

SUBMISSION IN THE
public consultation on the
IGD-TP
Strategic Research Agenda (SRA)
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by
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GREENPEACE



'If a problem is too difficult to solve, one cannot claim that it is solved by pointing to all the efforts made to solve it'

Hanes Alfvén, Energy and Environment, Bulletin of Atomic Scientists, May 1972 (quoted in the Royal Commission on Environmental Pollution - Nuclear Power and the Environment - Sept 1976)

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International

My name is Jan Haverkamp. I have an academic engineering degree (Ir. - equivalent with a Masters degree) in Environmental Hygiene from the Agricultural University in Wageningen as well as a candidate (equivalent with Bachelors) degree in Biochemistry from the State University in Leiden, both in the Netherlands. I have studied also nuclear physics and energy policy at the State University in Leiden. I have a secondary specialisation in communication sciences, communication psychology and teach facilitation of environmental communication processes at the Masaryk University in Brno, Czech Republic.

I work as an independent expert in energy issues with specialisation in nuclear energy issues for the global environmental organisation Greenpeace.

I have been asked by Greenpeace to write a submission for the SRA report of the IGD-TP in the public consultation phase. I wrote these comments on personal title and my opinion – though based on my experience within Greenpeace and benefiting from input from other Greenpeace colleagues and experts – does not necessarily coincide with the opinion of Greenpeace as an organisation.

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COMMENTS

GENERAL

1. The SRA report of the IGD-TP shows some of the fundamental problems that cause the lack of credibility of the platform and can constitute a source for defensive and negative reactions on the development of radioactive waste management options. These include:
 - The fact that the IGD-TP is not honest about its closed structure;
 - The fact that the Vision of the IGD-TP is not science-based but based on political choice;
 - The fact that the SRA report is not transparent.
 These points are illustrated below on the basis of concrete references to the report.
2. In general, technical claims are not sourced. This happens throughout the report. It would be good to add sources of available peer-reviewed and public studies on which these claims are based. An example can be found on the end of page 31: *“For the case of temperatures up to 100°C this understanding is considered quite good.”*
3. The descriptions of where certain claims are tested is intransparent and unsourced. An example: page 32: *“Full-scale production of buffer blocks of the required density has been demonstrated, along with their emplacement in boreholes.”* Where has this been demonstrated, by whom, and where can the information be found? Without this crucial information, the report is nothing but an unsubstantiated collection of claims that cannot be checked on their validity. This problem appears throughout the report.
4. The IGD-TP appears not to understand the issue of reversibility and retrievability very well in its political consequence. It is unlikely that during future developments, European citizens will accept different standards within the Union concerning this issue, and reversibility and retrievability may well become rule throughout the Union. That means that reversibility and retrievability are not a problem to be considered for *“some waste management programmes”* (page 35), but for all waste programmes and its consequences need to be taken into account in all RD&D efforts.

FOREWORD

5. The foreword states: *“The IGD-TP has, in December 2010, more than 60 participating organisations representing stakeholders with a wide range of backgrounds e.g. waste management organisations (WMOs), industry, research institutes, research centres and the academic community.”*

Missing in this listing is **civil society**. The use of the word “participating” is misleading. This is the first content related communication Greenpeace has received from the IGD-TP secretariat and therefore it cannot claim that in December 2010 these organisations have “participated”.

6. This is ever so more irritating, because the IGD-TP has given in 2010 advice to the European Commission on the proposal for a directive on radioactive waste without consulting all its participants.
7. It is claimed that consultations have been performed with the IGD-TP participants during a SRA seminar in June 2010 and later during November 2010 on a draft version of the SRA document. Greenpeace has neither been invited to the seminar nor has it been invited to deliver comment on the draft version of the SRA document before this public consultation.
8. On the IGD-TP website, Greenpeace is mentioned as participant of the technology platform. Greenpeace therefore demands either to be treated from now on as a participant of the IGD-TP, or Greenpeace will retreat its participation and publish the way it has been treated by the IGD-TP.
9. In spite of this internal dysfunctionality of the IGD-TP and under protest against the closed character of the IGD-TP so far – even towards its own members –, Greenpeace hereby delivers its comments on the SRA document in the public consultation phase.

