



**NDA Estate  
SME Steering  
Groups**

**NDA Estate SME  
Steering Group – North**  
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**Issue 1**



# **Better Practice Innovation for SMEs**

**How small and medium enterprises can grasp new opportunities in the nuclear decommissioning market by delivering innovative techniques and practices**



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# Foreword

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As the DECC Minister responsible for the Nuclear Decommissioning Authority (NDA) I am acutely aware of the role that a healthy Supply Chain plays in helping us all deal with Civil Nuclear Liabilities. Innovation has been a key element which first helped harness the beneficial power of the atom in the late 1940's and today innovation remains an important consideration in dealing with these legacies in a cost effective, efficient and safe manner.

The Government also recognises the value that Small and Medium-sized Enterprises (SMEs) can deliver which is why we have set ourselves the challenging goal of 25% of the value of central government business (which amounts to around £11bn) going to SMEs by the end of this Parliament.

NDA and its Site Licence Companies (SLC) have responded very positively by the creation of a range of SME Action Plans with multiple interventions. The NDA Estate SME Steering Group – North is one such intervention.

I am therefore delighted that the NDA Estate SME Steering Group – North has produced a better practice guide to innovation – not only for SMEs by SMEs, but for and with support of all levels of the supply chain including clients. The guide will not just help to highlight the issues faced by SMEs aspiring to bring their ideas forward, but more importantly also provides ways and means to help them on their way to success.



Baroness Verma,  
Parliamentary Under Secretary of State for the  
Department of Energy and Climate Change

# Introduction

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**Innovation is key to success in the nuclear industry, and small and medium enterprises (SMEs) deliver it in abundance. This Guide highlights innovative techniques and initiatives that really work in practice. Our aim is to encourage wider adoption of the kind of thinking that promotes innovation and how these can be brought to market so that SMEs will continue to drive change and improvements in the industry.**

The NDA is committed to driving efficiencies and savings for its decommissioning and clean up mission throughout its estate. A key to achieving this is the use of innovation and it is recognised that SMEs in particular have the culture and capability to do this more than other organisations. This guide highlights some of the techniques and culture needed for SMEs to promote innovation in their businesses and how to bring the fruits of their efforts to the nuclear market thus adding real value to the NDA estate.

The SME sector in the UK is diverse. It includes micro businesses with less than 10 employees and also companies with up to 250 employees a year<sup>1</sup>. Together, the SME community is the UK's biggest employer, and widely recognised as the engine for growth in our economy<sup>2</sup>. The nuclear industry is an important market for the sector, and SMEs play a vital and growing part in the industry's operations, both domestically and abroad.

When the NDA Estate SME Steering Group – North (NDA SG) came together for the first time in May 2013, we considered our Terms of Reference<sup>3</sup> and discussed how we could assist and promote the SME community most effectively – including companies already operating in the nuclear market, and those wishing to gain entry.

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<sup>1</sup> <http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/sme-definition/>

<sup>2</sup> <http://www.fsb.org.uk/stats>

<sup>3</sup> <http://www.nda.gov.uk/documents/upload/SME-Regional-Steering-Group-Terms-of-Reference.pdf>

We asked ourselves two questions:

- What do SMEs do best?
- What can SMEs do that will make a difference in our industry?

**The answer to both questions was 'innovation'.**

One of the key unique selling points of SMEs is their ability to innovate. With the industry facing mounting challenges in the years ahead, the NDA SG agreed that the best way we could help and promote SMEs was by focusing attention on innovation, and by disseminating information and experience about better practice – **'better practice' rather than 'best practice'**, because we believe in continual improvement.

When we refer to innovation in this Guide, we mean simply 'anything that is done differently that adds value'.

Having worked for and with SMEs for many years, I am proud to be part of this community, and take great pleasure with my colleagues in producing this Guide. I hope this encourages you to realise innovation in the nuclear market.



Mark Beirne

Chair, NDA Estate SME  
Steering Group – North

# How We Innovate

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**SMEs have to be innovators to survive, grow their businesses, and maintain competitive edge. But the question is: how do they do it? This section describes some of the most important ingredients for developing innovation: from establishing the right internal attitudes to nurturing client relationships on which innovation can prosper...**

## **Establish an 'innovation culture'**

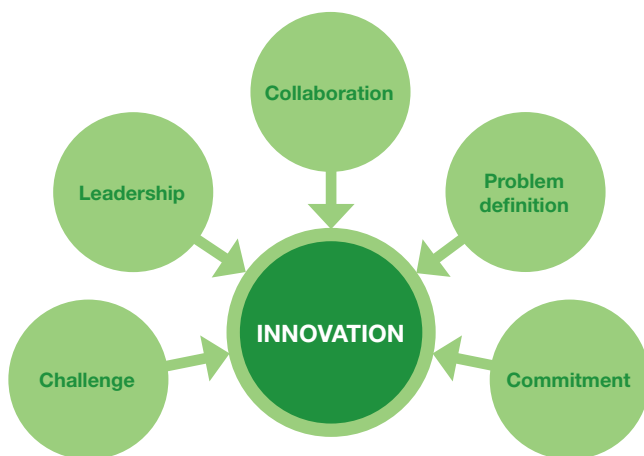
Some companies, regardless of size, appear to have a flair for innovation. Apple has been consistently innovative in developing new products. Dyson has taken redeveloped technology and repackaged it to create more effective and useful solutions. These companies don't have 'flair' by chance. They carefully drive innovation through all aspects of their businesses. Notably, their leaders encourage free thinking and creativity, whilst providing a structure that can bring innovation to market.

There are of course examples of 'eureka' moments, where a flash of inspiration produces a single, brilliant and commercially successful idea. More likely, however, innovation evolves through the continuous flow of ideas, in an environment that allows freedom of thought to stimulate creativity and spontaneity. Innovation does not require massive investment or upheaval to create the conditions in which it will flourish. SMEs can create the right conditions for themselves.

