recommendation that both the industry and the government agencies responsible become far more transparent and effective in their ongoing communications with the public. In this day and age, the only way to gain and sustain public confidence (and willingness to pay the long-term costs) is to keep them informed. Their call for an independent watchdog with both expert and citizen representation requires decision makers to revisit the mandates of existing bodies in this field and to determine how best to meet citizens' expectations in this area, keeping in mind the need for these bodies to have a very public face.

Once again, the lack of confidence in public institutions has coloured this dialogue. Canadians have a strong sense that industry and government are not telling them the whole truth, both generally and on issues related to nuclear energy. They wish to be treated as adults, they wish to be informed on an ongoing basis, and to have a voice in major policy choices – to have a chance to think things through and to know that their views have been considered. Thus, their prescription for the way decisions on the management of used fuel should be made in future are founded on principles of public involvement, even though they acknowledge and expect that, if no communities volunteer, the final choice will be made by the federal government, acting on behalf of all Canadians. Canadians chose transparency and inclusive, informed decision making as the approach that would give them the most confidence.

Participants conclusions' offer a strong endorsement of the approach NWMO is taking to engaging experts, stakeholder groups and citizens and they called for this approach to be embedded in future decision making. In the evaluation of the dialogue completed at the end of the day, 89% of participants indicated that the

dialogue was worthwhile to them and 92% said they would participate in another citizens' dialogue. Additionally, 161 citizens asked to receive ongoing information on this subject from the NWMO. Others had already added the NWMO Web site to computer bookmarks. Many spoke of their intent to share what they have learned with their families and friends. They valued the opportunity to engage and want ongoing citizen participation.

Both the dialogue participants and the NWMO have made a substantial investment in beginning to build a relationship. As the NWMO moves to its next stage in assessing the different management approaches and developing a recommendation for government consideration, it is important to reflect on how best to continue this relationship over time.

And, finally for used nuclear fuel, the industry faces a difficult challenge in responding to the instinctive Canadian response about how to manage any waste product. The principle of reduce, recycle, reuse is deeply embedded in their psyche. Therefore, participants insisted that the industry and government invest heavily in research to find better ways to reduce, recycle or reuse. In summary, their conservation instincts held strong.

Broader Implications for Public Policy

This deep commitment to conservation has a much broader implication for public policy. (The same conclusions were reached by the citizens participating in the Citizens' Dialogue on the Ontario Budget Strategy.¹⁷) Canadians know they consume a lot of energy, and feel they should use less. At the same time, they recognize behaviour is difficult to change. They are looking for a long-term energy policy solution which does not exacerbate the problems posed by nuclear and carbon-based energy sources. They called for a discussion on the costs and benefits of all energy sources, including the cost of managing energy waste. Indeed, many participants would have liked to get it started as the dialogue on used fuel unfolded. They know that current patterns of energy use are not sustainable. They know that behaviour needs to change and that society needs to change, but they do not see the logical pathway forward. They are looking to governments for leadership in facilitating this conversation on energy policy.

Related to the commitment to conservation is the desire by citizens to deal with public policy issues in a holistic and integrated way. They want important decisions to be made with due consideration given to comparing costs and benefits and impacts on other issues. And they want decisions to reflect the long-term nature of possible consequences, and not be made for short-term expediency.

¹⁷ Nolté, Judith, Judith Maxwell and Mary Pat MacKinnon. April 2004. *Trust and Balance: Citizens' Dialogue on the Ontario Budget Strategy, 2004-2008*. CPRN Research Report P | 03. Ottawa: Canadian Policy Research Networks.

A second implication for public policy is the clear need for decisions on the use of new technologies to reflect Canadian values. As with used nuclear fuel, many complex, technical issues, such as new reproductive technologies or the use of new genetic information for health care, raise deep ethical challenges and choices. These decisions are big in terms of potential costs and benefits for society and in their long-term consequences for the health and well-being of the human race for generations to come. Such decisions demand the very best technical and scientific advice, but they also require an understanding of what citizens most value, to help set the boundaries of risks and consequences that they are prepared to take themselves and impose on their children and grandchildren.

