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The Nuclear Education Trust (NET) is a charity whose goal is to inform the public about nuclear weapons and related issues through commissioning research that includes an appropriately balanced range of viewpoints.

Barrow like some other local economies are highly dependent on nuclear weapon defence related industries. The “Maingate” decision due to be taken in Parliament in 2016 on the replacement of Trident highlights this fact. Meanwhile the Cabinet Office is currently taking forward a Trident Alternatives Review which is examining whether there are options other than a like for like replacement of Trident.

The review is being conducted in private – and will not report until late 2012 or early 2013. Its terms of reference are:

- Are there credible submarine-based alternatives to the current proposal, e.g. modified Astute using cruise missiles?
- Are there alternative nuclear postures, i.e. non-CASD [continuous at-sea deterrence], which could maintain credibility?
- Are there credible alternatives to a submarine-based deterrent?

The purpose of NET’s survey and research would not be to advocate for - or against - replacing Trident. It will however take evidence and listen to a spectrum of views on the economic future for Barrow in the public knowledge that the current Trident Alternatives Review is currently considering options that potentially have implications for Barrow.

The independent survey and research, and its findings, will:

- provide a genuine independent attempt to look at the impact of the Trident Alternatives Review options on Barrow’s future economy and its communities and in particular provide a genuine independent attempt to look at the issue of diversification both at Barrow and within its supply chain; and make recommendations
- gather perspectives and views from a range of stakeholders and policy makers including; businesses, communities, trade unions, parliamentarians, local government, academics, economists and others
- provide a timely opportunity to inform the Trident Alternatives Review and future policy development

The Inquiry would examine the following specific key questions:

- the economic and industrial alternatives resulting from options other than a like for like replacement of Trident?
- the economic and industrial considerations in taking forward an active policy of diversification both for Barrow and its supply chain
- what can be learnt from previous initiatives to diversify and/or regenerate the Furness peninsula
- the scale and type of investment and commitment that is required by Government – and others - to sustain and develop jobs and skills in Barrow?
- the other actions that might be taken – by wider partners and civil society – in response to the need for diversification
- whether there are lessons that can be learnt from comparable international programmes.
Trident Alternatives Review and the future of Barrow
Volume II

EVIDENCE RECEIVED
1. What are the economic and industrial implications resulting from options other than a like for like replacement of Trident?

- Barrow remains a traditional, even patriarchal, society that looks to the shipyard which puts its stamp on everyone’s lives. Removing it would therefore be very profound – to some extent it would be like removing the ground upon which the town is built.
- In fact the future of the yard has not been secure over the last twenty years during which numbers have been run down dramatically and reached 2,800 at one point (2003).
- During that time a range of alternatives have been considered and of course a number of regeneration initiatives begun. It is only recently – with the prospect of the successor to Trident programme - that the search for other options has fallen back a little.
- The College has a crucial role in relation to the yard with 350 apprentices who are based there and at Furness College. These would clearly be vulnerable to any reduction in activity at the yard.
- The last time the shipyard contracted the percentage of College students who were adult increased hugely and we found that more women were coming – to do access courses including teaching and nursing – as they, rather than their “redundant” husbands, sought to get the skills to get work.
- It is not the case, by the way, that as some would suggest only 17% in Barrow achieve university degrees. 17% refers to the numbers going away to university but a similar percentage remain here at Furness College and secure universities accredited by University of Cumbria, Lancaster University and Uclan. Furness College is the first and only college to appoint research lecturers.
- There is a well-educated and generally well paid workforce here.

2. What are the economic and industrial considerations in taking forward an active policy of diversification both for Barrow and its supply chain?

- Although Barrow is not included in the Energy Coast initiative, it is responsible for some huge energy initiatives in the area – it has the two largest offshore wind farms in the world, it already has a gas powered electricity generation and there are plans for a biomass station. However apparently the Energy Coast Initiative ends at the border with Copeland.
- This severely impacts on the College which is not able to access funding from the Britain’s Energy Coast which is frustrating. Barrow appeared to be included in initial documents but was excluded from the final version and now seems to have been excluded permanently.
- There are key infrastructure improvements that would assist Barrow in its remoteness – for example improvements to the A590 and to the rail connection e.g. electrification.
- There is some ambivalence regarding the Bridge across the Bay proposition – to some extent the unique peninsula quality of life, including low crime, is protected by its remoteness but on the other hand it would help, if the shipyard were to decline, to become leaders in green energy and sustainable construction.
- There are other strengths in the Furness local economy, for example Oxley’s who have used optoelectronic technology to become world leaders in night vision, which has further given rise to an increasing number of companies specializing in LED technology.
- There are other opportunities that are perhaps not widely understood – entrepreneurship in the creative industries especially where technology related such as digital media; land mine detection technologies.

3. What can be learnt from previous initiatives to diversify and/or regenerate the Furness peninsula?

- As indicated previously there has in fact been quite considerable efforts to diversify with a call centre on the same business park here as the College as well as the spin off industries and in the past the attraction of Kimberly Clark and others to the area.
• Overall I would say that too much has been spent on small things and on buildings and not enough on big things – such as the rail connection or to lever in the inward investment from big businesses that are required.

4. What is the scale and type of investment and commitment that is required by Government – and others - to sustain and develop jobs and skills in Barrow?

• Again as indicated previously the Government would need to provide significant support with big incentives for big business and for example it could very easily permit Barrow to access the £90 billion nuclear decommissioning market through the NDA.

5. What other actions might be taken – by wider partners and civil society – in response to the need for diversification?

• There is clearly a key role for the College both now and as the economy evolves over the future but all partners in Barrow and Cumbria would have a role.

6. What are the lessons that can be learnt from comparable international programmes?

• Not our area of expertise
1. What are the economic and industrial implications resulting from options other than a like for like replacement of Trident?

Any alternative policy to “like for like” replacement of Trident is going to be cheaper. I suggest that if much of the savings are invested in renewable electricity generation not only could this help the Barrow shipyard to diversify but UK security could be enhanced for at least two reasons:

- In Ref. 1 below I argue that the renewable technologies, and wind and PV in particular, will become a major force for economic and political development in the poorest parts of the world. Participating in these developments could lessen the terrorist risk to the UK and reduce the risk of the UK being drawn into conflicts in unstable regions such as the Middle East.
- In Ref. 2 below I argue with colleagues that experience from Germany suggests that renewable technologies are now so well developed that a moratorium on all forms of electricity generation apart from the renewable technologies is possible here and now. Were this implemented in the UK this would give many commercial opportunities for a diversified Barrow. Also the UK nuclear industry could concentrate on finding a solution to the nuclear waste problem and in particular the 100 tonnes of separated plutonium at Sellafield. That would make the UK, and Barrow in Furness in particular, much more secure from possible terrorist attacks.


2. What are the economic and industrial considerations in taking forward an active policy of diversification both for Barrow and its supply chain?

First identify which of the many renewable energy technologies the spread of engineering skills and expertise at the shipyard best match. I am not a marine engineer but I do have expertise in PV and wind-power. It seems to me that the following are options:

- Off-shore wind power: foundations, mounting, turbines, cabling and support infrastructure.
- The mirrors and tracking of large, high-concentration photovoltaic systems (CPV) and concentrated solar power systems (CPS). Though these initially are only going to be economic in the South-West UK export opportunities are going to expand rapidly as the technology catches on in sunnier climates.
- Tidal power systems. The UK has half of Europe’s tidal power resource.
- Wave power systems. The UK has one third of Europe’s wave power resource.
- Deep geothermal power. Though, like PV, not in DECCs top eight renewable technologies, export opportunities will expand to countries like Germany where estimates put the geothermal resource as 600 times the German demand.
- Some of the expertise useful for 5) could also be helpful in solving nearby Sellafield’s waste problem. The government is committed to spending £2B per year indefinitely on this and spent £7B in 2010.

3. What is the scale and type of investment and commitment that is required by Government – and others - to sustain and develop jobs and skills in Barrow?

In the past decade I have co-founded two UK solar cell companies. QuantaSol used novel nano-structure technology developed at Imperial College London to enhance the efficiency of 3rd generation concentrator solar cells. QuantaSol succeeded in achieving 40% cell efficiency in production. Current 1st and 2nd generation panels are around (12-14%) efficient. QuantaSol was one only two companies to be qualified by the leading US concentrator manufacturer. An order for 1 MW of cells was received. Of particular interest to this review is the fact that the only other company whose cells were qualified by the US manufacturer was Spectrolab the market leader and a spin-off from another large-scale engineering company; Boeing.
Despite these successes QuantaSol was sold against the companies wishes to JDSU a leading US semiconductor company in 2011. The company is now manufacturing our cells with 41% efficiency. These experiences lead me to suggest in answer to this question:

- The government investment and commitment to renewable companies and Barrow should be as big as its commitment to military hardware companies, the nuclear industry and nuclear waste. At the time of the credit crunch the government bailed out Sheffield Steelmakers and Rolls Royce in order to keep open a nuclear power option with over 50 times more funding than would have kept my company going.
- At two crucial occasions in QuantaSol’s 4 year history we had technical issues with the conventional part of our cell which a UK National Solar Laboratory like the Frauenhofer ISE in Germany could have helped QuantaSol resolve. One was when trying to hit a technical milestone which would have opened up large amounts of international venture funding. However, the UK does not have a National Solar Laboratory and we could not go to Fraunhofer for help as they were helping our German competitors. The government should fund National R&D Laboratories in all the major renewable technologies like the Fraunhofer laboratories in Germany. This would greatly help new renewable energy industries in the UK. Barrow should aim to be a National Laboratory in one of the renewable technologies which they choose.
1. What are the economic and industrial implications resulting from options other than a like for like replacement of Trident?

- Economically the implications would be very significant, acute
- BAE Systems is a very major employer that sustains a significant supply chain
- From an industrial perspective, it would mean the UK would exit a submarine design and manufacture capability
- Not at all convinced that if an alternative nuclear weapon delivery system were adopted eg by air or from land that the jobs required to design and build these would be based in the UK – so overall the UK would strategically be more dependent on
- Assuming that replacement for the Vanguards are built in Barrow the replacement for Astute SSNs might then be built after that production cycle ceases (about 2037)

2. What are the economic and industrial considerations in taking forward an active policy of diversification both for Barrow and its supply chain?

- The UK faces a “binary” situation – significant submarine capacity or not. Impossible for diversification to pick up the gap between those two so diversification is not the answer
- Diversification within the supply chain is however possible – some very good suppliers/manufacturers in Cumbria and it a LEP priority to assist this into the future

3. What can be learnt from previous initiatives to diversify and/or regenerate the Furness peninsula?

- Initiatives that will be most successful are those that help existing businesses to develop – like GSK at Ulverston.
- Various bodies came together very well to secure that investment – four sites were in the frame
- Building business parks – like NWDA did on the Waterfront – does not automatically generate investment and jobs. No one is there
- Sector most likely to grow are those specialist manufacturers where a key area of expertise

4. What is the scale and type of investment and commitment that is required by Government – and others - to sustain and develop jobs and skills in Barrow?

- If submarine production continues then this is a very material investment – also aware of other public investment eg the new Furness College- but then really for private sector best placed to lead on jobs and skills investment
- If submarine production is coming to an end then the Government would be required to provide support for a transition including a task force with funding for skills training and relocation

5. What other actions might be taken – by wider partners and civil society – in response to the need for diversification?

- Clear that all parties – organisations – need to work together to ensure that Furness is a good place to invest, work and live
- BAE Systems are correct to currently focus on completion of Astute so at the moment no requirement on them to diversify into the more general markets of refits and ships (which are very competitive anyway and, as lower added value, do not provide the quality jobs that submarine production does

6. What are the lessons that can be learnt from comparable international programmes?

Not aware of any
1. What are the economic and industrial implications resulting from options other than a like for like replacement of Trident?