CHAPTER 1

PAGE 4

6. *“There is increased awareness in the international community that geological disposal is the most appropriate solution for the long-term management of spent fuel (if considered waste), high-level waste, and other long-lived radioactive waste /1-4/.”*

This is not true and a reflection of the closed nature of the IGD-TP. This conclusion can most certainly not be drawn from the mentioned Eurobarometer. What is true, is that geological disposal (in many different forms) is seen as one of the potential options of risk reduction in radioactive waste management and has by default become the main option under research, because research in other options has been stopped for cost and political, not scientific, reasons. The IGD-TP should not create the illusion that the waste problem is solved when there is no scientific basis for such claim.

7. *“Despite the differences between the timing and the challenges in the different programs, there is a consensus that continued and strengthened cooperation on the scientific, technical, and societal challenges related to deep geological disposal is beneficial for the safe and timely implementation of the first geological disposal facilities.”*

It would be more appropriate and closer to the truth to write: “Despite the differences between the timing and the challenges in the different programs, there is a consensus that continued and strengthened cooperation on the scientific, technical, and societal challenges related to deep geological disposal is **necessary if potential** implementation of the first geological disposal facilities **is to happen in the most safe way possible.**”

8. *“The IGD-TP vision statement (Vision 2025) and the commitment of the members are the following:”*

Because the vision statement is not based on sound scientific principles, Greenpeace has joined the IGD-TP as a member without committing to the vision. The IGD-TP cannot claim to be a platform in which different stakeholders try to improve cooperation in research around deep geological disposal if it closes itself to the debate on this vision statement and even spreads disinformation on the issue.

PAGE 5

9. *“One of the key technology challenges referenced is to “maintain competitiveness in fission technologies, together with long-term waste management solutions”. Hence, the 'Vision 2025' of IGD-TP is fully consistent with the SET-Plan's objectives.”*

By binding itself to the marketing goals of the nuclear industry as quoted here from the SET-plan, the IGD-TP undermines its credibility as a platform that searches for scientifically sound approaches that could eventually lead to a least-risk storage or disposal option for radioactive waste. If the IGD-TP cooperation is driven by marketing new nuclear fission projects instead of the search for risk-reduction in the nuclear waste problem, it undermines its scientific credentials and becomes a lobby-organisation, with all the negative connotations attached to that.

This situation would seriously undermine the objectives expressed in the Specific Programme implementing the Seventh Framework Programme of Euratom for Nuclear Research and Training Activities (as quoted on page 5).

10. *“Geological disposal has been studied since the 1970s as the preferred option for the long-term management of high level and/or long-lived radioactive waste.”*

It is more honest to state: “Geological disposal has been studied since the 1970s as the **nuclear industry's** preferred option for the long-term management of high level and/or long-lived radioactive waste.”

PAGE 7

11. *“Each WMO focuses on carrying out RD&D that helps to deliver the input/answers/state-of-the-art needed for the next program stage, based on the available information and knowledge within the geological disposal community.”*

“... **and beyond**” (I hope)... It is important that the RD&D is not a closed priesthood that does not look outside of its own order – and that is also the reality today for most of the WMOs.

12. *Figure 1.3.1.:* The left yellow column is far from complete. There are also boundary conditions set beyond the regulatory body and local partnerships – think of national and international law, input from public consultations (to be taken into due account on the basis of the Aarhus Convention, art. 6(8)), regional planning procedures, etc.

13. *Figure 1.3.1.:* It should not be a real problem to replace the words “*man and environment*” by “**people and environment**” (also on page 8). This is not a feminist or pc quirk, but rather to remain alert to the fact that especially pregnant women and children, rather than healthy men in their 40s, are the most vulnerable to low radiation doses.

14. *“At the international level, there is a consensus that the maximum level of passive safety can be obtained through geological disposal./1-19/.”*

This is not true. There is no consensus about this issue – repeating a claim *ad nauseum* does not make the claim true.¹

PAGE 11

15. *“The SRA working group consisting of representatives from all of the IGD-TP member organisations started the work...”*

Greenpeace has not been invited to the SRA working group – the working group therefore did not consist of representatives from all of the IGD-TP member organisations.