Any successful business, large or small, must have a clear vision of its goals and objectives. Companies that are good innovators usually have leaders that allow and encourage free thinking within the organisation. For SMEs,

innovation is often about delivering 'breakthrough' solutions that larger, less agile organisations fail to spot. Knowledge and expertise need to be harnessed to create those solutions. This means encouraging people to come up with ideas that are different and better, and challenge the status quo. It means providing mechanisms to review and process those new ideas, filtering them effectively, and focusing time and effort on finding solutions that add real value.

SME business leaders must understand and commit to the importance of innovation by working hard to create the right culture. This commitment must be communicated and reinforced in all forms of communication: newsletters, emails, posters, regular workshops, meeting discussions etc. Employees should be reminded about why innovation matters to the business, and ways sought and found to make it easier for innovation to emerge. Leaders must consider what conditions make people most creative, how their ideas can be captured efficiently and, most importantly, how employees can receive good feedback and reward for their ideas – to encourage continued effort. Company people can be brimming with new ideas, but need the confidence and opportunity to articulate them.



## Define the problem

The need for innovation is usually client driven, and a good understanding of clients' problems and challenges is essential for prompting innovative ideas. There is a great deal of information available on NDA and SLC websites to provide a basic understanding of the issues facing the decommissioning market. SMEs will benefit from developing close relationships with client engineers and operations staff to fully understand their drivers and challenges. This depth of client knowledge and understanding is particularly important in the nuclear industry, because it is inherently conservative in its approach to change, and innovation needs careful, early nurturing.

## Early engagement

Collaborating with clients (and partners) is important in developing innovative ideas. Clients need to be helped towards innovation.

If you are unable to engage your fresh ideas early enough, you may find that customers ask for proposals with a narrow set of possible solutions in mind. This makes it hard to provide innovative solutions that meet all the required compliance criteria.

Participating in a tender exercise early enough to help shape the requirement can enable you to create an opportunity for your innovative solution – encouraging the Client that a functional specification offers more value than one for their pre-determined design, or that accepting an 'innovative alternative' as part of the tender exercise in addition to the specified requirement may well provide better value – you will then be able to highlight the unique benefits it offers. Even if there has been no early engagement, it is usually worth including an 'innovative alternative' in addition to a 'safe', compliant bid option and highlighting the added value it brings. Whether this is successful will however be dependent on the Client being able to assimilate an



alternative solution. This is particularly true whilst working within the EU Procurement Directives where acceptance of 'variants' to the specification has to be declared in the original advertisement.

Opportunities should always be sought to share customer processes and take part in joint workshops and continuous improvement activities. Openness and transparency require trust on both sides.

## Apply research and development

R&D is often the catalyst for innovative solutions. It might provide a novel way for using standard equipment to support a client's special requirements. It might lead you towards a gap in the market, and equip you with the ability to meet it. Carrying out trials and development work to underpin theoretical technical solutions and is also an important feature of the innovation process. Investment in R&D can give immediate access to newly developed technologies, providing an edge with a unique process or capability. This can be expensive and time consuming, so it is often more cost effective to use existing R&D to identify opportunities. You may also be able to obtain grants or tax relief for R&D<sup>4</sup>.

If you believe that you don't do R&D then read on.

- Do you wear a lab coat?
- Do you use test tubes?
- Do you work in the R&D section?

**The government R&D tax relief scheme is not for you then, is it? Wrong!!**

Do you use standard equipment but have to work out some novel way to use it specific to this customer's requirements? Does the standard equipment you use need to be applied in a unique way for the customer? Do you configure about 70% and have to write code to do the other 30%? Have you spotted a gap in the market and have the idea of how to fill it but need to develop an application for that?

**Then the government R&D tax relief scheme IS for you.**

R&D is apparent in lots of places where an SME is doing something novel or developing applications from scratch, allowing a solution to be achieved in a different, perhaps more efficient/higher quality/faster way – if another company could solve the problem using different equipment or the same equipment but is likely to do it in a different way, then effectively your solution is the D part of the R&D. You would be surprised perhaps when you understand the requirements that what you do actually is by definition 'Development'.

And if you have a problem to which there is no solution at all, or you have a better mouse trap – then you can look to reclaim some of the costs of Researching and Developing your better solution too.

You are required to keep accurate records of the time spent and document why this is novel, however once you have the methods in place this should be easy enough.

<sup>4</sup> [www.hmrc.gov.uk/ct/forms-rates/randd.htm#2](http://www.hmrc.gov.uk/ct/forms-rates/randd.htm#2)

One of the main criteria is RISK: it has to be **at your risk**. For example ABC Co. is paying you specifically to solve their problem in a specific way, they've worked out how and all you're doing is the work. If the solution doesn't work and you still get paid – then ABC Co. have the R&D claim, not you.

**Small Business Research Initiative (SBRI)** – Innovative SMEs frequently face challenging funding gaps as they seek to develop new and innovative products. SBRI helps to bridge this gap by providing 100% R&D funding, supporting companies to develop potential solutions.

The Technology Strategy Board (TSB) running the SBRI programme has overseen the awarding of 332 contracts worth over £24m since 2012. The Government announced in the 2013 budget that it will substantially expand SBRI among key departments so that the value of contracts available through this route increases from £40m in 2012–13 to over £100m in 2013–14 and over £200m in 2014–15<sup>5</sup>.