Past decision-making on such issues has been narrowly based, involving ministers, their advisors, the scientific experts, and the key stakeholders in industry. In recent years, consultations in the form of public hearings have been added to the mix. But in future, governments will have to insist on more public involvement, giving the unaffiliated citizens – the ones who do not show up at public hearings – an opportunity to reflect on the values that should frame the decisions made by the experts and other responsible actors. One effective way to do this is through an engagement process like the Citizens' Dialogue, a citizen's jury or another deliberative process.

A final and related public policy implication is the transparency question. Neither industry nor government should risk catching their customers or citizens by surprise. In the case of used nuclear fuel, people were frustrated by their own lack of knowledge. They know they have a responsibility to read and listen, but this is made more difficult when the information provided is not meaningful and available in an accessible format. Then there is the question of the reliability of the information. Citizens are hesitant to trust information from government and industry. In the absence of trust, they are increasingly calling for independent oversight bodies, to monitor governments and provide reliable information.¹⁸

And while receiving information helps, one-way, passive communication is not enough. Citizens must be given a legitimate and active role supported by effective mechanisms to feed their voices back into decision making. It is through providing opportunity for people with diverse views to come together, to learn from each other and find areas of agreement, that we understand what society values, and decisions gain legitimacy and sustainability.

In short, Canada is blessed with a citizenry that understands its responsibility to be informed and to participate. What governments and public institutions need to do now is to provide ongoing meaningful opportunities for Canadians to exercise their responsibility.

¹⁸ In the Ontario budget dialogue, citizens insisted on the need for an independent audit of the size of the government deficit before they are asked to vote.

Appendices

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Appendix I – Dialogue Methodology

The underlying premise of CPRN's citizens' dialogues is that 'ordinary' citizens, when given the tools and opportunity for meaningful and respectful learning and deliberation on important public issues, can usually find common ground (i.e. they can find areas of agreement on fundamental values-based choices and are able to move beyond their differences). This does not mean that there is 100% unanimity but there is substantial consensus on the value basis for policy directions. While differences are neither suppressed nor ignored, there is a deliberate choice to build on the common ground.

CPRN's citizen dialogue methodology has evolved over time and has benefited from its collaboration with Viewpoint Learning Inc. (ChoiceWork Dialogue). CPRN methodology is designed to give decision makers a deeper understanding of citizens' value-based policy choices and to discern the future direction of people's preferences on important issues.

CPRN Citizens' Dialogues Chronology

- i. Frame the issue to be explored by citizens. This is done in collaboration with the partners/funders.
- ii. Undertake research to better understand the historical, theoretical and practical dimensions of the issue and/or to obtain a baseline view of public opinion on the issue (usually existing polls, sometimes new polling).
- iii. Prepare a participant workbook, which includes facts and data, plausible scenarios or approaches that reflect different societal views, arguments for and against the scenarios/approaches and other tailored information. Recruit professional facilitators to conduct the dialogue sessions and to collaborate on the dialogue process.
- iv. Recruit a random sample of participants to achieve as representative a group as possible— a professional polling firm does this. Typically up to 55 participants are recruited for each session and about 40 attend (the target number for each dialogue session).
- v. Hold a series of one-day dialogue sessions (ranging from 6 to 12 depending on whether it is a provincial or national project).
 - A typical dialogue session includes both plenary and small group deliberations, and individual and group reflection.
 - Participants are also invited to complete a pre-dialogue questionnaire that asks them to rate the scenarios/approaches, and are then asked to complete it again at the end of the day, this time adding any conditions that they wish to include. The questionnaire also includes an evaluation of the process and the workbook.
 - Each participant gives opening comments to share their biggest concerns and closing comments centered on their key message to decision makers.
 - Plenary sessions are videotaped and transcripts are prepared.
- vi. Analyze qualitative and quantitative data (questionnaire tabulations and conditions, opening and closing statements, plenary consensus points).
- vii. Dissemination of report to participants, decision-makers, media and the public. The report and workbook are available on the CPRN Web site. A video of the dialogue is usually prepared to complement the report.