CHAPTER 2

PAGE 14

16. *Figure 2.1.2 – “Acceptance”* is a dangerous term here, because throughout the programmes it is not a question of acceptance, but of **acceptance or non-acceptance**, or rather of decision-making. My proposal is to use the term **decision-making** rather than acceptance. This should be done throughout the document. I only want to remind that in most procedures the “opt-out-at-any-time option” for local communities accepting development of radioactive waste management on their territory (the basis of voluntarism) needs an open-ended language – “acceptance” is not open-ended. This is also true for the safety case: if any technical or site-specific issue blocks the safety case, it should be possible to stop further development. That means a scientifically honest and open-ended approach – and language.

17. In paragraph 2.2, an essential point is missing in the list of main issues: **Management of human interference**. This includes the question of reversibility and/or retrievability, unintended human interference and intended human interference (for instance for the harvesting of materials – radioactive or non-radioactive). Because three programmes are progressing relatively fast (Sweden, Finland, France) this should be an RD&D area of high priority.

¹ Helen Wallace, *Rock Solid? A scientific Review of Geological Disposal of High-Level Radioactive Waste*, Buxton (2010) GeneWatch UK; <http://www.greenpeace.org/eu-unit/press-centre/reports/rock-solid-a-scientific-review>

Possible human interference has site related aspects as well as technology related aspects, but also technical-scientific as well as social-scientific ones.

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18. *"In particular the selection of Key Topics and the prioritization of Topics have, to some extent, been done on the basis of the dialogue with IGD-TP participants and stakeholders who have endorsed the Vision 2025. All this is a continuous process which runs parallel to the progress of the programs and accompanies the execution of the SRA."*

Why has this only been done with participants and stakeholders who endorse the Vision 2025, and not with a wider group? This means that important questions may have fallen off during the process because of "performance bias". The involvement of "outsiders" seems within the SRA, and the IGD-TP in general, not a continuous process, but one of stop and go. This creates a strong defensive attitude among those who are excluded and negatively impacts the quality of output.

CHAPTER 3

PAGE 22

19. *"The safety case must be able to describe the evolution of the repository in a way that can be seen as a reasonable representation of what might happen."*

"... and give a clear indication of uncertainties in the description."

20. *"Further improve fruitful dialogue with the authorities"*

"...and other stakeholders..." (as is already acknowledged on page 23)

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21. *"Since the normal routes through which scientific and technical results are assessed and accepted - or corrected - by the expert community are slow, the review processes can be enhanced by creating new channels and practices for peer review among the participants of the TP."*

And, I would suggest, by a pre-defined core of independent academics. When peer review is only done by participants of the TP, there is too much risk of bias, certainly given the strong Vision. Some sort of external balance should be introduced here.

PAGE 28

22. *"The work performed for the first objective (a) will contribute to demonstrating that construction technologies are available to meet the performance targets and requirements set"*

The IGD-TP is fooling itself. Until research is finished, we cannot know whether these technologies are available. Better formulation: "The work performed [...] will contribute **to finding and defining** construction technologies that meet the performance targets [...]"

PAGE 35

23. *“Improving the safety conditions and its demonstration will be beneficial to gain or to maintain confidence.”*

This once more demonstrates the misconception of the IGD-TP concerning public acceptance of its work. A better formulation would be: “Improving the safety conditions and its demonstration will be beneficial to gain or to maintain **support for the continuation of research into deep geological disposal.**”

PAGE 37

24. *“Even though geological repository development is founded on the implementation of safety culture...”*

Currently, safety culture is within the nuclear industry largely based on ALARA, whereas in the chemical industry as well as the treatment of hazardous wastes, prevention and the use of BAT are the leading principles. Because of the undermining influence of economic and political considerations in the interpretation of the term “reasonable” in ALARA, for credibility and safety quality reasons a consequent use of BAT instead of ALARA is necessary. This also should extend to safety culture: the use of best practice should be standard, irrespective of cost implications.