- Very significant social and economic consequences unless there is a plan to replace the advanced manufacturing lost – this is an area of entrenched and excellent engineering and has been for over a hundred years
- There is a very strong dependency arrangement arising from succession of MOD contracts: dependency by MOD on BAE Systems and vice versa
- Important to recognize that a decision not to proceed in 2016 would not lead to an immediate “switch off the lights” moment – there are orders to 2024 so would be time to plan

2. What are the economic and industrial considerations in taking forward an active policy of diversification both for Barrow and its supply chain?

- Environmental technologies such as low carbon lighting where it already has some first mover advantages
- Skills and resources in Barrow could be used in relation to nuclear and its decommissioning
- There would also be wider options including call centres, developing the airport on Walney Island and attracting public sector relocation

3. What can be learnt from previous initiatives to diversify and/or regenerate the Furness peninsula

- The Government in 1999 committed £100 million and set up the Barrow Task Force to try and make the town more resilient to economic shocks. This focused largely on higher value manufacturing and engineering rather than adopting a scatter gun approach. Building on indigenous strengths was seen as the right approach.
- The NWDA also tried to promote transformational change in the period up to 2011 including big regeneration projects – the development of a Waterfront and Marina Village, Ramsden Business Park and the construction of a new FE College on the site of the old steel and iron works
- It also recognized the importance of supporting indigenous enterprise with grants to support Furness Enterprises and that the town centre leisure/retail/culture offer is very important to a place’s future particularly as they will affect young people’s attitudes – a successful ‘Talented Minds’ public realm focused project was also supported

4. What is the scale and type of investment and commitment that is required by Government – and others - to sustain and develop jobs and skills in Barrow?

- A Barrow without submarine construction would require a long term plan – and a special body with significant powers and crystal clear that its focus was the regeneration of the area.
- This body must be on the ground – not talking about tinkering from Whitehall! But would require support from Whitehall eg relocating some civil service functions such as Home Office
- It would also require significant resources – clearly more than the £100million committed previously.

5. What other actions might be taken – by wider partners and civil society – in response to the need for diversification?

- It will be important for the District and County Councils, the new Furness College, the University of Cumbria and indeed the local NHS (which is very significant) all to line up behind a plan for Barrow – also partners a little further afield eg Sellafield and Nuclear Decommissioning Agency as well as Lancaster University would all need to be involved
Also very important that European support maximized eg ERDF funds. Historically Barrow has accessed dedicated funds eg Objective 2 in 2000 to 2006 but recently (2007 – 2013) all in with rest of North West. Next round Cumbria will helpfully get “transition funding”

Community leadership within the Town very important as well BAE Systems itself which has an important Corporate Social Responsibility role

6. What are the lessons that can be learnt from comparable international programmes?

- Possibly worth looking at Gdansk – which is similarly isolated and where over ten years planned to move shipbuilding to wider advanced manufacturing.
- In UK Hull and Grimsby have, or are trying to, transition from fishing ports to environmental technologies but smaller scale and arguably less successful.
- Final thought: you do need to think big. The Bridge across the Bay public/private project – linking Barrow and Lancaster across Morecambe Bay does have the potential to transform the economy.
1. What are the economic and industrial implications resulting from options other than a like for like replacement of Trident?

- The town is clearly substantially dependent on submarine building.
- The need for submarines depends on how we deem best to provide for our security. There are currently a number of dynamics in play – not just the Trident Alternatives Review but the possibility of a new round of multilateral negotiations, especially if Obama is re-elected. I believe in multilateral nuclear disarmament.
- If that happens, the UK and other countries with nuclear weapons should be at the table, which means being willing in the right circumstances to negotiate about current – or planned – nuclear weapons capabilities.
- Because we are an island state which must not be dependent on others for our own defence, we need to be clear about what military production capabilities we must sustain. If we decide that we need military submarines – conventionally or nuclear armed – then we will need the Barrow shipyard.
- However it is clear that the “drumbeat” of submarine production has already declined from the days of the Cold War and it is unlikely to be sustainable at the current desired rate of 18-24 months per submarine given the global economy, the UK deficit and the other demands on the MoD budget.
- The MoD like all Departments has to work with finite finances and therefore must make choices. During Afghanistan protecting frontline troops has needed to be prioritised. It is therefore significant that the Treasury are no longer funding the capital cost of the replacement for Trident, but it must be found from the MoD budget – a process that began in 2011 following the Strategic Defence Review when the Coalition Government committed £750 million from the MoD budget to early work on the replacement for the Vanguards.
- That all said, as stated before, we have to be very careful that as long as there are nuclear powered submarines we will need Barrow.
- But the choices facing whoever is in Government in 2016 – facing possible hospital closures, reducing police numbers, welfare cuts etc, never mind the other pressures on the MoD will make it very difficult to commit to spending at the sums involved to build the full complement of replacements.
- After the 2015 general election, there is a very strong likelihood therefore that there will be another Review, another attempt to put off a final decision - as the Coalition has already done. Further delay will make a decision to proceed more difficult and I believe it is important any decision not to proceed is not taken by default.
- Hopefully the Trident Alternatives Review will help a conscious, deliberate and well informed policy making process by examining all the options and perspectives – costs, defence capability, long term infrastructure requirements as well as industrial impacts. Presumably it will also look at the possibility that submarines as our preferred platform for deterrence may become compromised, possibly obsolete, due to technological advances in tracking, in other words the sea may no longer be opaque.
- But regards Barrow what we can conclude is that the current drumbeat will not continue indefinitely. Therefore however hard it is to face up that fact, it is better to face up to it now rather than later.

2. What are the economic and industrial considerations in taking forward an active policy of diversification both for Barrow and its supply chain?

- If submarine production ends or continues at lower intensity - ideally Barrow’s future would remain in shipbuilding and heavy engineering. It would want to take advantage of its port, its location and its history of shipbuilding. However one problem is that all major civilian shipbuilding has stopped in UK and military budgets worldwide are in decline so building warships is also unlikely.
- As discussed one option for Barrow would be to produce more Astuties, but remember the current order was reduced from 11 to 7 in part due to cost pressures.
I am not in favour of equipping Astutes with nuclear missiles. I am not sure it will be found to be a viable option and I am not convinced it could provide the degree of invulnerability required for a strategic deterrent. Also nuclear arming Astutes gives the wrong message in an era where non-proliferation is a key global goal i.e. it suggests that you can have nuclear weapons on the cheap.

Clearly if Barrow is to plan for a future less dependent on MOD orders for submarines it will need improved infrastructure; communications – road, rail, IT – and new employment opportunities: diversification including building on its nuclear know-how.

Certainly those with technical nuclear and engineering skills will be in demand given the commitment to nuclear power generation new build. Clearly the existing Barrow work force has transferable skills which should be in demand.

Finally it is worth saying that should Scotland vote yes for independence – which none of the polls so far has pointed to - it is very unlikely that what is left of the United Kingdom will continue to order warships from the Clyde and Barrow does have the shipbuilding skills. That could be a lifeline but those who put their hopes in this may be very disappointed.

3. What can be learnt from previous initiatives to diversify and/or regenerate the Furness peninsula
   - Not my area of expertise

4. What is the scale and type of investment and commitment that is required by Government – and others - to sustain and develop jobs and skills in Barrow?
   - In order to diversify to a local economy that is less dependent on submarine orders, and indeed in order to retain some submarine capacity as is likely whatever decision is taken regards replacing the Vanguard (Trident) submarines, would require Government commitment.
   - Earmarking money for Barrow is however difficult because the money is not necessarily saved – but more likely would be spent on other MoD priorities. But clearly some regeneration funding would need to be found.

5. What other actions might be taken – by wider partners and civil society – in response to the need for diversification?
   - The key issue here is that people rarely want to contemplate very difficult decisions although no person can stop time. It is a very brave politician that will go to electorate and say “this will not happen for ever” as understandably people want to campaign for the retention of what they know.
   - But the problem with that approach is that ultimately you will hit a crisis – suddenly a major employer withdraws as happened for example at Ravenscraig when 18,000 or more people lost their jobs and the town is still recovering from that shock.

6. What are the lessons that can be learnt from comparable international programmes?
   - Again not my area of expertise and it is the case that regeneration is very difficult but in Barrow’s situation what is crucial to grasp is that we can anticipate the need to shift production away from reliance on one employer and we can plan.
   - In Barrow’s case it’s a plan that probably won’t need to take full effect until 25 years’ time but that does not mean we should put it off.
Trident Alternatives Review and the future of Barrow
Volume II

Professor Andrew M Dorman
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Written evidence submitted on 2 October 2012

Introduction

It is an apposite time to reflect on the current status of the ‘Trident Alternative Review’ and the future of Barrow for three reasons. First, the former is linked directly to the Liberal Democrat element of the current coalition government and in the September 2012 government re-shuffle it was noticeable that in the re-shuffling of junior posts the post of Minister of the Armed Forces, which had been held by the Liberal Democrat Nick Harvey, was replaced by the Conservative Andrew Robathan.¹ As a result, the Liberal Democrats have no minister in the Ministry of Defence (MoD) and the individual tasked with overseeing the Trident Alternative Review is now a Conservative committed to a like-for-like replacement of the existing force of ballistic missile carrying submarines.

Second, running in parallel with this has been the on-going moves of the Scottish Nationalist Party (SNP) towards having a vote on the repeal of the Act of Union. If successful the implications for the current United Kingdom (UK) nuclear deterrent and the future of UK shipbuilding are quite significant. The continuing basing of the entire British nuclear submarine fleet and the important storage and loading facilities for the Trident warheads at Coulport is highly unlikely.² If the remainder of the UK³ decide that it wishes to retain a submarine based nuclear deterrent then Barrow is one of the leading options for the location of the requisite nuclear facilities. Moreover, an independent Scotland would mean that Scottish shipbuilding yards would no longer be in a position to compete for warship orders from UKr on the same basis as the shipyards in UKr. Only if a UKr government chose to order warships outside the UKr (which it has only done during World Wars) would the Scottish shipyards be able to compete for such contracts alongside shipyards from across the globe including Germany, France, Spain and South Korea. The UKr government is more to continue the policy of acquiring new warships from domestic suppliers then Barrow would be in a much stronger position to potentially win orders for the new Type 26 frigates scheduled to enter service after 2020. In other words a Scottish vote for independence e is likely to result in a significant economic windfall for the Barrow yard.

Thirdly, in ordering four tankers for the Royal Fleet Auxiliary from South Korea the government has indicated that for non-complex warships it is not prepared to put jobs ahead of price.⁴ Previously Royal Fleet Auxiliaries have been built in the UK most recently the Wave Class tankers (one constructed at Barrow) and the Bay class amphibious ships. This has significant implications for the future of British ship-building which is already struggling with over capacity. Once the current aircraft carrier and Type 45 destroyer programmes are completed before the end of this decade the only three major warship programmes will be the Type 26 frigate currently in the process of review and the Astute and Trident successor programmes.⁵

Trident Alternatives Review

The removal of Nick Harvey from the post of Minister of the Armed Forces in the MoD would seem to confirm that the Trident Alternative Review has, to all intents and purposes, been shelved with the acquiescence of the leadership of the Liberal Democrats. Thus the review is likely to be as thin in its findings as just the previous Labour government’s white paper on the replacement of the nuclear deterrent was.⁶ Its conclusions, no doubt, will be to carry on with the existing policy. Thus alternative proposals, such as the equipment of a force of Astute-class SSNs with a nuclear armed cruise missile

¹ The analysis, opinions and conclusions expressed or implied in this paper are those of the authors and do not necessarily represent the views of the Joint Services Command & Staff College, the United Kingdom’s Ministry of Defence or any other government agency.
³ SNP defence policy has traditionally been anti-nuclear and anti-NATO with pledges to immediately close the nuclear facilities on Scottish soil. Recent statements from the SNP leadership have been a little more circumspect and there is now a proposal that an independent Scotland would retain membership of NATO if the Trident submarines and associated facilities are withdrawn. The inherent contradictions of the new policy in which the SNP would only commit to retaining a submarine based nuclear deterrent was.
⁵ There is no agreed term for what is left of the United Kingdom should Scotland leave and there may be question whether the other elements of the UK also divide. For this paper I have assumed that the remainder of the UK remains intact and refer to this as UKr.
(potentially a modified TLAM), seem unlikely to succeed. In part this is due to the lack of a wider debate about the relative merits of the UK retaining a nuclear capability and the form it should take. The emphasis on abolition within the anti-nuclear lobby has choked out any real debate about alternatives.