Appendix II – Debate vs. Dialogue

Debate vs. Dialogue

<u>Debate</u>	<u>Dialogue</u>
Assuming that there is one right answer (and you have it)	Assuming that others have pieces of the answer
Combative: attempting to prove the other side wrong	Collaborative: attempting to find common understanding
About winning	About finding common ground
Listening to find flaws	Listening to understand
Defending your assumptions	Bringing up your assumptions for inspection and discussion
Criticizing the other side's point of view	Re-examining all points of view
Defending one's views against others	Admitting that others' thinking can improve one's own
Searching for weaknesses and flaws in the other position	Searching for strengths and value in the other position
Seeking an outcome that agrees with your position	Discovering new possibilities and opportunities

Dialogue is a special kind of conversation that draws on a diversity of points of view to develop insight and build common ground.

Appendix III – Participant Demographics

Comparison of Participants to Canadian Population by Age

Age	Dialogue Participants %	Total Population %
Under 25	12.3%	12%
25-34	18%	18%
35-44	21.6%	21%
45-54	17.1%	19%
55-64	18.3%	13%
65+	12.1%	17%

Source: Participant demographic data: EKOS Research Associates; Total population demographic data: 2001 Census, Statistics Canada

Comparison of Participants to Canadian Population by Education

Level of Education	Dialogue Participants % (ages 18-65+)	Total Population % (ages 25-64)
Without high school graduation	5.9	22.7
High school graduation	27.0	23.9
Trade certificate or diploma	1.5	12.9
College / CEGEP	20.5	17.9
University	32.0	22.6
Other (some college, professional certificate)	12.0	n/a

Source: Participant demographic data: EKOS Research Associates; Total population demographic data: 2001 Census, Statistics Canada

Comparison of Participants to Canadian Population by Gender

Gender	Dialogue Participants %	Total Population %
Men	56.9	49
Women	43.1	51

Source: Participant demographic data: EKOS Research Associates; Total population demographic data: 2001 Census, Statistics Canada

Comparison of Participants to Canadian Population by Income

Income	Dialogue Participants %	Total Population %
< \$20,000	13	19
\$20,000 - \$39,999	22	24
\$40,000 - \$59,999	20	20
\$60,000 - \$79,999	16	15
\$80,000 - \$99,999	6	9
\$100,000 or more	8	13
DK/NR	15	0

Source: Participant demographic data: EKOS Research Associates; Total population demographic data: 2001 Census, Statistics Canada

Comparison of Participants to Canadian Population by Specific Indicator

Specific Indicator	Dialogue Participants %	Total Population %
Aboriginal	3	4
Visible Minority	10	13
Disabled	6	5
Rural	10	22

Source: Participant demographic data: EKOS Research Associates; Total population demographic data: 2001 Census, Statistics Canada

Appendix IV – Attitudinal Data

Level of support / Opposition to Nuclear Energy %

	Ontario dialogue participants	All dialogue participants	People called for dialogue	National poll, November 2003
Strongly support	21.9	16.9	16.0	15
Somewhat support	43.2	38.7	21.0	33
Somewhat oppose	15.1	18.6	37.5	20
Strongly oppose	13.5	18.0	12.1	28
DK/NA	6.3	7.8	13.4	5

Source: Participant attitudinal data: EKOS Research Associates; Canadian population attitudinal polling data: Ipsos-Reid, November 2003