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25. Topic 3: Monitoring of the environmental reference state. It should be stressed, that the current choice of sites in Finland and Sweden, as well as site discussions in England, lead to an extra problem. Because the reference state will have to be compared with the actual state over very long periods of time, and in these cases the sites are near existing nuclear facilities that have a life-time far shorter than these periods of time, the reference values will have to be corrected for the presence of these nearby nuclear facilities. This is an extra challenge given the uncertainty around impacts of the nuclear power stations and reprocessing installations found on the above mentioned sites. Nevertheless, reference state data should reflect a true zero-state – the base-situation without impact from standing nuclear installations – in order to properly be able to assess longer term impacts of deep geological disposal facilities. The argumentation “but this was already a contaminated area anyway” is not acceptable.

26. Topic 5: Post-closure monitoring. Because the post-closure time will start at the earliest one to two generations from now, it is important that post monitoring strategies include options that are so robust – and probably technically simple – that they can also operate when economic and technical circumstances have strongly deteriorated. One cannot rely solely on high-tech solutions, including wireless systems and highly computerised systems. This issue is more or less indicated on page 47, but could be made more explicit.

PAGE 43

27. *“Objective: – The purpose of this Key Topic is to develop guidance for communicating to decision makers and stakeholders the results of research that underpin the development of safety cases and environmental assessments.”*

This formulation implies once more a strategy of massaging the public into acceptance, instead of honest and open dialogue. To prevent that, the IGD-TP could add: “... and give decision makers and stakeholders the possibility for feedback to identify weaknesses and concerns that need to be taken into due account in research, development, decision-making processes as well as implementation.”

28. *“Rationale and benefits – It is essential that effective approaches to dialogue and reviews are established to build stakeholder support, confidence and trust in the concept of safe geological disposal of radioactive waste and in meeting the vision of an operating geological disposal facility by 2025.”*

This is one of the better illustrations of the Vision-2025-based bias of the IGD-TP. It is better formulated in the following sentences of the report: dialogue, reviews, consultations and transparency should be used to enhance the quality of the decision-making in the process of development of radioactive waste management – including RD&D of deep geological disposal. Whether or not this will lead to implementation of deep geological disposal projects, and if so, in which time frame, is depending on the developments in RD&D, the above mentioned interactions and the resulting decision-making processes. By linking itself to the Vision 2025, the IGD-TP constantly gives the impression of wanting to massage the public into acceptance of what is until now still an unproven radioactive waste management method.

29. It is striking to notice, that the IGD-TP has not followed the recommendations in this paragraph during the preparation of this SRA report – including transparency and the facilitation of dialogue (e.g. by explicitly excluding Greenpeace from the activities of the IGD-TP leading up to the report).

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30. There is no reference to the existing international legal framework under which the IGD-TP is working, e.g. the Aarhus Convention, the Espoo Convention and its SEA Protocol and the different EU Directives on transparency, access to information, public participation and access to justice. This legal framework has direct consequences for the form and quality of stakeholder and public participation and communication / dialogue as well as foreseen time-lines.

CHAPTER 4

PAGE 51

31. *“The management of knowledge in geological repository development is one of its major challenges - particularly due to increased requirements for openness and transparency concerning its scientific and technological basis”*

This sentence is incomprehensible and the fact that there is no “.” at the end indicates that there has probably been more explanation in an earlier version. However, increased requirements for openness and transparency are likely to *reduce* the challenges rather than increase them, as implied here. This report is an illustrative case – were the information contained here properly sourced, it would be easier to use it as an entrance into the full discussion and for better comprehension of issues related to geological disposal and radioactive waste management in general.

32. *“However, the geological repository development programs, the consecutive licensing applications and the needs of the safe management of radioactive waste require for equipping participants of these processes and stakeholders of future generations with the necessary knowledge...”*

The participants of the processes mentioned are not the only current stakeholders. This group is far wider and also this wider group of current stakeholders needs to acquire the necessary knowledge. Better would be to say: “... and **other stakeholders (including those of future generations)** with...”