Some debate remains about whether the future force of ballistic missiles will be reduced to three boats rather than the current force of four. This is entirely possible if the economy continues to remain at best sluggish and the MoD suffers from further cutbacks as a result of the next spending review scheduled for 2014 and/or its failure to make the savings it has already promised through efficiencies and asset sales. Whilst any Conservative government is likely to remain strongly supportive of the retention of a nuclear deterrent in its current form there are some within the senior leadership of the armed forces who are questioning whether the cost of a fourth boat is worth lost capability elsewhere. This is particularly true given that there is general feeling within Whitehall that defence was let off remarkably lightly in the 2010 spending review with a real term cut of only 7.5% compared to all other departments except health and international development.8 The problem with a 3-boat force is that to maintain the policy of retaining one boat always at sea is risky with only 3 boats. The loss, temporarily or otherwise, of a single boat would bring this to a rapid end. Here the recent collision of French and British ballistic submarines served as a timely reminder to the government and Naval Staff of the potential risks associated with a 3-boat force.9 Thus the retention of a four boat force looks like the most likely scenario.

**Future of Barrow**

For Barrow the current nuclear build programme comprising the Astute-class of seven SSNs followed by a new generation of ballistic missile carrying submarine (SSBN) looks set to provide work until at least to the early 2030s. The problem Barrow might then find is another gap in production, similar to that between the Trident class being constructed and the new Astute class, until the Astute class of SSNs need to be replaced from about 2040 onwards. The basic problem is that a force of 11 boats (7 Astute SSNs and 4 Vanguard SSBN successors) is simply too small to sustain the production facilities at Barrow and keep the core skills alive that are needed. It should be remembered that during the last decade of the Cold War the Royal Navy planned to maintain a force of 18 SSNs, 4 SSBNs and 10 or so conventionally powered submarines. This meant that a new nuclear submarine was ordered every 18-24 months.

To sustain the current work force therefore requires additional work to pass through the shipyard. In the past it has constructed major warships including Invincible-class aircraft carriers, Type 42 destroyers and the Albion-class LPDs. The problem British shipbuilding is confronted by is a Royal Navy that has shrunk to a force of 19 destroyers and frigates (before the 1981 defence review the figure stood at over 60) and a failure to sell major warships overseas except second-hand. As a result, there are too many shipyards chasing too few orders and this, in part, explains the rumours about BAE Systems further consolidating its shipbuilding capacity with the yard at Portsmouth looking most likely to close.10 The Type 26 programme is currently under development with BAE Systems leading on the design phase with plans for 13 frigates to be constructed on a one-for-one basis as replacements for the current Type 23s. If history is anything to go by then it is extremely unlikely that 13 frigates will be ordered, plans to replace the 12 Type 42 destroyers with a similar number of Type 45 has actually resulted in only six ships being ordered. Unless there is a major rebalancing of the defence budget in favour of the navy at the expense of the air force and army Barrow looks set to remain in the submarine business but with little hope of other work unless the SNP are successful and the two Scottish yards are taken out of the equation. Similarly, obtaining other defence work might be problematic. The construction of the 179 AS-90 self-propelled guns in the early 1990s is unlikely to be repeated as BAE Systems increasingly divests itself of the land systems business in the UK as a result of a lack of orders. Moreover, the proposed merger of BAE Systems with EADS might see the

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Trident Alternatives Review and the future of Barrow

Conclusions

The Trident Alternatives Review has effectively ended with the loss of Liberal Democrat leadership within the MoD. By the time of the next election the choice for the next government will Trident successor as currently articulated or nothing. Similarly, Barrow seems set to remain in the construction of future generations of navy submarines but there are serious question marks about the sustainability of this in the long term. Two other factors might change all this. First, a Scottish vote to repeal the Act of Union would be really beneficial to Barrow and likely to result in a major expansion of existing facilities with the permanent basing of the Trident force, its successor and infrastructure at Barrow. Secondly, if the BAE Systems-EADS merger is allowed to go forward it is quite possible that the shipbuilding facilities at Barrow will be sold off as part of a post-merger consolidation.
Summary of interview held on 12 September 2012

1. **What are the economic and industrial implications resulting from options other than a like for like replacement of Trident?**

- I don’t agree that if we don’t proceed with the replacement of the Trident (Vanguard) submarines it means the death of the UK’s capacity to build nuclear-powered submarines. The challenge is to decouple the two decisions; the pro-Trident lobby prefers to elide them to improve the chances that a future SSBN will be constructed.
- Can proceed with the construction of Astute Submarines as clear that Royal Navy would wish to see ultimately twelve NB these would not be armed with nuclear weapons - as there is no scenario where these increase our security - but for conventional military use.
- BAE systems at Barrow could also build Astute type submarines for Canada (who have been told cannot buy from USA and have no indigenous submarine industry) and, probably less likely, for Australia.
- If Astute construction continued until late 2020s then the net impact on the Barrow economy would be limited; indeed, if drumbeat were upped on Astute, it could have a positive impact on the local Barrow and supply chain employment.
- The argument that building replacement to Vanguard is absolutely essential to continue a submarine building capacity is not true but it is used as an argument by those who wish to bolster their pro replacement arguments.
- It is very woolly thinking to advance the idea that £100billion (the through-life cost of Trident replacement) or even £35bn (the probable cost of the new SSBNs) needs to be spent in order to maintain a skills base at Barrow - that skills base can be retained at a much reduced cost. Probable cost of future of Astute SSNs is £1.2bn per boat.
- Indeed one issue that should be looked at in more detail is the commonsense proposition of nationalizing submarine production. Currently BAE is a monopoly supplier so in effect the Government is transferring public money into private sector profits.

2. **What are the economic and industrial considerations in taking forward an active policy of diversification both for Barrow and its supply chain?**

- In the above example there would be no overwhelming need for diversification as submarine production would continue albeit not the SSBN class. Any diversification would of course be welcome.

3. **What can be learnt from previous initiatives to diversify and/or regenerate the Furness peninsula?**

- Very little opportunity for diversification – there is no civilian market for submarines. Entering the competitive surface ship-building market has proved very difficult for BAE Systems on the military (let alone the civilian) side as they are used to closed market - in fact monopoly supplier.
- It would be expensive to regenerate the area however clear that the savings from not replacing Vanguard would mean the current 5,000 workforce could be given a ten million pounds each and that still only adds up to half the total cost to the taxpayer.

4. **What is the scale and type of investment and commitment that is required by Government – and others - to sustain and develop jobs and skills in Barrow?**

- As said above, the Government could and should maintain a submarine building capacity but this can be done by ordering more Astutes and by assisting BAE Systems to win overseas orders.

5. **What other actions might be taken – by wider partners and civil society – in response to the need for diversification?**
As indicated above, BAE itself could seek to win new orders rather than be dependent on being given the contract to replace the Vanguard submarine.

6. What are the lessons that can be learnt from comparable international programmes?

- Not my area of expertise but extensive literature exists especially after the Cold War as well as more local examples eg the closure of tank factories and Brough in Hull.
The points below seek to address the six questions posed – although not necessarily exactly in the form or order as set down.

The economic and employment consequences of not continuing with Trident replacement

The group of employees most immediately affected at Barrow would be the design staff currently employed on preparatory concept work – much of it in conjunction with design work in the US. This group would amount to approximately 700 staff. Another 4,000 management, support and craft-skilled staff would be at risk once work on the final Astute class submarine is finished in approximately four to five years’ time [it should also be noted that Barrow is currently BAE’s main centre for ship design across the UK and if this continued a significant number of jobs would be preserved]. At Rolls Royce Derby approximately 1,000 staff involved in preparatory design and development work for the new nuclear reactor would also be at risk – although here many could be re-absorbed into other aspects of the firm’s work as such specialist skills are in short supply. Of the specialist subcontractors only McTaggart Scott in Edinburgh (250 workers) is highly dependent on naval submarine work. Economically, if no counter measures were taken, the consequences would be most severe for Barrow with up to 4,700 direct job losses and another 2,000 plus as a result of induced job losses in the regional economy (using a multiplier of 0.4).

Previous initiatives to diversify

The most significant diversification proposal was that put forward by trade union representatives from the Barrow shipyard in 1989-1990 at a time when it employed 13,000. These proposals called for focused R&D expenditure on wind and marine energy technologies to create a centre of excellence in industrial fabrication. Had these proposals been implemented they would have been initiated ahead of similar programmes by the Danish and German governments which have now given these countries a world lead in wind-related technologies. At Barrow subsequent cuts in UK naval budgets led to a fall in employment to 3,000 over the following decade.

This underlines the key importance of diversification investment that is both industrially-based and relevant to commercial civilian markets even in regional economies currently sustained by defence-related employment. An exclusive focus on defence-related research renders firms and their associated communities fatally vulnerable to changes in defence budgets.

BAE’s current problems as a company relate directly to its lack of any significant production for civilian markets in face of globally contracting defence budgets. Nor does it any longer have any R&D that is directly relevant to civilian markets. The dominant investors in BAE have shown themselves primarily interested in relatively short-term profit horizons requiring the company to divest itself of low profit activities. This directly threatens communities such as Barrow (Vincent Boland and Stuart Kirk, BAE-EADS, Financial Times, 9 October 2012).

The current Cumbria Sub-Regional Action Plan, while welcome and very significant if fully implemented, is primarily focused on developing services, infrastructure and tourism. It has therefore been vulnerable, in terms of the multiplier effects of its expenditure, to downturns in the wider economy and particularly to the housing market.

Lessons from comparable international programmes

The most direct comparison is with the Base Realignment and Closure programme undertaken by the US Federal government under legislation which makes it mandatory for planning to take place five years prior to the closure of any military base in the US to ensure that full re-employment is provided. Over 100 bases, of varying sizes, have been closed since the initiation of this programme. Studies by the US Congressional Budget Office, among others, have shown a very high level of success in sustaining employment. This indicates the importance of long-term prior planning and investment that is specifically geared to the identified needs of civilian markets.
Other comparable programmes would be those undertaken in countries committed to a Just Transition programme for a reduced carbon economy, Spain and Argentina, and the active programme initiated by the German Federal Environment Ministry to ensure that Germany becomes ‘the world’s major energy efficient producer and environmental engineer’. This resulted in in a 50 per cent increase in employment in these areas between 2004 and 2006 and is scheduled to produce 400,000 jobs by 2020 (A Green and Fair Future: for a Just Transition to a Low Carbon Economy, Trades Union Congress 2009).

The economic and industrial considerations in taking forward an active policy of diversification for Barrow and the scale and type of investment

The production skills at Barrow are potentially directly relevant to the major remaining niche within the renewables market: marine energy generation. Tidal and wave energy generation is running a decade behind wind technology and remains significantly underdeveloped (current carbon market incentives have focused most current investment on wind power) (International Energy Agency, Energy Technology Network Technology Brief E13, May 2010). Britain also possesses a coastline that makes it one of the world’s top four locations for such generation.

Perversely government budgets available for R&D and innovation in such areas are currently being massively reduced. The Department for the Environment and Climate Change has recently seen its entire innovation and R&D budget slashed from £160m a year to £40m (Sir John Beddington, Science and Engineering Assurance Review, August 2012). This has to be set against the payments by Britain to the US government of $325m towards the R&D cost the new Trident missile chamber between 2009 and 2012 (Congressional Research Service, Missile Submarine Programme, July 2012, p.22). Such payments are likely to increase.