Level of Confidence in Management of Used Nuclear Fuel %

	Ontario dialogue participants	All dialogue participants	People called for dialogue	National poll, November 2003
Not at all confident	15.6	18.0	18.5	26
Not very confident	29.2	18.6	29.5	28
Somewhat confident	41.1	38.7	33.7	33
Very confident	7.3	16.9	6.4	8
DK/NA	6.8	7.8	12.0	5

Source: Participant attitudinal data: EKOS Research Associates; Canadian population attitudinal polling data: Ipsos-Reid, November 2003

Appendix V – Common Ground Across Dialogues

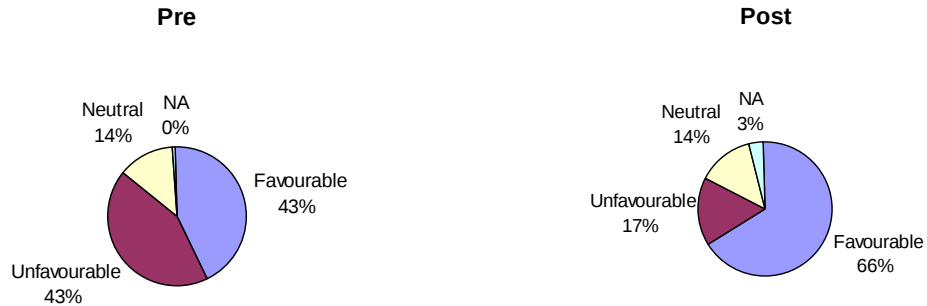
Citizens' Common Ground

Theme	Total # of sessions 12
This generation's responsibility to act now, take responsibility for the used fuel we generate	12
Ensure flexibility/ accessibility to the used fuel for future generations to adjust for new knowledge	12
Adaptability – periodic assessment and adjustment to take account of new knowledge	8
Invest in research for:	
- new technologies to find a better way to manage the waste	12
- reduce volume of waste by exploiting alternative energy sources to reduce dependency on nuclear / compare costs/benefits	10
- reduce volume of waste by finding a way to use the fuel more efficiently (reuse/recycle)	7
Improve public awareness and education for better decisions now and in the future	12
Shared responsibility for decision making - government to make decisions after consultation with citizens, scientist, other experts	12
Independent non partisan oversight/ watchdog: multi-disciplinary, competence from many fields, provide reliable information, citizens have a role	12
Safety of health/ environment is paramount	10
Security from threats	8
Greater transparency / accountability (need for more credible, understandable information i.e. on costs, management approach, decisions, safety)	9
Global cooperation on research	8
Conserve energy/ reduce consumption to reduce volume of waste	8
Affected communities have more say	8

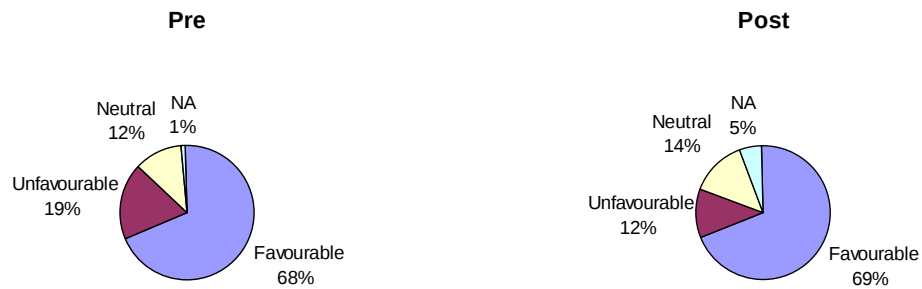
Source: Dialogue flip charts and transcripts, Citizen's Dialogue on the Long-term Management of Used Nuclear Fuel in Canada, 2004