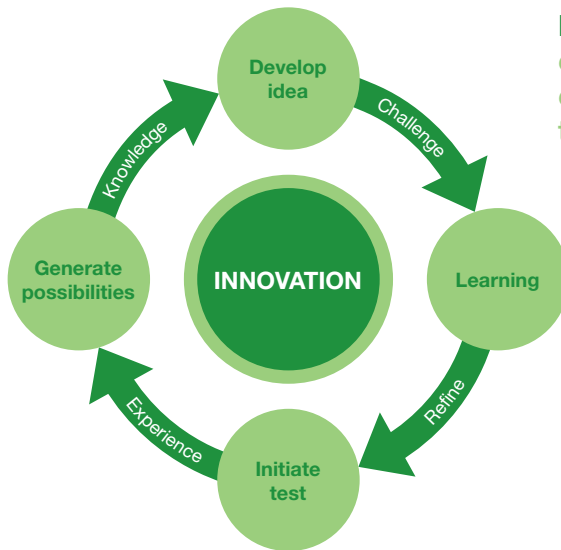
## Develop relationships with learning institutes

Universities and colleges have significant resources engaged in R&D for products and processes that never reach the market place. Engaging with these departments can lead to a partnership where academic excellence, allied to entrepreneurial capability and commercial acumen, can deliver innovative solutions. SMEs can sometimes provide summer placements for graduates, establishing relationships which can lead to future opportunities for both parties.

## Transfer skills and knowledge from other industries

Transferring ideas from other industries (particularly those with similar operating conditions, such as oil and gas) can be a good route to 'new' solutions for the nuclear market. This transfer can be opposed by 'not-invented-here' thinking, particularly when ideas come from less traditionally safety-focused areas. However, as standards rise across other industries and the demand for value grows within the nuclear business, the opportunities to leverage proven cross-industry solutions increases. SMEs should look for solutions that already have a strong track-record of performance.

<sup>5</sup> <https://www.innovateuk.org/-/sbri>



**Innovation –  
continuously  
challenging  
the status quo**

### **Be clear about how you can add value**

Innovation needs to happen for a reason, and it is important to filter ideas and opportunities to make sure that time and money is only invested in the ones that matter. A good early test is to clearly articulate the value that the innovation will add. This involves assessing benefits of the idea (improved performance, reduced cost, increased project life, for example), identifying where added value lies (with the SME, the client, or a third party, for example). The easier it is to highlight added value at a business level, the more likely it is that clients will support the innovation.

### **Keep it simple**

In nuclear decommissioning, it is not always necessary to adopt the same design criteria that were used when nuclear facilities were originally built. Innovative solutions are often simple. Design criteria and safety cases can be challenged not just accepted as customer practice.

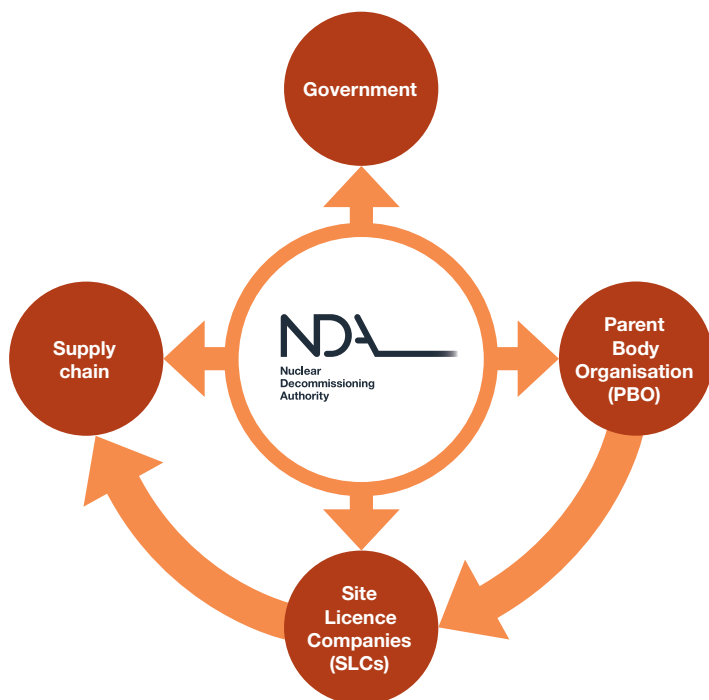
# Routes to Market

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**This section outlines how the nuclear decommissioning market does business, where potential opportunities can be found and sources of information to enable innovation to be successfully proposed and adopted...**

## **Nuclear Decommissioning Authority (NDA)**

The NDA is a non-departmental public body with the purpose to deliver the decommissioning and clean-up of the UK's civil nuclear legacy in a safe and cost-effective manner, and where possible to accelerate programmes of work that reduce hazard. The NDA website<sup>6</sup> contains lots of information on how to become a supplier within the NDA estate and this may well be the first port of call where SMEs engage with the nuclear decommissioning industry.



<sup>6</sup> <http://www.nda.gov.uk/>

NDA is also responsible for ensuring that all the waste products, both radioactive and non-radioactive, are safely managed; implementing Government policy on the long-term management of nuclear waste; and developing UK-wide nuclear Low Level Waste (LLW) strategy and plans.

Although NDA owns the sites and assets, and sets strategy, the actual day to day management and delivery of site programmes is the responsibility of five licensed operators – the Site Licence Companies (SLCs), or Tier 1 suppliers who hold delivery contracts with the NDA. The SLCs are owned by Parent Body Organisations (PBOs) whose contracts the NDA competes for share ownership and the provision of leadership and management personnel for the SLCs.

### Site Licence Companies (SLCs)

There are five SLCs across the NDA Estate:

- Dounreay Site Restoration Ltd (DSRL)
- LLW Repository Ltd (LLWR)
- Magnox
- Research Sites Restoration Ltd (RSRL)
- Sellafield Ltd

The NDA website gives more details on SLCs and links to the individual websites<sup>7</sup>. All of these SLC websites include procurement strategies, and information about how to become a supplier. The SLCs can also put SMEs in contact with Tier 2 companies – ie those companies who have direct contracts with the SLCs.

Look out for NDA and SLC key contacts who are in place to help develop and engage with the supply chain. These posts are clearly identified upon the relevant websites and these personnel are available to answer any of your questions, provide advice, and where necessary, introduce your company to the required contacts within the SLC organisation, for example Sellafield Ltd – Supply Chain Ombudsman and Magnox – Supply Chain Development Manager.

