

# Shifting paradigms in managing radioactive waste

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Radioactive waste management (RWM) issues are embedded in broader societal issues such as the environment, risk, energy policy and sustainability. In all of these fields there is an increasing demand for stakeholder involvement. Managers in both the public and private sectors find that such involvement can improve the quality and the sustainability of policy decisions, and participation is recognised today as one of the five “principles of good governance” together with openness, accountability, effectiveness and coherence.<sup>1</sup>

Stakeholder involvement in policy making has received considerable attention within the OECD.<sup>2</sup> Moreover, public information, consultation and/or participation in environmental or technological decision making are required by a number of international treaties. For RWM, these include the Joint Convention<sup>3</sup> and, in Europe, the Espoo and Aarhus Conventions.

The NEA Forum on Stakeholder Confidence<sup>4</sup> (FSC) was set up in 2000 as the result of a decade-long process during which stakeholder confidence issues increasingly took a more central stage in the formulation and implementation of long-term solutions for managing radioactive waste, and during

which a cultural shift took place making “stakeholder dialogue” a lead principle in radioactive waste management. The FSC considers “stakeholder” to mean *any actor* – institution, group or individual – *with an interest or a role to play* in the societal decision-making processes associated with RWM.

A recent NEA publication entitled *Learning and Adapting to Societal Requirements for Radioactive Waste Management* brings together the key FSC findings and experience covering four years of work. Six main areas are targeted in the publication and are briefly described below.

## Favourable conditions for issuing radioactive waste management policy

Technical expertise and technical confidence are insufficient, on their own, to justify waste management solutions to a wider audience, or to see them through to successful implementation. A successful waste management policy requires previous elaboration of national policy on energy choices in which the waste management programme is embedded as well as recognition – at the

national level – that the status quo regarding waste management needs changing. Additionally, clarity is needed on the waste inventory and the final destination by waste type.

Since mechanisms, procedures and practices for managing radioactive waste are chosen to be compatible with the political system and decision-making culture of each country, there is no one-size-fits-all solution. However, as more and more players demand an active role, all national programmes will have to achieve a balance between the approaches of participative democracy (whereby the stakeholders contribute the specificities of their demands and interests in a project) and representative democracy (whereby the elected representatives, both local and national, contribute their vision and engagement).

## The design of the decision-making process

In today’s decision-making context a “decision” no longer means opting for, in one go and for all time, a complete package solution. Instead, a decision is one step in an over-

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all, cautious process of examining and making choices that preserve the safety and well-being of the present generation and the coming ones while not needlessly depriving the latter of their right of choice. Consideration is thus increasingly being given to the better understanding of concepts such as “step-wise decision making” and “adaptive staging” in which the public, and especially the most affected local public, is meaningfully involved in the planning process.<sup>5</sup>

Decision processes are expected to meet a number of competing requirements, e.g. they need to be participatory and accountable, goal-centred and adaptable. Competing requirements should be balanced by combining various policy tools, formal and informal procedures, analytic and deliberative techniques, linear and reversible steps, and their balance should be compatible with the type and context of the decisions.

Three overarching principles are the essential elements of any decision making seeking broad societal support:

- *Decision making should be performed through iterative processes, providing the flexibility to adapt to contextual changes*, e.g. by implementing a stepwise approach that provides sufficient time for developing a competent and fair discourse. The latter will also benefit from exposing existing research and its independent assessment to wide consultation.
- *Social learning should be facilitated*, for example by promoting interactions between various stakeholders and experts.
- *Public involvement in decision-making processes should be facilitated*, for example by promoting constructive and high-quality communication between individuals with

different knowledge, beliefs, interests, values and world-views.

### The social and ethical dimension

Competing values inevitably need to be embodied in societal decision processes for these to be successful. The tension that exists between competing values such as technical efficiency, support by the stakeholders and distributive equity, lends complexity to decision-making processes. Additionally, for projects having a lifetime of decades, the dominant values approved by society may change over time.

There are multiple legitimate views and ethical principles concerning the fairness of a decision's outcome. If they clash, there is no encompassing theory that could help decide which of the competing views should be considered more important. Management strategies that meet multiple ethical principles simultaneously (for example, not placing undue burdens on future generations while preserving potential energy resources for future use) have a better chance of gaining broad societal support. Identifying such strategies may rely on fair processes in which stakeholders seek a compromise between divergent ethical principles. Research indicates that it is impossible to satisfy all the competing values through an idealised decision-making process. In a highly developed democratic society, however, all desired criteria should be accommodated at least to a degree.

Requirements for technical safety and societal control need to be reconciled in radioactive waste management. To accommodate these often competing requirements, many implementing organisations are focusing their efforts on developing a final repository concept that

incorporates provisions for retrievability. New processes to forecast and monitor quality of life and social impacts are also being brought to the fore.

### Trust in the actors

Trust is “*a relationship between individuals within an existing or emerging group. It takes place in situations where individuals depend on people they trust to achieve important projects entailing significant risks for them*”.<sup>6</sup> Process components can be designed to limit the reliance on trust and to try to restore trust where the trust relationship has been damaged. These include:

i) involving in the decisions those who are affected, so that they gain more control; and/or ii) dividing major decisions into relevant steps, providing feedback after each step and allowing the affected people to halt the procedure if they lose trust in the “trustees”. FSC delegates recognise the importance of stakeholder involvement in building trust, but also the importance that institutions develop appropriate features in the areas of organisation, mission and behaviour.