Barrow would be very well placed to develop such marine energy technologies and to build the installations and the submarine vessels required to service them – both for the British market and, if initiated now, for the future world market. The investment required would be very significantly less than that required for Trident replacement – a significant proportion of which will be spent outside Britain.
1. What are the economic and industrial implications resulting from options other than a like for like replacement of Trident?

- Barrow is an extreme, and now within the UK, unique example of an economy dependent on one large employer
- This is an isolated self-contained economy so the loss of a major employer is very different than say if it was located ten miles from Manchester
- Thirty years ago there were a number of places in the UK that were in a somewhat similar position – British Steel and ICI on Teesside and, of course, coal mining towns and villages
- Closure of shipyard would probably mean the loss of a quarter of all male jobs – already Barrow’s “real” unemployment rate (as calculated by Sheffield Hallam) is 13.2% 30th out of 408 districts in GB
- There would be huge knock-on effects on the rest of the local economy: a rule of thumb is for every ten jobs lost directly, fairly quickly there would be another two lost in the local economy through the decline in local spending
- But the reality is worse over the long term: unemployment also inevitably means people leave the area – as happened to Barrow between 2001 and 2011 – and as population declines there is a further loss in local spending power and, since most public sector funding is tied to population, there would be further losses of public sector jobs, for example among teachers and nurses. So over twenty years for every job lost another “indirect” one would probably be lost

2. What are the economic and industrial considerations in taking forward an active policy of diversification both for Barrow and its supply chain?

- Would need to rebuild the economic base of the town. This is difficult but not impossible. However, sceptical that Astute programme would be expanded if replacement for Tridents not commissioned
- Also sceptical regards returning to shipbuilding as BAE Systems unlikely to bite the bullet and diversify into shipbuilding such as high end cruise liners
- Other places, eg South Yorkshire, have been able to exploit location near good network of motorways to develop major distribution centres. This option is not viable for Barrow. Similarly major growth in financial services – which tends to favour cities – looks unlikely.
- Call centres would be a viable option as accessible location does not matter so much but could be only one part – a small part - of the mix of jobs that would be required
- Environmental technologies would be an option but struck by fact that all round the country people are chasing this. Moreover record of UK succeeding in securing manufacturing jobs rather than just fitting them in the sea is pretty poor

3. What can be learnt from previous initiatives to diversify and/or regenerate the Furness peninsula

- Some cynical people say that problem areas always remain problem areas but what needs to be considered is how bad would things have been without any mitigation
- Experience over last thirty years is that regeneration can happen although some areas are more difficult than others eg Corby and Doncaster are better placed than the Welsh Valleys and indeed Barrow.

4. What is the scale and type of investment and commitment that is required by Government – and others - to sustain and develop jobs and skills in Barrow?

- Enormous and sustained – you cannot turn anything around in five years, eight even.
In some coalfield communities there has now been successful regeneration but it is 25 years after the pit closures. It required multiple investments by different players – including special initiatives, UK Government investment and vast amounts of European money.

- Reclamation, retraining, investment aid to businesses and improvements to basic infrastructure would all be required, including the A590 which is still one lane each way in parts.
- There would need to be a special offer for Barrow- although there would be questions inevitably about whether that is politically deliverable. Barrow, though poor, is not the very poorest area in the UK. Other areas have legitimate claims too.
- Government would be supported in doing something but question is would it be of the order of magnitude to make a difference?
- Experience of regeneration suggests that to create a job that ultimately becomes self-funding (ie no long term subsidy) costs maybe £100,000 – so 5,000 jobs lost in Barrow would require £500 million investment.

5. What other actions might be taken – by wider partners and civil society – in response to the need for diversification?

- European funding could clearly be of importance to Barrow and it is an area designated as available for State Aid but of course Barrow can’t offer more than other areas also eligible for State Aid.
- Cumbria may be identified as a “Transition region” in the new round of Structural Funds (2014 to 2020) – this could be helpful although should not be overstated as if Cumbria only just qualifies (as less than 90% of EU average GDP per head) then sums will be smaller. That said, the Government needs to be encouraged to support this new category.
- LEPs have negligible money and little experience of delivery so Barrow would probably need to look to Furness Enterprise (and its Chief Exec Harry Knowles) to lead on a regeneration programme.

6. What are the lessons that can be learnt from comparable international programmes?

- Not qualified to speak of international comparators but can do so regards nationally. Corby, for example, is one area that has gone a long way to rebuilding its economy in the wake of job losses (from the local steel industry). But it has been one of the very few areas in the south that has been able to offer a wide range of incentives etc.
- Regeneration could be quicker than the twenty five years that it all too often takes - if for example there were more significant investment and political will - but let’s also recognize that many former coalfield communities (for example) benefitted from a background economy which grew for every quarter from 1993 to 2008. This makes sustaining growth and embedding regeneration much easier.
- In Barrow’s case it is not clear that the national economic context is going to be one of sustained growth. Barrow’s predicament is also pretty awful given that its nearest town is Lancaster, which is relatively small and clearly not going to generate lots of new jobs. Even the Morecambe Bay link would therefore have limited positive impacts in opening up commuting opportunities.
1. What are the economic and industrial implications resulting from options other than a like for like replacement of Trident?

- Implications for Barrow would be major given its very isolated position and it is to some extents still a one company town.
- However at same time must state at outset that the decision regards replacement of Vanguard (Trident) submarines is a military decision to be taken with due regard to defence and deterrence considerations and not on basis of its potential to create employment.
- In fact if you want jobs then more cost effective method of creating them is to build, say, houses, hospitals, roads and railways.
- Clear that if replacement for Vanguard submarines were not proceeded with, the money saved (some £84 billion over 45 years) might not all be spent on defence and might be spent on civil government projects or on tax cuts.
- However equally clear that the consideration of what you would do with this are not as great as some suggest. In reality some £1.9 billion a year is available as a saving from cancellation in 2016. This is not enough to pay down Government deficit as some claim by 2015/17. Broadly, cancelling the Trident replacement will not produce a massive and immediate windfall: the savings will be at an annual average rate of almost £1.9 billion per annum from 2016 to 2062.
- There are however a whole set of potential options if the order for the four submarines is not made - each of these has its own set of implications for jobs, skills and technology. For example, the savings could be used to buy and operate more Typhoon combat aircraft or additional surface warships; or more hospitals, schools, airports, roads and railways.
- Once Vanguard replacement is complete then likely that a new generation of attack submarines will be required so the future of the yard could continue into the 2050s and beyond.

2. What are the economic and industrial considerations in taking forward an active policy of diversification both for Barrow and its supply chain?

- I do not subscribe to the “magic wand” type of economics - in other words BAE Systems without orders for submarines could not instead make dishwashers. Entry into completely new civil markets is costly and might not be profitable.
- In the eventuality that Scotland voted for independence and England then decided it wanted to build its nations warships within its boundaries, then it is feasible to think that Barrow could build the new surface combat warships replacing warship yards on the Clyde and at Rosyth.
- BAE Systems also owns Portsmouth and could shift warship production from there to Barrow.
- In terms of industrial implications the “doomsday” scenario of no submarine production at Barrow would represent the loss of a strategic submarine building capacity and it is extremely difficult to mothball such capacity - high end skilled workers move, others lose skills and expertise (especially design staff). Submarine design and production cannot be turned on and off like a tap! Taking such a decision might signal a shift in UK defence posture departing from its world military role (with implications for defence budgets and radical changes in the size and roles of each of its Armed Forces).

3. What can be learnt from previous initiatives to diversify and/or regenerate the Furness peninsula

- I am not an expert in this but am aware that has been diversification within Cumbria - for example the former coalmining and port towns of Workington and Whitehaven.

4. What is the scale and type of investment and commitment that is required by Government – and others - to sustain and develop jobs and skills in Barrow?
• The Government could make the area an Enterprise Zone; but new market entrants face an uphill task to establish themselves and the geographical location may be a limiting factor.
• There would clearly be a role for generous government policies for retraining and relocating. Other areas have faced similar problems and towns have made adjustments over time (e.g. closure of UK coal mines).

5. What other actions might be taken – by wider partners and civil society – in response to the need for diversification?

• Might well be that income deficiency measures - ie special benefits above minimum social security levels - would need considering aimed at vulnerable areas such as Barrow.

6. What are the lessons that can be learnt from comparable international programmes?

• Am aware of one or two studies in USA that Budget Office looked at [References: Hess, R, et al (2001). Closure and Reuse of Philadelphia Naval Shipyard, Rand, Santa Monica. Also, see Bonn International Center for Conversion for published studies.]
1. What are the economic and industrial implications resulting from options other than a like for like replacement of Trident?

- If the UK decided to opt for an alternative to a submarine based deterrent then clearly very serious implications for Barrow. In this eventuality the UK could probably only sustain a non-nuclear powered submarine fleet if there is industrial production in co-operation with US or France.
- However if decide to put Cruise or similar on Astute – instead of commissioning the replacement Vanguards - then clear would need to order at least another three Astutes in addition to the current seven. This would mean small reductions in current staffing as it is understood of the 5,000 employed by BAE Systems about 1,000 will be working on replacement for Vanguards in 2016.
- In fact if build ten Astutes at a “drumbeat” of thirty months then in total the commission takes twenty five years which is about the time by which a new version needs to be commissioned – in other words if we were to commit to a programme of ten non Ballistic submarines BAE Systems would maintain a perpetuity of business employing numbers at 4,000 or so.
- In this eventuality there would be some question regards the retention of design capability but when it came to designing the next generation of non-ballistic submarine this could be done with the US or the French.
- In the event of adoption of non-continuous at sea deterrence then this could be done with just two replacement submarines – that was the view of Sir Michael Quinlan the ‘godfather’ of nuclear strategy in 1980s.
- Continuous at sea deterrence is, it must be said, complete insanity – at height of cold war, when Soviet Union had us in its sights and we had their cities in ours, then at least it had some logic. Now 20 years after “de-targeting” what possible logic can there be in having a continuously available arsenal aimed at nothing in particular?!
- The costs of CASD are also extreme- a vast financial premium. In my opinion the most likely option is that we will begin to descend what I call the ladder of options – the first rungs of which would be adoption of NCASD with either the potential deterrent available either through multi-use Astute or two replacements for the Vanguards.

2. What are the economic and industrial considerations in taking forward an active policy of diversification both for Barrow and its supply chain?

- If scaling down to build just one class of nuclear powered submarine that is multiuse then I acknowledge there this will cost some jobs – perhaps 1,000 or so. But it is not feasible in the current financial climate, and given the pressures within the MoD for other equipment (Joint Strike Fighter, Type 26 Frigates, next generation of unmanned aircraft, FRES, replacement for HMS Ocean, etc, none of which have been fully budgeted for) to spend approximately £100 billion on WMD in order to save 1,000 or so jobs.
- That is why my “Bahamas” comment – that we could give each one £2million and they could live in the Bahamas - is correct and I would have thought not unwelcome to the employees as well as affordable to the Government given the scale of the potential savings.
- Of course that is not however a likely scenario – not least because savings would be spent on other MoD priorities no doubt. Moreover the skills that employees at BAE Systems have are very valuable and should be utilized in some other way such as shipbuilding whether civilian or military. They won’t want to work in call centres.
- If that is not possible - and the MoD would have a responsibility to look with BAE Systems at the alternatives – then the Government would have to stand ready to prime some other economic activity.
- Scottish independence – which although seemingly unlikely should not be discounted entirely - might help but if naval contracts did not go there it would not be guaranteed that Barrow would be the recipient of the orders – there are other dockyards that would be in contention.
3. What can be learnt from previous initiatives to diversify and/or regenerate the Furness peninsula
   - Not my area of expertise.

4. What is the scale and type of investment and commitment that is required by Government – and others - to sustain and develop jobs and skills in Barrow?
   - As indicated above I am very clear the Government does have a moral responsibility to step in and make some kind of injection into the local economy including a considerable financial commitment.