Westinghouse/Springfields Fuels Ltd and Urenco also carry out legacy decommissioning activities for NDA at their sites in the Northwest which have transferred from NDA ownership.

The SLCs are responsible for preparing site plans and managing the supply chain for the goods and services they need to meet their programmes. All of the SLCs are Contracting Authorities under the EU Procurement Legislation.

In addition, although not part of NDA, both Springfields Fuels Ltd and the National Nuclear Laboratory (NNL) participate within the NDA Estates collaborative procurement programme with the other SLCs<sup>8</sup>.

<sup>7</sup> <http://www.nda.gov.uk/contracts/working-with-slcs.cfm>

<sup>8</sup> <http://suppliers.sellafieldsites.com/files/2012/12/Programme-Exec-Summary5.pdf>

## Finding opportunities

The NDA and SLCs advertise their opportunities in a variety of ways. The recognised route for advertising opportunities is Contracts Finder, but SLCs also have their own system (CTM), as well as advertising in the Tenders Electronic Daily (TED) as detailed below:

### Contracts Finder

The online Contracts Finder facility<sup>9</sup> is a government initiative, providing a one stop shop for suppliers to access live procurement opportunities and to view the forward pipeline of potential contracts across the public sector, including the nuclear decommissioning industry. Contracts Finder enables searches for information about contracts worth more than £10,000, for current contract opportunities, information about what is coming up in the future, and details of previous tenders and contracts awarded.

Central government departments and their agencies, non-departmental public bodies, NHS bodies and trading fund organisations are required to use Contracts Finder to publish tender and contract documents for 'closed procurements' as part of the government's transparency commitment. While there have been some teething problems in this process, it has great potential to open up opportunities in the public sector and put SMEs in touch with contracts and with other suppliers.

### Complete Tender Management (CTM)

CTM is a tender management platform used by the SLCs, covering end to end e-procurement processes including: eTendering, eEvaluations, eVendor Management, and eContract Management. Suppliers should look on the SLC websites for individual opportunities and guidance on how to use the system.

### Tenders Electronic Daily (TED)

TED is a similar tender portal for EU tenders, public sector procurement opportunities, and for EU public contracts. This service offers tender notices published on the EU database for selected public sector procurement opportunities and EU government contracts, on the basis of a subscription to the Tenders Notification service or Tenders Search service TEDALERT<sup>10</sup>.

### Working with the NDA supply chain

The SLCs generally contract directly with a prime contractor (Tier 2) or its supply chain, so SMEs need to liaise with those organisations. Due to the long term nature of the decommissioning programme, there is a tendency within the NDA Estate for framework contracts to be put in place with the prime contractors to carry out projects and works on the sites. It can therefore be difficult for new entrants and SMEs to enter the market.

<sup>9</sup> <https://www.gov.uk/contracts-finder>

<sup>10</sup> <http://www.tenders.eu/>

### Identifying the prime contractor

If aware of the contract opportunity through Contracts Finder, or CTM, SMEs can identify who is bidding, and approach them directly, or wait to see who wins and approach the successful contractor at that stage. Successful bidders are usually announced after due process on the same platform that bidding information was described. Particularly large contracts may have a pre-tender evaluation stage and a smaller number of preferred bidders will be announced. If the information is not readily available, approaching the SLCs procurement department directly will usually help. It is in their interest to ensure good access to a wide and diverse supply chain below their prime contract. There may be times when this information is considered sensitive and cannot be released. If SMEs still find it difficult to identify the organisation to approach, the NDA can be contacted directly.

### Pre-qualification requirements

Once the contractor organisation is identified and a successful business relationship established, SMEs will usually be asked to complete a supplier's evaluation process to either pass the qualifications to be put on the tender list or perhaps in the case of prime contractors to become one of their approved suppliers. This usually requires a fairly deep level of information particularly on safety, and evaluations for more than one NDA contractor may not be consistent. The NDA is working with the SLCs to develop a consistent set of generic requirements so that completion of one set of generic questions will be sufficient for all direct contracts with SLCs, and only project specific information would be needed in addition to this. This should be fully in place in the near future.

## Other avenues

### Events

Most of the SLCs hold events throughout the year specifically for suppliers, such as 'Meet the Buyer' or 'Supplier Days', with the aim of bringing suppliers together, and giving the opportunity for SMEs and larger Tier 2 companies to interact. There are also exhibition opportunities for SMEs to show innovations and broader capabilities. SLC events will often give details of future work streams and pipelines, as well as details on how these can be tendered. Usually well attended, these events are an ideal way to meet industry people. The NDA hosts an annual event for suppliers, which brings together all aspects and elements of the supply chain and creates an excellent forum to engage and forge partnerships and alliances.

### Partnerships

Partnering with like-minded companies and organisations can help to make your ideas really innovative. It is also a way of reducing costs and sharing risks. Finding the perfect partner might not be easy but it is worth searching the industry's networks to find it.

### LinkedIn

There is an NDA Estate Supply Chain Group on LinkedIn and enables users to share news in place of which suppliers can join, which has been started to share news across the supply chain<sup>11</sup>.

<sup>11</sup> [http://www.linkedin.com/groups/NDA-Estate-Supply-Chain-4438445?trk=myg\\_ugrp\\_ovr](http://www.linkedin.com/groups/NDA-Estate-Supply-Chain-4438445?trk=myg_ugrp_ovr)

### Supply Chain Charter for nuclear decommissioning sites

The Supply Chain Charter for nuclear decommissioning sites aims to foster good working relations across the NDA Estate's supply chain, with all parties signing up to a set of principles encouraging mutually beneficial and rewarding relationships. Suppliers signing up to the Charter are listed on the NDA website<sup>12</sup>.