Appendix VI – Scenario Ratings

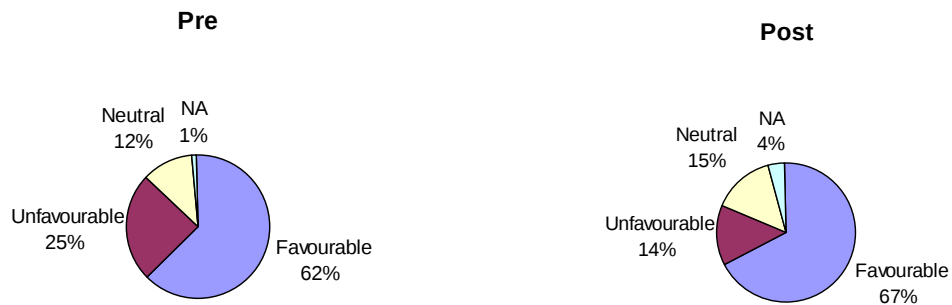
Scenario 1: Use the knowledge we have today*



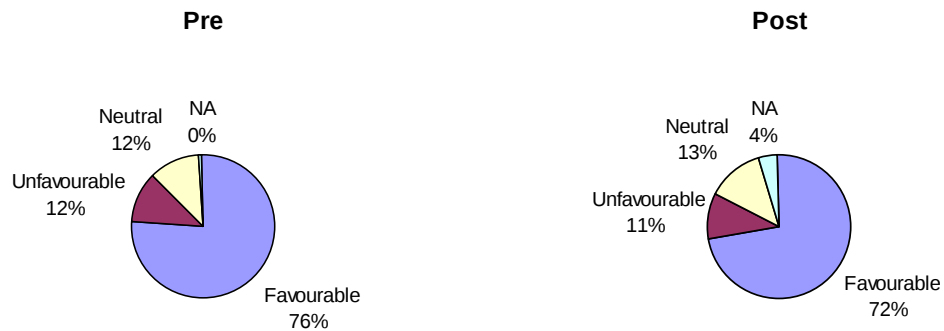
Scenario 2: Choice for future generations*



Scenario 3: Role of governments*



Scenario 4: Role of affected communities and civil society*



* Favourable scores include responses of 5, 6 and 7 on a scale of 1 to 7. Responses of 4 are considered neutral and 1, 2, and 3 are unfavourable.

Source: Participant Scenario Ratings tabulated by EKOS Research Associates

Appendix VII – Ranking of Participants' Top Conditions by Theme

Scenario 1 – Take action today on the condition that:

Theme	Ontario	ROC	Total
Ensure flexibility/ accessibility for future generations/ leave room for better technology	72 (40%)	72 (34%)	144 (37%)
Deliberate investment in new technology/ research	60 (33%)	67 (32%)	127 (33%)
Knowledge / education of public	10 (5.5%)	17 (8%)	27 (7%)
Safety /security (of people, environments) ensured in meantime / careful monitoring	9 (5%)	13 (6%)	22 (6%)
Start process now/ decision now with no harm to future generations	7 (4%)	6 (3%)	13 (3%)
Accountability / watchdog	6 (3%)	6 (3%)	12 (3%)
Current generation responsible to find long term solution/ do best we can with current technology	3 (2%)	7 (3%)	10 (2.5%)
Other Conditions	13 (7%)	22 (10%)	35 (9%)
Total Conditions	180 (99.5%)	210 (99%)	390 (100.5%)
Please note that not all totals add up to 100% due to rounding of numbers. Source: Participant Questionnaires, Citizens' Dialogue on the Long-term Management of Used Nuclear Fuel in Canada, 2004			

Scenario 2 – Leave options open for future generations on the condition that:

Theme	Ontario	ROC	Total
Continue research	37 (37%)	59 (39%)	96 (38%)
Take responsibility now	35 (35%)	59 (39%)	94 (37%)
Education/ information for public	13 (13%)	16 (10%)	29 (11%)
Other Conditions	16 (16%)	19 (12%)	35 (14%)
Total Conditions	101 (101%)	153 (100%)	254 (100%)
Please note that not all totals add up to 100% due to rounding of numbers. Source: Participant Questionnaires, Citizens' Dialogue on the Long-term Management of Used Nuclear Fuel in Canada, 2004			