5. What other actions might be taken – by wider partners and civil society – in response to the need for diversification?
   - BAE Systems should be central to discussions about the future but I must admit that I am disappointed that the merger with EADS did not go ahead. Had it done so then European collaboration - which is already part of the procurement process and set to become bigger as co-operation becomes more normal and indeed necessary due to economies of scale – would have become more possible. For example had it gone ahead there would have been real opportunity to talk to the new company about ensuring a future viable submarine production capability for Europe.
   - I fear now that BAE will be bought by a US company, but for its US contracts not UK ones, and it would then be far less concerned about what happens in UK.

6. What are the lessons that can be learnt from comparable international programmes?
   - Again not my area of expertise but I am aware that both Portsmouth and Devonport have diversified their economies over the years through managed contraction.
What are the economic and industrial implications resulting from options other than a like for like replacement of Trident?

1. Perhaps not well understood that 11 years before the end of the current Astute programme, the workforce transition to the Successor programme is already well advanced. Over 1,000 BAE staff are currently engaged on Successor. A decision to cancel Successor is not, therefore, a question of future job losses beyond 2023 but would have an immediate impact on 20% of the BAE workforce in Barrow.

2. The direct implications before 2023, the end of the Astute programme, are very significant. Employment in the Barrow Shipyard is around 5,000, expected to rise to 6,000 to deliver the Successor programme. A very significant number of these jobs would be lost. It is assumed that as the 2023 date is approached, there would be very significant job losses. In addition to job losses, the national capability to deliver future submarine programmes would be severely compromised. KOFAC have noted that this reduction in capability is well proven with the problems experienced in the Astute programme being attributable to a reduction in capability which resulted from the time gap between the Trident and Astute programmes.

3. The most relevant authoritative work on multipliers in defence industries is the Oxford Economics Report “The Economic Contribution of BAE Systems to the UK in 2009”. This indicates a supply chain multiplier of 1:1.2 and a wider economic multiplier of 1:0.7. Applied to the 6,000 workforce, this equates to 17,400 jobs placed at risk.

4. KOFAC estimate that in 2011, spend from the Astute Programme within the UK supply chain was more than £200m, with 2,100 suppliers. Cancellation of the Successor programme would, therefore, have national economic consequences.

What are the economic and industrial considerations in taking forward an active policy of diversification?

1. The primary consideration is that diversification of a large company away from defence work is extremely difficult – not a process of straightforward transition to a new product base. I understand this has been the case internationally and locally with efforts to diversify the submarine solutions business to a range of other products including surface ships, subsea structures and civil nuclear all failing.

2. I have explained above the numbers of jobs affected and their multiplier effect. It is highly unlikely that any diversification programme could sustain employment at current levels.

3. Diversification would have to take into account the negative factors which affect the local economy. In particular, the peripheral location of Barrow to the UK economy and Europe is a major economic constraint. All the major industry in the town has benefited from Government subsidy in one form or another. There is a “value gap” for development of private sector employment floor space, meaning that only one small development of speculative workspace has been completed in over 20 years. The private sector will not lead significant diversification unaided and there seems little prospect of any long term support from Central Government to achieve this.

What is the scale and type of investment and commitment required by Government and others to sustain and develop jobs and skills in Barrow?

1. I assume this question assumes the Successor programme is cancelled.

2. As I understand the current turnover of the Shipyard is about £600m and will increase over the next five years to £1bn. Ignoring the leakage to the supply chain of 50% (which is not correct as there are many local companies involved) this would equate to a £500m loss per annum. These losses could not be made up under any government or government agency programme. Being outside the major urban areas, the cost per head of population would be unsustainable. Although the Borough Council and its partners have been successful at tapping into government regeneration funding, the total figure since the mid 1990’s amounts to approximately £30m. The current restraints on public sector expenditure means even this level is currently unachievable.
3. I sense no appetite from Government to intervene in areas for the purpose of regeneration. Growth will continue to be the economic policy objective for the foreseeable future. Whilst there is significant private sector investment planned, much of it is related to the shipyard or intensive capital investment in energy or pharmaceuticals. Similarly the Government's appetite to intervene by directing inward investment on the scale required is completely absent.

**What other actions might be taken by wider partners and civil society in response to the need for diversification?**

1. In the late 1980's, reports were warning of a dangerous dependence, similar to Consett, on employment in the shipyard and, since that time, a wide range of diversification strategies have been employed. Local enterprise agencies have been established to support new start businesses and attract inward investment and the public sector has taken a lead role in supporting physical development of workspace. This has had some effect and there is some indication of emerging clusters of new technologies linked to offshore and subsea technologies. Small business numbers have also increased. However, this is the result of some 25 years of concerted public and private sector support. In the current age of public sector austerity, support to such programmes has been slashed and is unlikely to be reinstated in the foreseeable future.

2. It is also clear that the need is not just the quantum of funding but the timescale over which it is delivered. Long term committed funding is required and given timescales set by Government, this seems highly unlikely.
Implications of Trident Alternatives Review for Barrow

1. The Trident Alternatives Review may suggest an alternative replacement for Trident, Britain’s nuclear weapons system, rather than a ‘like for like’ replacement.
2. The review will investigate the need for ‘continuous-at-sea deterrence’ and may suggest a number of cheaper alternatives. These range from stepping down the patrols, to designing missiles to be launched from aircraft, surface navy ships or land, to a delayed launch system.
3. If an alternative which does not involve new submarine construction is accepted by parliament in 2016, there will be significant employment consequences for Barrow.

Barrow’s Options

1. The shipyard has largely become specialised as Britain’s only submarine manufacturing yard, and has many skill sets that reflect that specialisation. Submarine production involves construction skills such as steel-working, welding, and ship fitting early in the construction process when the hull cylinders are fabricated. Outfitting skills are used later in the process when the various electrical, piping, heating, ventilation, air conditioning, crew accommodations, and other systems are placed either in the hull cylinders or into the complete submarine structure. Just as important is the design team of naval architects, engineers and draughtsmen who have the challenging task of designing the submarines and modifying design work in the light of building experience and new technological developments. Specific submarine design and construction skills include scientific and technical advice on hydrodynamics, maneuvering and control, propulsion technology, atmosphere control and structural and acoustic engineering design. Many of those employed in submarine building have design and construction skills that are in very short supply in Britain today.
2. The Barrow shipyard could survive by diversifying into building and repairing surface ships, designing and building unmanned undersea vehicles (SUVs) and designing diesel powered submarines for export (the yard has previously completed orders for submarine pressure domes for the Spanish Navy).
3. The yard could adapt to building surface ships, especially in new niche markets such as ultra-fuel efficient ships to transport freight and deep water drilling ships for use in oil exploration. There would also be the possibility of developing collaborative submarine work with other countries such as the United States and France. In view of the current global collapse in commercial shipbuilding demand and the prospect of severe cuts in the future naval shipbuilding programme, the best option for maintaining some shipbuilding capacity would be to target the high technology niche markets identified by OECD: ultra-fuel efficient, low-emission ships to transport freight and deep water drilling ships, especially those designed for arctic conditions.
4. Britain has a wealth of experience in offshore oil and gas exploration and production. They would require external investment, and require infrastructure developments such as the ability to make rapid grid connections, positive feed-in tariffs for all sizes of suppliers and modifications to ports and harbour areas and upgrading transport networks.
5. The skills of the workforce could be adapted to the manufacture of turbines to harness marine and wind. The shipyard at Barrow could become, with appropriate investment, a major centre for the design and manufacture of wave and tidal turbines. The skills that are needed for complex submarine and shipbuilding, such as steel working and engineering and marine design expertise are similar to those required for marine energy developments. If we invest the money saved by cancelling Trident, we could make the UK a world leader in wave and tidal power technology and create hundreds of thousands of new jobs in Britain, more than compensating for the jobs lost by cancelling Trident replacement.

Previous regeneration

1. To be effective in mitigating the effects of closure or restructuring on local jobs and services, the development of a plan for the re-use of facilities and redevelopment of the local economy...
and new industries and jobs must be started early and involve the government, local community organisations, workers and firms.

2. In the absence of further naval shipbuilding orders, these yards could be adapted, with some investment, to build equipment to harness wind and marine power. A similar transformation took place in shipyards all over Britain in the 1970s and 80s with the boom in building platforms for the North Sea oil and gas industry.

**Government commitment required**

1. A government-supported plan for defence diversification is essential. The town’s geographical isolation and level of deprivation fully justify government intervention.

2. Significant resources would be required to ensure there is adequate funding to absorb redundant workers into alternative jobs in the private and public economy.

3. In their 2010 election manifesto the Liberal Democrats argued for a ‘green stimulus’ plan which would create 100,000 jobs and include investing up to £400 million in refurbishing shipyards in the North of England and Scotland so that they can manufacture offshore wind turbines and other marine renewable energy equipment. The very high level scientific, design and technical skills held within the workforce at Barrow, are precisely those required for at least some of the technologies required for a transition to a green economy.

4. A government-led defence diversification plan with real resources, early planning and trade union and community involvement could ensure that few if any jobs were lost in the event of nuclear submarine construction at Barrow coming to an end in the course of the next decade.

**Wider commitment required**

1. The role of Trade Unions and the local community will be essential.

2. Spending a fraction of the £20 billion procurement costs for Trident would enable local employers and local authorities to absorb many of those made redundant.

**Lessons from overseas**

1. In the United States, the Base Realignment and Closure initiative (BRAC) has been applied to 530 base closures and realignments since 1998. Almost all have achieved most of their objectives and a number have generated more employment than that lost through closure. BRAC is governed by legislation detailing key processes which ensure that redevelopment plans must come from the local community. A Local Redevelopment Authority is formed which must include all major groups and communities affected. Central government has a clear role in facilitating this process. It can ensure fast-track environmental clean-up, funds to provide transitional support for displaced workers and economic planning grants. It can ensure that property changes hands below market value if it is for job creating purposes.

2. If a programme such as this were implemented in Barrow, alternative employment could be provided and very few job losses need occur.
1. What are the economic and industrial implications resulting from options other than a like for like replacement of Trident?

- It is not clear what the implications are if for example it was decided to build nuclear-missile capable astute – to be armed with cruise – rather than replacements for Vanguard. Presumably there would be some reduction in workforce numbers but not a significant one. There would still be a need for designers.
- It is more clear that if the programme was cancelled entirely with no submarine alternative then Barrow, which is an area of high unemployment, would be affected very dramatically (although in the overall nationwide context of unemployment the figures are less significant.)
- There are some high added-value jobs in Barrow which are the kinds of employment that the country needs (although they are expensive to create/support)

2. What are the economic and industrial considerations in taking forward an active policy of diversification both for Barrow and its supply chain?

- There is increasing acceptance of a military covenant – one between those who risk their lives in the armed forces and the obligations the rest of civil society owes to them. There should be consideration of a similar covenant with those towns that are exposed to changes of defence policy such that if the need for production ceases there is acceptance of a moral and electoral obligation to provide temporary economic development support for transition.
- The Government could invest in marine technology skills, such as off-shore wind farm production and tidal power.

3. What can be learnt from previous initiatives to diversify and/or regenerate the Furness peninsula

- Not able to comment on this

4. What is the scale and type of investment and commitment that is required by Government – and others - to sustain and develop jobs and skills in Barrow?

- What happened in the 1990s – when, after the Cold War, there were huge reductions in the numbers of those employed in industries related to the military – dwarfs the potential shift that would occur if Barrow were to close.
- That said in the 1990s the economy was growing and few places are as isolated as Barrow, so the Government would need to intervene if it were not to lead to major localized unemployment, or a population exodus, although the sums required would run into the low hundreds of millions for a few years, (not the £1.6billion per annum indefinitely that is estimated to be saved if all four replacement submarines were not proceeded with.)
- There should be a short to medium term plan which then leads to self-sustaining economy. It should not be dependent on industry that is publicly funded forever.