### Other nuclear clients

NDA are not directly involved in the existing generation or 'new build' nuclear stations. The Office of Nuclear Development is responsible for supply chain development in the new build arena – they are working with the Nuclear Industries Association (NIA) on developing the UK supply chain for supporting the new build projects. NIA has an initiative [sc@nuclear](mailto:sc@nuclear) with a webpage<sup>13</sup>. EDF Energy, AREVA, Westinghouse and Horizon (the organisations seeking to build any new nuclear stations) have set up dedicated supplier areas for UK companies interested in exploring supply chain opportunities directly with those organisations which can be accessed from the NIA webpage.

There are also opportunities with the Ministry of Defence for decommissioning which will be advertise via their opportunities portal – Defence Contractors Online<sup>14</sup> and also Contracts Finder.

### Devolved Governments

Scotland, Wales and Northern Ireland have their own dedicated public sector procurement websites:

- [Sell2Wales](#)
- [Public Contracts Scotland](#)
- [eSourcing NI](#)

### Solutions Exchange

This is a new Government initiative for departments. Solutions Exchange represents a new way for departments and suppliers to come together in an informal environment and discuss ideas and challenges.

For departments it is a quick and easy way to conduct pre-market engagement and encourage innovation and diversity in the supplier base. Solutions Exchange allows government to put problems, for which it is not yet ready to procure a solution, out there to the market, and ask for their ideas and solutions. It also allows SMEs to pitch innovations and flag up areas of potential future development or interest to government that it might not yet be aware of.

Solutions Exchange is open for any business to use but it is anticipated that it will be of most use to potential new suppliers to government. Additionally, it will help government buyers invite innovation and potentially add greater value into their contracts.

<sup>12</sup> <http://www.nda.gov.uk/contracts/supply-chain-charter.cfm>

<sup>13</sup> <http://www.nuclearsupplychain.com>

<sup>14</sup> [www.contracts.mod.uk](http://www.contracts.mod.uk)



Solutions Exchange contains two important areas for SMEs to be aware of:

**Challenges** – This is where departments will post specific problems or challenges they are facing, and where they are keen to get early ideas from suppliers. It is where government wants to engage the market and discuss innovations and solutions to existing or potential problems. These challenges will typically be part of government's pre-procurement market engagement strategy, where departments are keen to identify potential innovative and useful new proposals from the supplier community.

Challenges may also relate more broadly to government business where it is looking to inform and encourage greater innovation in its project development. Challenges will be updated regularly by departments, so suppliers should check this area of Solutions Exchange regularly.

**Themes** – This area is where suppliers can start a discussion about future public sector needs and pitch their own innovative, cost saving, proposals direct to government. As well as providing a shop window style 'showcase' for suppliers, this is also the place where suppliers can share their views on the future direction or developments within their market sector. Themes can be used to advise departments of new technology, or make them aware of emerging issues that government should prepare for.

Working in the same way as Challenges, other suppliers and departments are able to ask questions or post comments in response to the themes posted and stimulate discussion amongst users.

# Challenges and Barriers

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**The NDA is committed to making the industry more open and penetrable for SMEs. However, SMEs will still face a range of challenges and barriers to bringing their innovations to the industry. This section identifies some of the more commonly identified ones, and gives some guidance on how they may be addressed.**

## Cultures and behaviours

The nuclear industry in the UK has developed with a careful and considered approach since the mid 1950s. Attention to detail and due process has successfully delivered a safe industry but it has not been noted for efficiency or dynamism, particularly in comparison to industries such as oil and gas. For complex reasons of safety and public perception, innovation to achieve cost savings and faster-paced programmes has not always been in evidence.

SMEs that have tried to bring innovation to projects often talk about the culture of the nuclear industry, and the effect that has on the drive for innovation. Typical negative sound bites include: 'Compliant bids only accepted'; 'Not invented here syndrome'; 'Custom and practice'; 'Always been done that way'. This is a conservative industry, where the advantages of innovation are not readily realised by Stakeholders. But SMEs can, and do, achieve amazing success with innovation.

As discussed earlier in this guide, the 'compliant bid only' issue can be combated by setting a baseline case against which innovative alternatives can be judged. This provides opportunities to state the explicit advantages the alternative has over the compliant bid, and to really sell innovation. Where the innovation does not comply with the bid requirements, for example where the proposed solution does not use a prescribed methodology or process, a direct approach to the tender owner through the formal technical query route may be sufficient. Note that in these situations, correspondence may be copied to all parties, including your competitors, so care should be taken in the information provided. The SME that is tendering to a prime contractor might convince them to offer the innovative solution as an alternative bid alongside a compliant one. Whilst innovation may not get through on the first attempt, the experience will have identified the right people to speak to, and might help to ensure they look out for innovative support the next time.

Ideally, innovative ideas should be introduced before formal tenders are issued, so the tender documents facilitate innovative responses. The best tender describes the problem and the end state required – leaving the tenderer with the opportunity and flexibility to introduce true innovation. There are sometimes good reasons why solutions are prescribed – perhaps where specific waste treatment methods have been agreed with regulatory authorities, for example. However, even in these situations there is no reason why good innovation shouldn't challenge the accepted norm.

## Protection for intellectual property

A concern that you might be asked to transfer the Intellectual Property (IP) associated with the very innovation you are seeking to offer, has dissuaded many SMEs in the past. The NDA needs to obtain technology for use across its estate in pursuit of its mission. In many situations, the NDA is likely to wish to own Developed IP (IP that is developed by each SLCs subcontractors pursuant to contracts entered into with the relevant SLC) but NDA and each SLC recognise that there may be circumstances in which it is appropriate for Developed IP to be owned by subcontractors in the supply chain in cases where this will result in added value, and/or lead to its further development. The NDA and SLCs need to have visibility of any Background IP and to have clarity on commercial and other terms for its usage and exploitation, prior to the SLC entering into the contract with the subcontractor. The SLCs also have to comply with the Public Contracts Regulations 2006 which, amongst other things, sets out the principal rules governing SLC procurement strategy and limits the scope for negotiation of contractual terms at later stages of the procurement process.