33. *“It is essential that effective approaches to communication and dialogue are established to gain and maintain stakeholder support, confidence and trust in the concept of safe geological disposal of radioactive waste.”*

Yet another example of expert bias... The mentioned approaches are foremost meant to secure exchange of experience, knowledge and views between the small community of experts and wider society / the wider public. When that leads to acceptable decision processes and transparent development of projects, it **may** create stakeholder support, confidence and trust. But these are **consequences** of good process, not goals. The goal of good process is the exchange itself – and the expert community could gain a lot

from that – a lot more, and more important things, than just support, confidence and trust. When this expertocratic bias is not broken within the process of the IGD-TP (and currently it is still very strong – see e.g. the exclusion of Greenpeace from processes), any proposed approach is doomed to fail gaining support, confidence and trust.

In general, this chapter quite well describes what is wrong within the current approach of the IGD-TP towards other stakeholders, including critical members. When the process leading to this report does not fulfil the basic communication criteria set in it, how can it finally result in support, confidence and trust?

PAGE 53

34. *“For the programs approaching the licensing stage this area no longer constitutes a technical challenge and does not require further R&D work since relevant methodologies, techniques and equipment are already available. This means that site characterization is not considered a Key Topic or Topic in this SRA to fulfill the Vision 2025.”*

This pre-supposes that no problems are and will be encountered in any of the programmes currently under way in Finland, Sweden and France. Given the still existing uncertainties, that is a bold supposition. There is a small but existing chance that the current sites will not fulfil the requirements from the regulator or wider governance structures and that other sites will have to be located. In that case it is important that the knowledge and information created is developed in such a way that it is also as much as possible usable in a new round of site-selection (in case not the principle of deep geological disposal itself appears to be at fault, but merely the site). Although it is true that this will push the goals of the Vision 2025 beyond 2025.

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35. Transportation – There is no reference to the Euratom Directive on Transportation of Radioactive Materials.
36. *“A combination of regulatory standards and requirements, engineering design, quality controlled fabrication and inspection, validated performance of scaled models provide for a high confidence in the safety and security of the used technologies...”*

Uhhh? My perception is that exactly confidence in safety and security of transports is at an all time low – not only in a country like Germany, where we see every year enormous protests around transports, but also in countries like the US, Canada, Japan – and the many sea-bordering states confronted with SNF and plutonium transports between Japan, France and the UK –, France, the UK, the Netherlands, Belgium, Norway, Sweden, Denmark, Estonia, Poland, Romania, Bulgaria, Hungary, Slovenia and Russia, to name a few that have known credibility problems around nuclear transports in the last decade. I think that integrated research in 1. the need for such transports, and 2. the form of those transports remains an important issue.

37. *“Furthermore, as the waste management program continues over a period of 100 years...”*

Add: **“or more”**.

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38. Costs – this paragraph is not sufficiently worked out and would need input from economists. There is a large list of costs and cost factors that are not considered here, including the costs of risk, the risk of cost overdraws, the capital development of funds, the timing of payments, and so on.

CHAPTER 5

PAGE 57

39. *“Other implementing organisations are private companies, which are not bound by the same regulations.”*

Parallel to expansion of regulations for public procurement to (partly) state-owned enterprises with a public function like in electricity generation, it is likely that where maybe not all involved organisational structures may be legally bound by public procurement rules, they will be expected – for the sake of transparency and the related credibility – to fulfil the same criteria. I.e. RD&D efforts should take into account that the transparency introduced in public procurement procedures will have to permeate the entire branch.

40. *“The strategic research agenda (SRA) developed [...] is based on the state-of-art in RD&D prevailing at the time of writing.”*

As communication expert, I have to conclude that this is at least not true in the area of communication and I have doubts about certain technical issues. I think that a bit more modesty would help keeping credibility on an acceptable level. Proposed formulation: “... is based on **an attempt to include** the state-of-the-art...”

CONCLUSIONS

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41. *“... show that the setting up and the cooperative work of the IGD-TP will result in benefits...”*

“... of the IGD-TP **may** result in benefits...” – modesty is a prerequisite for obtaining credibility...

42. *“Enhanced Stakeholder confidence by demonstrating viable solutions for managing spent fuel and high level and/or long-lived radioactive wastes.”*

“... by demonstrating viable **options** for risk-reduction in managing spent fuel...” There are no solutions for managing spent fuel and high level and long-lived radioactive wastes. Several of the indicated research questions indicate that we maximally can reduce risks. It is important to be aware at every moment that risks still remain.