5. What other actions might be taken – by wider partners and civil society – in response to the need for diversification?

- There would need to be proper consideration of funding for relocation of people away from Barrow as well as encouragement for businesses to invest in Barrow. Barrow is not well located for the location of a general industry, unless another relevant specialized industry was incubated there (Q2).

6. What are the lessons that can be learnt from comparable international programmes?

- Not able to comment on this
Summary of interview held on 26 September 2012

1. What are the economic and industrial implications resulting from options other than a like for like replacement of Trident?

   - **UNISON’s position is that it is not in favour of a replacement for Trident.** We recognize the need for the country to defend itself but the Cold War is over and terrorism has, for example, shown that Weapons of Mass Destruction are not what our military need.
   - **However UNISON recognizes Barrow’s historical dependency on nuclear weapon carrying - as well as conventional military - submarine production as well its geographical isolation.** It can therefore see that there would be very serious implications for the workforce and the community- including the local council and wider public services - if it doesn’t get work on replacing Trident or similar.
   - There is clearly a highly skilled, well-motivated and loyal workforce in Barrow and it would be a great shame if those skills were to be lost.
   - It is clear that the existing workforce - of 5,000 - not only supports employment in the supply chain but also for all those providing support services: from newsagents to petrol stations, from hairdressers to nurses. Without this employer the town would be very depressed.

2. What are the economic and industrial considerations in taking forward an active policy of diversification both for Barrow and its supply chain?

   - **There must be a case for Barrow - with its port and prime maritime location - to diversify into the production of civilian or military ships.**
   - Another option might be for Barrow to become England’s “Faslane”, a base for the existing Tridents to see out their lives - if , that is, Scotland votes for independence and Salmond carries through his threat to no longer allow Trident to dock at Faslane.
   - Marine technology also presents itself as another way forward - and there is a need for wind turbine production not just assembly.
   - Finally it would certainly be the case that if there was no further commission for new submarines, there would be a need for nuclear decommissioning skills as well as the opportunity that new nuclear power production in West Cumbria may offer.

3. What can be learnt from previous initiatives to diversify and/or regenerate the Furness peninsula

   - Don’t have enough local knowledge but from the evidence of the population decline whatever has been tried does not seem to have worked.

4. What is the scale and type of investment and commitment that is required by Government – and others - to sustain and develop jobs and skills in Barrow?

   - **If politicians take a decision that adversely impacts on the workforce then politicians have a responsibility to put in measures that mitigate that impact.**
   - Clear therefore that there would need to be substantial support from the Government with cost implications to fund alternatives.

5. What other actions might be taken – by wider partners and civil society – in response to the need for diversification?

   - Clear that BAE Systems have a responsibility to look to future welfare - employment - of the workforce and should be involved in the future skills agenda.
   - BAE Systems should not consider the workforce as expendable - i.e. not their responsibility if the replacement contract is not awarded in 2016 - perhaps the proposed merger with EADS might help in this respect.
6. What are the lessons that can be learnt from comparable international programmes?

- Nothing springs to mind however in UK there have been examples of communities that have sought to “transition” from one economy to another, the obvious one being pit villages where the NCB had an agency to support communities when a mine was closed. However I am not at all sure that these were spectacularly successful.
- The Atomic Energy Authority also tried to diversify but eventually went bust. That was in the private sector, however, and shows that to succeed diversification almost certainly needs major public sector support.
1. What are the economic and industrial implications resulting from options other than a like for like replacement of Trident?

- The first thing that has to be said is that the Trident Alternatives Review’s options have been counterproductively narrowed to only looking at other kinds of nuclear weapons, not to alternative means that could meet Britain’s security needs and alternative kinds of deterrence. If there was proper security review then it would become clear that nuclear weapons are not of any use. In fact as Robin Cook said they are “worse than irrelevant” by which he meant that this preoccupation with the next generation of nuclear weapons blinds us to the country’s real defence needs.
- The real threat to Barrow’s presumption that it will build the successor to Trident is that the Cold War is over and internationally as well as in Britain there is growing pressure to ban and eliminate nuclear weapons altogether.
- Any idea that the UK needs to replace Trident in order to maintain jobs in Barrow is the wrong way round. Governments frequently play the jobs card when they want to get domestic support for a defence project, but as we have seen in history, the UK Government is quite willing to play fast and loose with jobs in defence as well as other manufacturing sectors when it suits them. We’ve already seen that at Faslane and other bases where personnel and force levels were cut when the cold war ended. Almost overnight, they cut their housing needs leaving villages near bases half empty, with devastating effects on local economies and support-businesses. Moreover, issues other than defence assessments also lead to considerable jobs cuts. For example, during the recent BAE Systems/EADS merger talks, it was noted by various commentators that the Conservatives were backing the merger (which would have delivered millions of pounds to senior managers, but not much else) even though it could lead to the loss of tens of thousands of jobs in this country.
- That said, I do think the issue of jobs is very important to people in this country, especially in Cumbria where another major employer, Sellafield, is now on its way out, having blighted the countryside and acted as a barrier to attracting other kinds of jobs and industries. One major problem for Barrow is that shipbuilding in UK has become totally dependent on military contracts. Britain was once a major civilian shipbuilder, but this industry was allowed to decline in the rush to find cheaper workforces overseas, and in becoming so dependent on government defence contracts, Barrow has become too specialised and dependent on BAE Systems, so now all it does is nuclear submarines. Nonetheless, though dependence on BAE Systems means Barrow has lost the ability at present to diversify and get back civilian clients wanting other kinds of shipping products, including lucrative high-end yachts, if serious planning for the future were undertaken now, and there was a properly managed pull out of the nuclear submarines business, it ought to be possible to build up alternative industries that make use of the kind of engineering and building skills prevalent in the current Barrow workforce. The key to this is time to plan. As long as the Government is insisting that Barrow will get the submarine contracts for Trident replacement, it is unlikely that BAE Systems or anyone else will look beyond and think how to manage Barrow’s future if Trident replacement is scrapped. But the Barrow unions and workforce need to start thinking and planning for that future because the writing is on the wall politically.

2. What are the economic and industrial considerations in taking forward an active policy of diversification both for Barrow and its supply chain?

- The major consideration is good planning – and admitting that the world is changing and that it is very short-sighted to imagine that Barrow will be able to carry on making nuclear-powered and nuclear-armed submarines like Astute and Vanguard (Trident) in perpetuity. Dunoon in Scotland was devastated when the US Navy pulled out of Holy Loch in the early 1990s only because it happened so abruptly. One minute the US and UK governments were giving ‘cast iron assurances’ that the bases were here to stay, and then suddenly the decision was made that they weren’t needed anymore, and then the pull-out happened far too quickly for the local area to cope. So much of local industry had become dependent on serving the US base that
there was an abrupt economic collapse, massive loss of jobs, real human misery caused by this. It took over a decade to recover, build up alternatives, and grow new industries and jobs. Now that area is thriving. The lessons to be drawn from this are: i) it’s dangerous to be solely dependent on military contracts as government priorities may change abruptly; ii) that new opportunities can be opened up, bringing in different industries and new jobs that existing workforces could be adapted into (e.g. engineering, welding and metal cutting in Barrow’s case), as well as bringing in the possibility of attracting new kinds of jobs and industries and regenerating the local economy; and iii) With appropriate notice (and Barrow is behind on its Astute production, so even if Trident replacement were cancelled, it still has contracts for several years), the timescales ought to allow for a managed approach to change – there is time to prepare for jobs after Trident! Moreover, talking to some Barrow workers, it’s clear that if they were given the choice between building submarines meant to fire nuclear weapons amounting to more than the explosive power of 100 Hiroshimas, and building socially useful products, they would be happier not making nuclear weapons.

- I haven’t looked into diversification for Barrow in any detail, although I researched diversification for Faslane if it stopped being a nuclear naval base, but I think there may be some similarities with regard to sea-based location. Engineering skills are very adaptable and there are clearly a range of other metal cutting and welding jobs where they could be utilised. Regenerating leisure ships might be an option.
- There will also be growing future needs to build and supply effective energy alternatives to fossil fuels and nuclear, and Barrow’s natural advantages could make it very attractive for new industries focussing on the design, development, testing and manufacture of sustainable energy production, such as tidal and wind. But these possibilities would all need to be thoroughly researched and investigated by those with the workers’ interests at heart. That means the unions and those charged with supporting and managing the local economy as a whole, rather than BAE, which is probably on the way out in any case.

3. What can be learnt from previous initiatives to diversify and/or regenerate the Furness peninsula?

- Not my area of expertise

4. What is the scale and type of investment and commitment that is required by Government – and others - to sustain and develop jobs and skills in Barrow?

- The Government has no commitment, which is a concern, but having promised nuclear submarine jobs to Barrow for so long, and politically acted to prevent speculation and planning for Barrow’s industrial needs without Trident replacement contracts, the government must be put under pressure to provide the necessary support and investment, and work with local civic leaders, unions and industries to develop a plan for how to manage the transition so that Barrow people do not get the rug pulled out from them, as happened at Holy Loch. Consultations need to start now, with consideration of different possible scenarios for Barrow’s industrial future.
- The manufacturing base would need to be regrown using scientists and innovators – who historically have been let down by the Government’s economic approach. As noted above, one possibility worth studying is whether Barrow could become a hub to support the new energy economy that Britain needs to wake up to and develop.

5. What other actions might be taken – by wider partners and civil society – in response to the need for diversification?

- The Government should plan for the future of Barrow with the unions and the community. I suspect BAE Systems would walk away and/or hand over to other manufacturers, but the Westminster government and local elected representatives need to start looking at other economic partners that could be interested in developing Barrow in other directions.
- Some direct Government involvement especially of the dock site would probably be necessary. And when Trident renewal is cancelled, the government must also consider its wider responsibilities to locations whose industries were also promised contracts to manufacture other parts for the nuclear weapons delivery platforms or systems, such as Derby.
6. What are the lessons that can be learnt from comparable international programmes?

- There are certainly comparable examples where people saw the writing on the wall but ignored it. For political reasons they kept brazening it out, declaring 100% commitment to new weapons or aircraft carriers or whatever. The trouble with that attitude is that when the decisions are actually taken, there is much less time to manage the transition. If you deny the possibility of problems or changes until the last minute that is what causes economic collapse and real suffering.

- That is what happened at Holy Loch and many other places and unfortunately it will continue to happen until people think through the reality of defence. The government should have undertaken a genuinely strategic security and defence review, putting Britain’s security needs and assessments first, in the context of the significant changes happening in the world. On that basis they could have then identified more realistically where to prioritise defence spending. In that event, quite frankly, procuring a new generation of nuclear weapons would not have been taken seriously. It was a vanity project of Tony Blair, intent on keeping Britain “punching above our weight”. It is important not to be seduced or deluded into false security by the grand promises of politicians on these issues. Barrow’s workforce, both unions and management, must insist on an in depth “options study” of different kinds of alternatives and time scales. By planning now they will be in a much stronger position to bridge the inevitable gap later and reduce suffering.