The SLCs should have a range of terms and conditions to take account of a range of contractual scenarios. These recognise that in certain circumstances it would be beneficial for subcontractors in the supply chain to retain ownership of Developed IP, subject to the NDA being granted rights to use and exploit the IP within the SLC, and, where appropriate, further across the NDA estate. As exploitation of the results of the work often requires access to Background IP, the SLCs' priority is to ensure

that the terms for accessing Background IP are understood and agreed at the outset of the work. In order to address any previous misunderstanding that may have been held by some subcontractors in the supply chain concerning the degree of access required by NDA to Background IP, the SLCs and NDA recognise that supply chain IP is valuable and that many SMEs wish to control the access that they permit to their IP. There may not be a need to seek unrestricted rights to Background IP if this would be commercially unworkable or unattractive to subcontractors, nor to impose any such obligation on lower tier suppliers. What is necessary, however, is to have visibility and acceptance of the commercial terms for such IP and an understanding of any risks or limitations associated with access to Background IP. The SLC will select the most appropriate contractual terms and conditions for the ownership and licensing of IP and incorporate these into draft contracts issued with Invitation To Tender (ITTs). In many cases, it is anticipated that the terms will enable the supply chain to identify terms that it wishes to apply to the use of its IP, noting that these will form part of its commercial offering.

## Consistency across the NDA estate

SMEs have reported a lack of consistency in respect of openness to innovation across the NDA estate. Some of this is a result of differences between the SLCs, and some is due to the different ways that Tier 2 prime contractors engage with their supply chain. If an SME has been successful at introducing an innovative solution with one SLC, then it is frustrating to have the same offering dismissed by another. SMEs are advised to request a meeting with the target SLC or Tier 2 to present the solution, and show how it brought savings to another SLC. Project representatives can also be asked to champion innovations across the NDA estate. There are various cross-SLC forums for sharing experiences and ideas, where such innovations are regularly discussed.

## Insurance requirements

Insurance requirements can be expensive and sometimes challenging to meet. For example, it is not unusual to see a requirement for professional indemnity (PI) insurance of £10,000,000. The NDA has made it clear to their SLCs and Tier 2 suppliers that insurance requirements, and PI in particular, should be dealt with pragmatically and proportionately. This means that PI requests in contracts to suppliers should be scaled down in accordance to the value and risk of the sub-contract. If you are bidding for a contract worth less than £1,000,000, and the PI request is for £10,000,00, then go back to the tenderer and request a reduction. The NDA continue to discuss way in which insurance issues may be further simplified for SMEs in particular.

## Payment terms and retentions

The NDA is publicly funded, and support prompt payment initiatives, with the expectation that contractors within the supply chain pay on the same terms that they have with the SLCs – usually net monthly. Within Government contracting there is an absolute requirement that contractors do not gain financial advantage by withholding payment to suppliers and sub-contractors. Having received reports of 90 and 120 days payment terms, the NDA have now issued an amendment on payment terms and as a minimum would expect sub-contracts to be paid no longer than net monthly. If you see terms in excess of net monthly, they should be challenged with the tendering organisation.

Retentions and Liquidated Damages are other terms that have been identified by SMEs as causing some concern within the subcontracts presented to them. These aspects are not required by the NDA flow-down terms and again, should be challenged if excessive, not relevant or proportionate. The NDA is committed to supporting SMEs and in particular the innovation they can bring. If a challenge to the contracting organisation is rebuffed, take it up directly with the SLC and, if necessary, the NDA themselves. You could always approach one of the members of the NDA SME Steering Group who are here to represent SMEs and have a direct route to the NDA.

# Case Studies

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**These case studies show how SMEs are achieving impressive and successful innovations in the nuclear decommissioning industry. They provide a glimpse of a rich and exciting picture...**

The following case studies demonstrate how the techniques and culture we have discussed within this guide have created innovative solutions within the nuclear and other markets, adding real value on a number of different levels. Whilst we may look initially at cost and programme savings, innovation can also improve performance, quality, safety and environmental performance. Through innovation, most of the organisations included have created a competitive advantage growing their businesses with increased turnover and profit whilst driving efficiencies and adding value to their respective markets.

More detailed information will be available on either the NDA or the relevant company website.

## Company

AJT Engineering

## Project

Thorp Plant medium active salt free evaporator (MASFE) replacement – manufacture of evaporator tube sheets

## Site

Sellafield

## Description

AJT produced an innovative design using its cold extrusion process to manufacture tube sheets for replacement evaporators. The evaporators, which are orientated vertically, contain liquor with nitric acid as part of the medium. Pooling of the acid behind welds on the uppermost tube sheet in the original design reduced the life of these components. The process was used to form seamless integral tube sheets, with smooth flow characteristics.

## Benefits

- **Reduction in cost** and manufacturing time for the production of the evaporators
- 60% saving in material required
- Greatly **prolonged life** of evaporators

### Company

Arvia Technology Ltd

### Project

Treatment solution for radioactively contaminated oils stored at a decommissioning site

### Site

Magnox

### Description

Magnox commissioned a three year programme with Arvia to evaluate the potential of the process to destroy these legacy oils. Consequently, Arvia's technology has been rapidly developed for the destruction of low level waste (LLW) and intermediate level waste (ILW) oil. Following the technology evaluation, Magnox commissioned Arvia to design a plant suitable for the treatment of 2,000 litres of high-alpha oil located at the Trawsfynydd decommissioning site in North Wales.