Scenario 3 – Government should make the decision on the condition that:

Theme	Ontario	ROC	Total
Shared Responsibility	58 (42%)	86 (51%)	144 (47%)
Citizens/ communities have say	31 (22%)	60 (36%)	91 (30%)
Affected communities have say	5	7	12
Govt., scientists, citizens/ broad involvement	15	11	26
Govt. to ensure consultation/ balanced say/ input incorporated	7	8	15
Transparent, reliable, accessible, honest, information provided to citizens on what they are doing and why	26 (19%)	26 (15%)	52 (17%)
Independent watchdog monitoring the government	24 (17%)	26 (15%)	50 (16%)
Government accountable to public/ not serving personal agendas / decisions not politically expedient	6 (4%)	10 (6%)	16 (5%)
Other Conditions	24 (17%)	20 (12%)	44 (14%)
Total Conditions	138 (99%)	168 (99%)	306 (99%)
Please note that not all totals add up to 100% due to rounding of numbers. Source: Participant Questionnaires, Citizens' Dialogue on the Long-term Management of Used Nuclear Fuel in Canada, 2004			

Scenario 4 – Civil society/affected communities should play a role on the condition that:

Theme	Ontario	ROC	Total
They are informed/understand/ are educated about this issue/ to make informed choices	29 (34%)	45 (34%)	74 (34%)
Civil society/affected communities have a say/ have influence	13 (15%)	21 (16%)	34 (16%)
Government has final say	10 (12%)	16 (12%)	26 (12%)
Watchdog/ citizen involvement/ no vested interest/ independent agency to recommend to govt.	6 (7%)	8 (6%)	14 (6%)
Other Conditions	27 (32%)	42 (32%)	69 (32%)
Total Conditions	85 (100%)	132 (100%)	217 (100%)
Please note that not all totals add up to 100% due to rounding of numbers. Source: Participant Questionnaires, Citizens' Dialogue on the Long-term Management of Used Nuclear Fuel in Canada, 2004			

Appendix VIII – Ranking of Top Opening and Closing Comments by Theme

Opening Comments by Theme	Ontario # of times/ comment (% of overall total)	ROC # of times/ comment (% of overall total)	Total # of times/ comment (% of overall total)
1. Quality of Life:	148 (46%)	178 (45%)	326 (45%)
a. Environment	38 (12%)	58 (14.5%)	96 (13%)
b. Health and Safety	44 (14%)	44 (11%)	88 (12%)
c. Concern for Future Generations	39 (12%)	36 (9%)	75 10.5%)
d. Security	27 (8%)	40 (10%)	67 (9%)
Fear and uncertainty	9	26	35
Security from terrorism/ instability of society	18	14	32
2. Research/ Future Generations:	56 (17%)	36 (9%)	92 (13%)
More research	39 (12%)	26 (6.5%)	65 (9%)
Confident future generations have better technology	6	10	16
Used fuel to be retrievable	11	0	11
3. Alternate, renewable energy sources:	23 (7%)	60 (15%)	83 (12%)
Alternate, renewable, safer energy sources	5	31	36
Phase out/ reduce dependency on nuclear power if better way to manage waste is not found	5	20	25
Cost-benefit analysis of all energy sources	3	7	10
Conserve energy	10	2	12
4. Appreciation for citizens' dialogue	19 (6%)	34 (8%)	53 (7%)
5. Other Comments	75 (23%)	91 (23%)	166 (23%)
Total Comments	321 (99%)	399(100%)	720(100%)
Please note that not all totals add up to 100% due to rounding of numbers. Source: Transcripts, Citizens' Dialogue on the Long-term Management of Used Nuclear Fuel in Canada, 2004			