- Certainly Barrow unions and management have got to look at the big picture - which includes BAE’s uncertain future, short-term and politically-driven calculations by government, and - in the not very distant future – the likelihood of a much more stringent international treaty banning nuclear weapons. Even if Britain did not sign up to such a treaty from the beginning, it would greatly constrain the actions of all the nuclear-armed states with regard to deployment and transporting of nuclear weapons as well as use and production, adding a very significant new plank to international humanitarian law. Given the shaky grounds on which Trident renewal is currently predicated, international developments such as this would sweep away any lingering case for Britain to spend money on new nuclear submarines. Britain has got to factor such developments into its planning or it will be left scrambling to cope as it did when the cold war ended.
Executive Summary

i Furness Enterprise has, since 1991, facilitated economic regeneration, helping stimulate business growth. Originating in 2004, Keep our Future Afloat (KOFAC) champions the capability of the shipyard. They are well placed to contribute to this study (see Section 1).

ii The United Kingdom aims to retain a sovereign capability in the design, construction, operation, maintenance and decommissioning of nuclear-powered submarines. This reflects the United Kingdom’s “...duties of ownership and commitments to the USA which can only be fulfilled by close control of an onshore submarine business. Therefore, it is essential that the UK retains the capability safely to deliver, operate and maintain these platforms without significant reliance on unpredictable offshore expertise.”

iii Section 2, describes the UK submarine industrial base which has some distinctive economic features, it is a unique part of the UK defence industry with:

- A single product;
- A technically complex and costly product;
- A single buyer Ministry of Defence;
- A single supplier;
- Entry barriers - restricted by the need for a nuclear site licence;
- Small numbers of submarines purchased and no possibility of exports;
- Needs for specialised resources- Nuclear-powered submarines require specialised skills and facilities for their design, construction, commissioning, maintenance and decommissioning.

iv Fifty per cent of the value of the prime contract for a nuclear powered submarine is subcontracted to the supply chain (HCP 59, 2006); 10 companies account for 80% of the contract value. The Supply Chain embraces 1,200 firms, spread across virtually every parliamentary constituency.

v BAE Systems at Barrow-in-Furness in Cumbria is the United Kingdom’s sole supplier of nuclear-powered submarines. It is the only nuclear-licensed site available for the construction, testing and commissioning of nuclear powered submarines. Currently it employs over 5,000 people; it is the largest single employer in a self-contained Travel to Work Area (TTWA). It’s also the hub for the supplier base.

vi Rolls-Royce at Raynesway, Derby supply the nuclear power reactor (nuclear steam raising plant: NSRP) for the submarines using around 1,000 employees. The Atomic Weapons Establishment (AWE) at Aldermaston and Burghfield (Berks) deliver nuclear warheads for the Trident missiles, 4,500 personnel are involved. The naval base at Faslane is the base for operation of the submarines employs 3200. Refits occur at Babcock Devonport Dockyard, Plymouth involving around 3,000 personnel.

vii A successor submarine replacement for the Trident submarine fleet will possibly support some 13,000 to 26,000 jobs many of which are located in high unemployment areas often designated as Assisted Areas (e.g. Barrow-in-Furness).

viii Beyond 2012 Successor submarine programme is anticipated to deliver up to 1,000 new jobs in Barrow through to the 2030s, in addition to those which have been created since 2005. Considerable increased spending will occur amongst the supply chain nationally; it will also
intensify collaboration on leading edge technology for UK. The multiplier impact is between 1.7 and 2.0.

ix There are clear national strategic defence responses why the UK needs to maintain continually at sea strategic nuclear deterrent – the threat has not gone away, near term prospects for reductions in nuclear weapons held are unlikely until more intrusive verification measures can be introduced.

x Any possible cancellation of Trident replacement Successor in 2016 due to Main Gate approval being withheld by MoD and proposals for replacement with an alternative form of deterrent would mean Barrow may not benefit. It may not be feasible for UK to develop a new nuclear warhead system for cruise missiles. The USA which in 2010 decided to withdraw its nuclear cruise missiles may not provide them to the UK.

xi Without a Trident successor replacement, the need for further nuclear powered attack submarines and the viability of maintaining a nuclear powered fleet may be challenging.

xii The Commission of the European Community in “The Economic and Social Impact of Reductions in Defence Spending and Military Forces on the Regions of the Community” (1992), put Cumbria as the most defence industrial dependant region on Europe; its defence dependant employment share being double that of any other EU region in Europe. It was also cited as the European region most vulnerable to defence cuts, and signalled that the multiple effect of defence industry employment was 2.00.

xiii History shows that the award of other shipbuilding work to the Barrow shipyard in the period 1990 to 2003 was not sufficient to maintain core skills specific to submarine design and construction (see HCP 1115, 2008, p11).

xiv Recent Sheffield Hallam University studies also show Barrow has “layered, generational unemployment” largely as a consequence of the 1990-1995 large scale job losses in shipbuilding. Now worklessness allied too few unskilled and semi-skilled job vacancies are major challenges with the real level of unemployment in 2012 being around 13.2%.

xv The combined efforts of Government departments, agencies, NWDA, ERDF and domestic UK regeneration programmes over an extended period of time has been necessary to achieve significant job creation and diversification in the aftermath of shipyard and other job losses. Since 1991 resources channelled through the Furness Enterprise Partnership’s delivery have helped Barrow TTWA’s economy diversify, by facilitating the creation of 10,000 jobs, safeguarding of 3,600 jobs and helping 1,200 workless people into employment. Moreover their efforts have facilitated diversification which manifests itself in the breadth of businesses now found on Furness Business park in Barrow, the areas more diverse retail over

xvi Ekosgen’s NW England Index of Economic Resilience (2009) shows Barrow’s economy improved significantly between 1997 and 2008, this can be attributed in large part to the combined efforts described above and post 2004/5 growth of jobs at BAE Systems which continued through the recession and is ongoing.

xvii Forthcoming further diversification of the industrial structure of Furness will emerge from the growth of a new biopharmaceutical science park at GSK in Ulverston. By 2020 there will be 350 jobs at the facility at a cost of £500m. This could lead to a modest number of supply chain benefits locally.

xviii Offshore renewable energy is anticipated to see another 80 jobs emerge in the next two years. This will add to the 120 or so estimated to be available at three onshore support bases now operational at the port of Barrow. It is difficult to for-see more activity in this field as the operator’s current focus is on reducing the cost per MW of electricity by working with established largely overseas based suppliers.

xix Shipyard diversification has been explored on several occasions since 1990. Previous empirical experience and independent studies most notably in 2003/4 have concluded that nothing

14 The Real level of unemployment 2012 Beatty, Fothergill and Gore, Sheffield Hallam University.
Trident Alternatives Review and the future of Barrow

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compares to another submarine order in terms of being able to provide large scale sustainable employment at Barrow. There are significant barriers to entry into diversified markets and limited job potential associated with them as summarised by PA Consulting study…

“It is estimated that these options could in time, create in the region of 320 and 510 jobs... i.e. an average between 46 and 73 jobs per year”.

xx We recommend examination of HC59 The Future of the UK’s Strategic nuclear deterrent: the manufacturing and skills base, 19 December 2006, published by the House of Commons Defence Select Committee. It set out a view on the consequences for Barrow, its shipyard and its supply chain of job losses and reductions in defence orders, should the Successor not go ahead.

xxi Resourcing alternative employment should a like for like successor submarine not go ahead will be costly. Finding suitable large scale investment is not guaranteed. The often quoted example of Nissan (pictured below) investing in Sunderland in 1984 required £3.3billion over 26 years to create 6,000 jobs.

xxii The cost per job for creation of alternative employment varies considerably and is subject to EU State aid rules on what can be offered to individual companies. The most recent study in the National Audit Office Regional Growth Fund, May 2012 study shows it ranges from £4,000 to £200,000 per job averaging £33,000 per job.

xxiii We offer no views on whether Barrow might benefit from a possible future vote on Scottish independence leading to changes in where the deterrent is based.

xxiv In our view there is no alternative to replacing the existing strategic nuclear deterrent carrying submarine fleet, Vanguard Class Submarines with the proposed Successor Submarine Fleet. However should change occur it will be necessary to recognise that?

“What is needed above all is a holistic approach which draws together all aspects of the problem and long-term commitment”

To regeneration and new types of growth in Furness and vast resources would need to be committed quickly to Barrow in Furness TTWA.

xiv We hope this response contribution adds value to the NET study.

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<tr>
<th>Barrow Shipyard: Factors Influencing Diversification: Part 1</th>
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<tr>
<td>Economic Impact of Successor and of Alternatives</td>
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<tr>
<td>Successor delivers:</td>
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<tr>
<td>• 30 years of work for Barrow Shipyard</td>
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<tr>
<td>• 1,000 new jobs; 5,500 safeguarded jobs</td>
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<tr>
<td>• 13,000 jobs in the supply chain</td>
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<tr>
<td>• 50% of work is found in supplier base</td>
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<tr>
<td>• National impact - firms located in practically every constituency</td>
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<tr>
<td>• Spend £200m/year (2011)</td>
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<tr>
<td>• Strong regional impact too</td>
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<tr>
<td>• Multiplier of 1.6/1.7 to 2.0</td>
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<tr>
<td>For every defence £1, 36% goes to HM Treasury</td>
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<td>Alternatives to a Like for Like replacement of Vanguard class and D5 missiles</td>
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<tr>
<td>• Aircraft carried missile, easy to detect vulnerable</td>
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<td>• Submarine cruise missile option, limited range</td>
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<tr>
<td>• Warship based solution, vulnerable</td>
</tr>
<tr>
<td>The skills</td>
</tr>
<tr>
<td>• Are unique, very hard to transition them to other sectors e.g. welding/gas terminal over skilled</td>
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• Challenge of how to redeploy skills. Difficult to do.
• Diversification might realise 200-500 jobs / year
• Low demand for design skills associated with other options

There is No practical Diversification Alternatives:
• Astute work to 2024 does not buy time.
• Cancellation of Successor creates risk of losing design capacity early, quickly.
• PA Consulting 2003: the value of one additional boat, employing 2,000 – 3,000 people for 18 – 24 months, is worth more to Barrow than any combination of diversification possibilities

Diversification possibilities – previously identified best options:
• Marine engineering
• Marine leisure
• Supply base for renewable offshore energy
• Design engineering consultancy
• Special purpose ships design
• Support renewable energy
• Marine it
• Environmental services

Barrow Shipyard Factors Influencing Diversification: Part 2
Economic / Industrial Considerations in Actively Diversifying Peripherality Lack of Jobs

Cumbria is EU’s most defence dependent area.

Furness has less chance of diversifying than other areas due to
• Peripherality

Furness is an EU UK Assisted Area - but Government has taken away many incentives for attracting growth and EU post 2013 may stop help to large firms.

EU state aid rules limit scope of assistance to individual companies.

Joblessness is a major challenge along with limited number of vacancies:
• 6,000 on IB in Barrow alone
• Real unemployment is 13.2%
• Lack of jobs in TTWA crucial
• 12 people are chasing each vacancy

BAE 99% dependent on MOD contracts. Takes 6-8 years to train individuals with shipbuilding skills. Skill base overqualified in some activity e.g. welding precludes new jobs.

Indirect employment for every 10 supplier jobs 12 supported.

Induced employment creates 7 more jobs, hence big impact locally.

Diversification from military shipbuilding doesn’t work hard to break into markets.

Non-defence related diversification options that could provide enough jobs quickly, are hard to identify:
• What would be needed would be an equivalent of a Nissan (£3.3 billion was needed to create 6000 jobs over 25 years) GSK £350m only creates 350 jobs. Risk of emigration on large scale.
Supplier diversification might be stimulated by Successor revenues not cancellation.
There are no American or other international examples of diversification.

### Barrow Shipyard Factors Influencing Diversification: Part 3

#### Success Breeds Success

The Furness area’s diversification over 21 years has been a significant success.

- Focused approach
- Using expertise of broad public - private partnership resources
- EU and UK Government funding (KONVER, Perifra, SRB, WNF, Coastal Communities)
- Used in a holistic way
- Helping firms access money and markets
- Linking people with skills to firms needing skills
- Highly effective award winning delivery in challenging times.

**Furness Enterprise Partnership effective in**

- Keeping what firms we have
- Attracting new activity
- Creating an entrepreneurial culture.
- Average of over 500 jobs per year and 10,000 jobs in 20 years achieved.

Worth noting that the new 2012 West Cumbria Blueprint Strategy aims to create 3,000 jobs in 15 years with well-resourced and sustained programme.

Ekosgen 2009.