### Benefits

- The Arvia Organic Destruction Cell (ODC) technology can convert radioactive liquid organic wastes into clean, radioactive water with minimal operational expense and minimal generation of secondary waste
- Most of the radionuclides present in the organic are transferred into the aqueous phase. The remaining active, organic free water can be disposed of via a conventional active effluent treatment plant. The regenerated adsorbent is then suitable for re-use within the system

### Company

ATOS (Tier 2) working with AVM (SME)

### Project

Ministry of Justice video system

### Site

UK wide

### Description

Atos always aims to deliver value to its public sector and corporate clients through the supplier selection process. This means working closely with SME companies, providing our clients with access to a diverse range of ideas and innovations, and making sure we invest in the economic strength of the communities in which we operate. In support of Government policy in this area, Atos is constantly developing methods and processes to increase SME participation within the supply chain for projects we manage.

Typical of a public sector client solution where we worked closely with a specialist SME was a video system developed for the Ministry of Justice (MoJ). This major Atos customer has one of the biggest video networks in Europe serving its Court and HQ locations across England and Wales. MoJ required a new solution to enable vulnerable and intimidated witnesses to give video evidence in court rooms, and Atos responded.

Atos chose to work with AVM, blending the SME company's video conferencing expertise with Atos's first line helpdesk support functions and technology deployment capabilities. We also leveraged our Government sector experience, managing commercial terms and logistical issues so that AVM was able to focus on applying its specialist knowledge to the client's advantage.

### Benefits

- MoJ has been able to use the best of Atos and AVM support to maintain the new video service for more than four years
- 1,300 MoJ endpoints successfully supported
- Transparent contract with automatic extension
- Catalogue implemented for standard services
- AVM has developed and grown its Government business. Sales and support staff specialising in Government projects has increased from four to thirty members

### Company

Britain's Energy Coast

### Project

Working in partnership with Manchester University, the National Nuclear Laboratory, the Nuclear Decommissioning Authority and private investors to deliver the Innovus programme

### Site

West Cumbria

### Description

BEC delivers business support for energy innovation, and funding for physical and skills-related regeneration projects. It also manages a high quality business property service. It aims to create an entrepreneurial environment where businesses can grow, helping to stimulate wealth and jobs that directly benefit the West Cumbrian community and aid Britain's response to the pressing challenges of climate change and energy security.

### Benefits

- Helps businesses and entrepreneurs to commercialise their bright ideas
- Brings together the critical mass of access to funding, world-class facilities and expert technical and business support

### Company

NSG Environmental Ltd

### Project

Nuclear ventilation systems

### Site

Hunterston A Power Station, West Kilbride

### Description

Nuclear ventilation systems traditionally call for fully welded ductwork designed and manufactured to stringent standards. Within an operating facility this is often justified but if the ventilation is in support of decommissioning operations this requirement **can be challenged**. NSG made such a challenge when emptying the miscellaneous retention vaults of 90m<sup>3</sup> of ILW at Hunterston decommissioning site. The design, supply and installation of the ventilation ductwork was programmed to take approximately four months. NSG made a case for using standard 'Jacob' ventilation ductwork which could be purchased in standard lengths 'off the shelf'. The proposal was supported by the design authority and met the requirements of the Plant Modification Proposal and safety case documentation.

### Benefits

- Three month programme reduction
- **Project costs reduced** and decommissioning costs reduced by approximately £50,000
- Eliminated the need for in-situ welding at height and lighter construction meant easier **manual handling**
- By challenging the design the constraint of fully welded ductwork was removed
- Simple use of standard ductwork gave required quality

### Company

PacTec EPS Ltd

### Project

Provision of innovative, sustainable and compliant flexible packaging systems, expediting the transferral of VLLW and LLW from the LLWR national repository to Near Surface Disposal sites

### Site

Multiple

### Description

PacTec introduced to the UK nuclear sector an innovative solution for packaging and disposal of radioactive VLLW and LLW to near surface disposal sites (landfill). This key UK milestone was achieved by collaboration, support principally led by RSRL Harwell, but included other bodies and private companies within the supply chain.

### Benefits

- Solution **costs less** compared to rigid containers
- Easy to load, move and handle
- Potentially reusable
- **Reduces landfill subsidence**
- Environmental tolerance – will not biodegrade (unlike metal which rusts)
- Regulatory paperwork and certificates of conformity in place
- Protocols in place making it **easier for clients** to embed into site procedures and processes
- Sharing of knowledge with USA experience



### Company

Radsafe

### Project

Development of a unified radioactive materials transport arrangements scheme

### Site

Multiple

### Description

Radsafe CLG (Radsafe) is a not-for-profit, limited liability SME company, owned and managed by its 'members' – UK major consignors of radioactive material. Radsafe maintains a 24/7 emergency response for incidents involving radioactive material on road or rail networks. The response is triggered via a single call centre for notification of any incident involving members' radioactive packages.

### Benefits

- Annual work programme is costed, and costs shared amongst members
- ONE scheme where previously there had been many – **cost savings** and a dedicated focal point for transport emergency response with less confusion over responsibilities
- Each member contributes to the emergency response scheme and works collaboratively with other members to maintain and develop it
- Standardised response, regularly reviewed, tested and updated
- Single point of contact for emergency services

### Company

Safety Critical

### Project

Management of radiological waste

### Site

Multiple

### Description

The unique and innovative invention of the Thermal Nuclear Crate Generator ('the crate') is specially designed to house nuclear spent fuel. It can also be used with a number of other similar fuels that can be reprocessed and vitrified.