Closing Comments by Theme	Ontario # of times/ comment (% of overall total)	ROC # of times/ comment (% of overall total)	Total # of times/ comment (% of overall total)
1. Appreciation for Dialogue/learned a lot	82 (18%)	143(26.5%)	225(22.5%)
2. Surprise at problem/ lack of awareness:	73 (16%)	112 (21%)	185(18.5%)
Surprise at extent of problem/ lack of awareness	43 (9%)	73 (13.5%)	116 (11.6%)
Better appreciation of complexity	11	21	32
Surprise with decision made 30 years ago to use nuclear power without long term plan for waste	19	18	37
3. Reduce volume of waste:	100 (22%)	67 (12%)	167 (17%)
More research to find a better way	35 (7.5%)	26 (5%)	61 (6%)
Conserve energy	26	7	33
Phase out/reduce dependency on nuclear if better way to manage waste not found	18	14	32
Use alternate/ renewable energy sources	17	12	29
Look at cost/benefits of nuclear, including cost to manage waste, and all energy sources	4	8	12
4. Governance/ Roles and Responsibilities:	91 (20%)	69 (13%)	160 (16%)
Decision makers to listen/ reflect citizen input	58 (13%)	31 (6%)	89 (9%)
Government to make decision/ ensure security	3	23	26
Decisions makers to be honest/ transparent	8	8	16
Decisions to reflect long term nature of problem/ not short term political expediency	10	2	12
Decisions to reflect science/ involve experts	6	4	10
Dialogue to continue	6	1	7
5. Education/ information	41 (9%)	33 (6%)	74 (7%)
6. Other Comments	74 (16%)	115 (21%)	189 (19%)
Total Comments	461(101%)	539(99.5%)	1000(100%)
Please note that not all totals add up to 100% due to rounding of numbers. Source: Transcripts, Citizens' Dialogue on the Long-term Management of Used Nuclear Fuel in Canada, 2004			

Appendix IX – Evaluation Questionnaire Results

The vast majority of participants completed the evaluation questions, which were organized in a similar fashion to the pre and post scenario rating questions, on a scale of 1 to 7. Most of the participants felt extremely positive about the day, reflected in their evaluation ratings included in the pre and post questionnaire package.

More than 90% indicated that they would attend another Citizens' Dialogue based on their experiences from the day, and 91% felt that they had been given sufficient opportunity to participate. In addition, ninety-one percent of participants felt that the facilitators provided clear guidance and support throughout the day. Participant ratings on the evaluation questions are included below:

- Based on this experience, I would come to another Citizens' Dialogue:
 - o 92% agree
 - o 4% neutral
 - o 5% disagree
- The facilitators provided clear explanations, guidance and support throughout the day:
 - o 91% agree
 - o 6% neutral
 - o 4% disagree
- There was sufficient opportunity for me to contribute and participate:
 - o 91% agree
 - o 4% neutral
 - o 3% disagree
- Overall, the one-day dialogue was worthwhile to me:
 - o 89% agree
 - o 6% neutral
 - o 4% disagree
- The small group discussions were useful to me:
 - o 87% agree
 - o 4% neutral
 - o 8% disagree
- The participant workbook was clear and contained relevant and useful information:
 - o 85% agree
 - o 8% neutral
 - o 8% disagree
- The information package sent in advance provided helpful and interesting information:
 - o 51% agree
 - o 21% neutral
 - o 27% disagree

Appendix X – Dialogue Sessions: Dates and Locations

Ottawa	January 24, 2004
Montreal	January 25, 2004
Québec City	February 7, 2004
Thunder Bay	February 14, 2004
Moncton	February 22, 2004
Sudbury	February 28, 2004
Saskatoon	February 28, 2004
Calgary	March 6, 2004
London	March 13, 2004
Vancouver	March 13, 2004
Toronto	March 20, 2004
Halifax	March 28, 2004

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