Trust and fairness issues will play an important role throughout the decision-making process. Building and maintaining trust requires sustained commitment of substantial resources.

### Stakeholder involvement

Stakeholder involvement is a key concept in modern approaches to governance. Not recognising its relevance will, most likely, lead one to failure.

OECD countries are moving away from a traditional “decide, announce and defend” model, for which the focus has been almost exclusively on technical content, to one of “engage, interact and co-operate”, for which both technical content and quality of process are of

comparable import to a constructive outcome. In this context, the technical side of waste management is no longer of unique importance; organisational ability to learn, to communicate and to adapt moves into the foreground.

Involvement rests on providing information and may include consultation, active participation and shared decision authority. Management tools<sup>7</sup> are available, as are mandated instruments (e.g. environmental impact assessments), which include stakeholder involvement. Stakeholder involvement improves the information base for decisions, and broad participation may also compensate to some degree for the unavoidable absence of future generations in today's reflections or negotiations.

Institutions must be able to accommodate these changes in order to carry out the long-term projects for which they are responsible. Institutions capable of achieving and maintaining stakeholder confidence will need focused efforts in the three main areas of organisational aspects, mission and behaviour.

### The local dimension of radioactive waste management

Long-term radioactive waste management involves the construction of only a limited number of facilities and it is therefore a national problem with a strong local dimension. Typically, it is only once a facility is located, or investigations are carried out, at a specific site that the greatest attrition manifests itself between national imperatives and local desires. Moving from the national to the local dimension requires the pre-existence of a decision-making process that is widely supported, and adhered to, by all actors. The informing principles

of this decision-making process should take into account that safety is the paramount criterion for the local acceptability of a facility and that participation in decision making and oversight, as well as the provision of community development schemes, are further contributors to trust in the process and the hosting of the facility.

### Conclusions

The environment for decision making has been changing in a significant way in society, and large-scale technology projects are rejected, in general, when stakeholders have not been actively involved in creating them or developed a sense of responsibility for them. A trend can be seen in OECD countries towards implementing forms of participatory democracy that require new or enhanced dialogue amongst all concerned parties. Dialogue and stakeholder involvement have thus become a central part of the waste management process.

Best practice in RWM has shifted from the traditional "decide, announce and defend" model to one of "engage, interact and co-operate". Time spent in dialogue, and in bringing stakeholder input into the organisation and into the waste management programme, is now seen to be time well spent.

Practitioners acknowledge that their roles have evolved in response to a change in the definition of radioactive waste management. In particular, as dialogue and stakeholder involvement have become a central part of the waste management process, scientists are having to address new questions raised by the general public, implementers are engaging in early, pro-active dialogue and regulators are becoming involved in the waste management process far earlier than before. Indeed, regulators have

come to see their role increasingly as "safety communicators" and "peoples' experts", and recognise that they need to be involved in that role from the start of consultations with local communities, before final decisions on facilities, sites and concepts are rendered.<sup>8</sup> Policy specialists are also exploring new forms of dialogue with a wider range of stakeholders. It has been broadly acknowledged that there needs to be clarity of roles as well as visibility for the institutional actors. ■

### Notes

1. Good governance relies on "policies designed on the basis of reasonable decisions that are well communicated and discussed with the public". NEA (2002), *Society and Nuclear Energy: Towards a Better Understanding*, OECD, Paris. Online at [www.nea.fr/html/ndd/reports/2002/nea3677.html](http://www.nea.fr/html/ndd/reports/2002/nea3677.html).
2. See for instance OECD (2001), *Citizens as Partners: Information, Consultation and Public Participation in Policy-making*; OECD (2001), *Citizens as Partners: OECD Handbook on Information, Consultation and Public Participation in Policy-making*; OECD (2003), *Open Government: Fostering Dialogue with Civil Society*; or OECD (2004), *Problems and Promise of E-Democracy: Challenges of Online Citizen Engagement*, OECD, Paris.
3. *Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management*. Online at [www-ns.iaea.org/conventions/waste-jointconvention.htm](http://www-ns.iaea.org/conventions/waste-jointconvention.htm).
4. For more information on the FSC and its publications, see the FSC web page at [www.nea.fr/html/rwm/fsc.html](http://www.nea.fr/html/rwm/fsc.html).
5. See the NEA report of 2004 entitled *Stepwise Approach to Decision Making for Long-term Radioactive Waste Management* (available at [www.nea.fr](http://www.nea.fr)).
6. European Commission (2000), "The TRUSTNET Framework: A New Perspective on Risk Governance", Project Report, No. FI4P-CT96-0063, EC, Brussels.
7. NEA (2004), *Stakeholder Involvement Techniques: A Short Guide and Annotated Bibliography*, OECD, Paris.
8. See NEA (2003), *The Regulator's Evolving Role and Image in Radioactive Waste Management*, OECD, Paris.