### Benefits

- Step-change technology allows a new innovative system to provide heat recovery for nuclear spent fuel at all levels
- Simple and robust design
- Easy ALARP argument due to reduction in exposure to survey and maintenance personnel through advanced control system
- Potential economic, political and ethical benefits for deep underground repositories and long-term storage facilities

## Company

Soilutions

## Project

Edinburgh Tram Project

## Description

Within the UK the vast majority of the contaminated soils are traditionally found on small sites. Due to the limitation of space and time, offsite disposal to landfill sites is the preferred choice to remediate these sites. Disposal to landfill is not only environmentally unsound but has become increasingly expensive. Gate fees per tonne have increased from approx. £28/tonne to £110/tonne and are due to increase next financial year and for the foreseeable future due to higher landfill management costs and taxation rises. There is therefore a considerable impetus to provide an alternative solution for the disposal route for contaminated soils, not only for environmental reasons but also to provide a better economic solution which can assist in stimulating the construction sector. Soilution's Soil Treatment Centre, at Torphin West Lothian, offers several solutions to this, through having a PPC licence to accept Non-Hazardous soils that fail Inert WAC.

## Benefits

- PPC licence to accept non-hazardous soils that fail Inert WAC
- During the treatment process it is possible to produce good quality recycled soils and aggregates for reuse, so Soilution will apply for an amendment to the site's current planning permission to allow for remediated soils and recovered aggregates to leave site for reuse within the wider construction market
- Currently materials that are not exported off site are being used for forming the treatment centres' roads, paths, hard standings and for restoring the former inert landfill site

**Company**  
Visionality

**Project**  
Integrated project insurance (IPI) Inclusion in the Sellafield infrastructure strategic alliance

**Site**  
Sellafield

**Description**  
Sellafield sought a long term strategic alliance delivery **partner** for development and delivery of the Infrastructure Strategic Works Programme over the next 15 years. It needed a partner who would be able to deliver long term savings of 40% on time and 25% on gross capital cost. Morgan Sindall Arup won the bid to deliver the Infrastructure Strategic Works Programme and hope that suitable sub-projects will be identified for IPI delivery early in 2014.

**Benefits**

- Based on experiences of exemplar projects, including the FUSION projects, the Strategic Forum Integration Toolkit promises delivery **25% – 40% faster**, with **11% – 30% less capital** required

**Company**  
WallRover

**Project**  
Development trials at Sellafield

**Description**  
WallRover combines a unique concept and an innovative technology, resulting in an award-winning wall climbing vehicle that has significant industrial applications. The product has attracted great attention from the nuclear industry and international technology firms, and last year won an NDA innovation award. The wall-climbing ROV vehicle is capable of carrying a payload of up to five kilos, which makes it versatile for industrial applications. DrillRover is an application developed for the nuclear industry. The base vehicle takes on board a vibrationally isolated hammer action drill that can drill into concrete and collect samples of concrete at various depths, than can then be sent to a laboratory for analysis of radiation contamination.

**Benefits**

- Because it is likely that the top 50mm of a concrete structure will be contaminated, there is great expense in time, manpower and cost to remove it. DrillRover means that in many cases, significantly less than 50mm needs to be removed, resulting in savings and reduction in waste volume disposal
- It can eradicate the need to put humans into potential danger of radiation contamination

# Acknowledgements

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This guide has been compiled by the NDA SG. This is a group of industry professionals with vast experience, who care about the industry and have a passion for the work of SMEs. The group is drawn from all parts and tiers of the supply chain – mainly SMEs, but also Tier 2 organisations, Site Licence Companies, and the NDA.

We would like to acknowledge the help and time given by all the companies who took the time to enter case studies for the Guide.

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# Glossary of Terms

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<b>NDA</b>	Nuclear Decommissioning Authority
<b>CTM</b>	Complete Tender Management
<b>TED</b>	Tenders Electronic Daily
<b>SLCs</b>	Site Licence Companies
<b>SME</b>	Small and Medium sized companies
<b>DSRL</b>	Dounreay Site Restoration Ltd
<b>LLWR</b>	LLW Repository Ltd
<b>RSRL</b>	Research Sites Restoration Ltd
<b>PBO</b>	Parent Body Organisation
<b>Tier 1</b>	The PBO/SLC on an NDA site
<b>Tier 2</b>	Contractors who are the main interface with the Tier 1 companies
<b>VLLW</b>	Very Low Level Waste
<b>LLW</b>	Low Level Waste
<b>PPC</b>	Pollution Prevention and Control
<b>WAC</b>	Waste Acceptance criteria
<b>Background IP</b>	IP that is owned by or licensed to a subcontractor that relates to deliverables under a particular subcontract and is required to exploit such deliverables
<b>ITT</b>	Invitation To Tender

# Website Links

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<http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/sme-definition/>

<http://www.fsb.org.uk/stats>

<http://www.nda.gov.uk/documents/upload/SME-Regional-Steering-Group-Terms-of-Reference.pdf>

[www.hmrc.gov.uk/ct/forms-rates/randd.htm#2](http://www.hmrc.gov.uk/ct/forms-rates/randd.htm#2)

<https://www.innovateuk.org/-/sbri>

<http://www.nda.gov.uk/>

<http://www.nda.gov.uk/contracts/working-with-slcs.cfm>

<http://suppliers.sellafieldsites.com/files/2012/12/Programme-Exec-Summary5.pdf>

<https://www.gov.uk/contracts-finder>

<http://www.tenders.eu/>

[http://www.linkedin.com/groups/NDA-Estate-Supply-Chain-4438445?trk=myg\\_ugrp\\_ovr](http://www.linkedin.com/groups/NDA-Estate-Supply-Chain-4438445?trk=myg_ugrp_ovr)

<http://www.nda.gov.uk/contracts/supply-chain-charter.cfm>

<http://www.nuclearsupplychain.com>

[www.contracts.mod.uk](http://www.contracts.mod.uk)

## **NDA Supplier Section:**

<http://www.nda.gov.uk/contracts/>

## **Glossary of Nuclear Terms:**

[http://www.burges-salmon.com/Sectors/energy\\_and\\_utilities/nuclear/News/10377.aspx](http://www.burges-salmon.com/Sectors/energy_and_utilities/nuclear/News/10377.aspx)

## **LinkedIn:**

<http://www.linkedin.com/groups/NDA-Estate-Supply-Chain-4438445>