- Barrow is the Northwest’s most improved economy for enterprise 1997-2008

**BAE’s corporate social responsibility policy and actions**

- Encourages diversification
- Supports supply chain
- Encourages young people to enter the industry
- Supports career development and aspirations
- Urges retention/improvement of healthcare, education, leisure, housing to attract people to Furness and develop the job offer jobs for partners/spouses

Barrow has 23% jobs in manufacturing, the sector is a wealth creator - next largest employment sector is health

There is no alternative to the Successor programme for the Furness economy
1. **Furness Enterprise – An Introduction**

1.1 Furness Enterprise Ltd formed in 1991 as a public/private sector partnership, is a company limited by guarantee. It operates in and attracts investment to the largely self-contained Barrow Travel to Work Area, which is currently an Assisted Area, and one of the most peripheral parts of the EU, being identified by the European Commission as being Europe’s most defence dependant region, Cumbria. Its mission is as follows:

“To drive the development of Furness towards a stronger, more balanced economic structure, where it generates wealth from a broad spectrum of industrial, business, agricultural and tourism activities and provides stable employment. In order to achieve this, its current dependence upon defence contracts will be reduced, alternative services and activities will be sought”.

1.2 The Partnership includes Barrow Borough Council, South Lakeland District Council and Cumbria County Council as well as major companies such as BAE Systems and Kimberly-Clark. The Partnership’s achievements are significant; enabling the Furness area to diversify its economic base more than it would otherwise have done, had such a local delivery mechanism not been available.

1.3 As a facilitator it has been a conduit for a wide range of government resources into job creation from programmes such as Perifra, Konver, SRB, Working Neighbourhoods Fund, NWDA, ERDF, Coastal Communities Fund and in helping companies access Assisted Area discretionary grants enabling businesses to:

- Create 10,000 jobs;
- Safeguarded over 3,600 jobs;
- Help over 1,200 people access work.

Over the last five years between 113 and 135 new businesses have been formed each year, inward investment related jobs have totalled 100-268 and organic growth of existing firms has resulted in 101-236 jobs, all figures excluding those created in BAE Systems.

1.4 In 1991 BAE Systems’ predecessor, VSEL, was a founding member of Furness Enterprise Ltd. It continues to be a Board member, providing important support and up until 2006 it contributed significant financial sponsorship as a part of its corporate responsibility policy to assist economic development of the peninsula. Today BAE Systems contributes to Cumbria LEP, providing its Deputy Chairperson.

1.5 Furness Enterprise works with Cumbria LEP businesses, local authorities, the public sector and the third sector; it is well placed to understand and help facilitation and delivery of a strong, responsive and competitive economy. It coordinates economic development activity; assists companies to access money and markets; supports lobbying for more resources; has a track record of success and a deep understanding of the development and employments needs of the locality.

1.6 Keep our Future Afloat Campaign (KOFAC) emerged in 2004 as a union and community initiative (see [www.navalshipbuilding.co.uk](http://www.navalshipbuilding.co.uk)) as a response to 1,400 job losses when HMS Bulwark departed Barrow. KOFAC lobbies and influences Government industry and trade union leaders with well argued business propositions for sustaining skills and capability in naval shipbuilding.

2. **“The Future of the United Kingdom's Nuclear Deterrent” A Context for Our Response**

2.1 It is clear current Government policy is that:

“The first duty of any Government is to ensure the security of their people. The nuclear deterrent provides the ultimate guarantee of our national security, and for the past 42

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34 The Economic and Social Impact of Reductions in Defence Spending and Military Forces on the Regions of the Community” EC (1992)
years the Royal Navy has successfully operated continuous deterrent patrols to ensure just that." [16] “the time is simply not right to do away with it (the deterrent) unilaterally.”

“We must retain the capability to design, build and support nuclear submarines and meet the commitment for a successor to the Vanguard Class submarines.” [17]

2.2 Nuclear submarines form a key part of the UK’s defence. Submarines (currently the Vanguard Class) host the Trident missile system, which is the independent strategic nuclear deterrent. Fleet submarines (currently Swiftsure and Trafalgar Classes, to be replaced by Astute Class) provide protection to Trident; undertake strike operations using cruise missiles; and provide force protection for the other maritime assets. They also conduct intelligence gathering operations and Special Forces insertion. The capability provided by nuclear submarines is therefore unique and of vital importance to national defence.

HMS ASTUTE, rolled out for launch in June 2007, was the first UK submarine launched since HMS VENGEANCE in 1998, and the first Fleet submarine since HMS TRIUMPH in 1990 [18]

2.3 For over 44 years the United Kingdom has relied upon a continuous submarine based nuclear deterrent to provide UK, and our NATO allies, with the ability to deter the most destructive forms of aggression.

2.4 The Ministry of Defence’s (MOD) December 2006, White Paper “The Future of the United Kingdom’s Nuclear Deterrent”, set out the conclusions of studies into whether the United Kingdom still required a nuclear deterrent and, if so, how that nuclear deterrent might best be delivered. It concluded that,

“...whilst at the time there was no nation with both the capability and intent to threaten the independence or integrity of the UK, we could not dismiss the possibility that a major direct nuclear threat to the UK might re-emerge despite our work to counter proliferation” (a view reiterated on 18 May 2011, Hansard col 351);

“...of the potential ways of delivering a nuclear deterrent capability, the most effective system was a further class of submarines carrying ballistic missiles”.

2.5 The 2010 Strategic Defence and Security Review (Cm 7948) reiterated this commitment stating, “We will retain and renew our independent nuclear deterrent – the United Kingdom’s ultimate insurance policy in this age of uncertainty”. [19]
Most recently, The Prime Minister on 17th October 2012 (Hansard Col 317) told Parliament that “…we are committed to retaining an independent nuclear deterrent based on the Trident missile system. That is why we have continued with the programme to replace the Vanguard class submarines, including placing initial design contracts with BAE Systems.”

“…one of the key elements of the credibility of our deterrent has been that it is continuously at sea, and the Royal Navy takes immense pride in having been able to deliver that without a break over so many years. Yes, being continuously at sea is a key part of our deterrent.”

Initial Gate leading to Main Gate

Between 2007 and 2011 MoD Invested £900m on the concept phase of the initial submarine design work. This resulted in a decision to approve Initial Gate for the project on 18th May 2011 and to proceed to an assessment phase scheduled to be completed in 2016 when a main gate investment decision would be considered.

On 18th May 2011 the Secretary of State for Defence said, “This is a programme of great national importance”

“We have some of the finest submarine builders in the world, and the approval of the next phase of work in the programme will secure the jobs of the highly skilled and professional work force already involved in it, as well as providing further opportunities for the engineers and apprentices of the future.”

Since the Trident Successor programme’s Initial Gate a variety of preparatory works and development has got underway. Design work has continued from Barrow in Furness evolving proven Astute Class technologies and the joint US/UK programme to develop a common missile compartment housing the Trident strategic weapon system has made significant progress. The most recent contract worth £350m for design was announced on 29th October 2012.

MoD in approving Initial Gate committed a further £3b spend taking the total to £3.98b by the 2016 Main Gate approval decision time. This is equivalent to 15% of total project cost. Between 2011 and 2016 the focus would be upon:

- Design and engineering: In line with best practice will be taken to a design level of around 70% maturity across the overall submarine design;
- Long lead item spend will comprise £380m for the first boat split between the propulsion, main boat systems and steel; £145m for the second boat for propulsion systems; and, £6m for the third boat also for propulsion systems;
- Delivery of some increases in the shipyard workforce, facilities and equipment;
- Development of new or emerging technology including communications, tactical weapons systems, batteries and structural materials and improvement in design software;
- An Integrated Programme Management Team (IPMT) will be established to oversee the work schedule, costs and risks and to manage relationships between MoD and the main industry partners.

In July 2011 MoD advised Parliament that “Work on the Trident replacement programme has so far concentrated on the submarine” adding the overall Successor programme cost will remain within the White Paper cost envelope of £15-20 Billion at 2006/7 prices. Assuming a four boat fleet, the replacement submarines will remain within the £11-14Bn for the replacement platform.

It added that:

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20 House of Commons Hansard Col 317 17 Oct 2012
21 House of Commons Hansard - 18 May 2011: Column 351
22 House of Commons Hansard - 18 May 2011: Column 353
23 Ministry of Defence Press Release 29th October 2012
24 Ministry of Defence Press Release 29th October 2012
• The first submarine will be delivered by 2028. There is a requirement to sustain the capability throughout the life of the submarine out until the 2060s;
• A new PWR3 nuclear propulsion system will incorporate a new design that exploits technology that was not available when the Astute design was finalised including the latest safety technologies and ensure our future nuclear armed submarines have the performance required to deliver our minimum credible nuclear deterrent out until the 2060s;
• Each submarine will have eight missile tubes and 40 operational warheads;
• Existing D5 missiles will be used until the 2040s (thereby confirming that it is the submarines that need replacing now not the deterrent missiles);
• The Submarine Enterprise Performance Programme) to reduce costs, improve performance and ensure the sustainability of the UK’s submarine industrial enterprise.

2.13 On 18th June 2012. (Hansard 26th June 2012 col 5MC and 18th June 2012 c47WS) Ministers confirmed:

• A £1.1billion contract with Rolls Royce for a 11 year programme of work of which £500 m would be for site regeneration capital infrastructure to enable Rolls Royce to deliver PWR 3 reactors from Derby Raynseway;
• £600m would sustain reactor core production until 2023 producing reactor cores for the Astute class and the next generation nuclear deterrent Successor SSBN submarines if approved. These contracts will allow us to maintain this vital capability that underpins the nation’s long-term security, and will secure 300 jobs at Rolls-Royce.

2.15 From published information25, it is assumed that a replacement submarine will require:

• A seven year design phase and
• A seven year build phase,
• Plus time for sea trials before service entry (say, one year for sea trials for the first boat).

Drawing on Professor Hartley’s work26 we have assumed:

• 2016 major construction work starts, immediately after Main Gate approval by MOD
• 2028 first boat delivered with the
• remaining boats delivered at a rate of one every three years: hence
• either 2034 final boat delivered (for 3 boats: Option 1B) or 2037 (4 boats: Option 1A).

On this basis, the employment impacts of Successor for the UK submarine manufacturing industry of a three or four boat option will end in either 2034 or 2037.

2.16 After the completion of construction work on the Trident replacement, it is assumed that there will be follow-on work on a new SSN fleet, defined as “Maritime Underwater Future Capability” by MoD and DSTL (Defence, Science and Technology Laboratory). This would replace the Astute class. Initial design work on such a follow-on SSN is expected to start around 2025 with delivery of the first boat around the period 2034 to 2040. Should Successor be cancelled in 2016, there would be a submarine design gap of 9 years, impacting on the UK’s ability to retain key skills and ultimately capability to develop nuclear powered submarines.

2.17 There remain 6 boats in the Astute Class to be built, tested and commissioned. Hansard col 46 WJ of 3rd September 2012 indicated these will be delivered in 2013, 2015, 2018, 2020, 2022 and 2024. Five boats are at various stages of design and build with boats 3, 4 and 5 at advanced stages. Suggestions from some sources that this workload gives a breathing space for Barrow to make a transition to other types of work are unfounded as skills would soon start to be lost.

26 http://www.basicint.org/sites/default/files/trident_commission_defence-industrial_issues_keith_hartley_0.pdf
3. Barrow, Furness and the Shipyard

3.1 This section describes the characteristics of Barrow, its Travel to Work Area (TTWA) and the economic impact of its shipyard. Appendix A provides an outline of the area’s key economic characteristics in tabular form.

The Barrow Travel to Work Area

3.2 Barrow is a largely self-contained Travel to Work Area (TTWA). Furness is a Tier 2 Assisted Area. The next nearest employment centres are Kendal, Lancaster, Preston and Sellafield; the latter taking 3,500 skilled commuters each day.

3.3 The early part of the 1990s saw a dramatic period of job losses, the shipyard workforce fell from 14,400 to 5,800. 2003 saw Barrow host 24,300 jobs, 6,300 in the public sector and 18,000 in the private sector. By 2008 public sector jobs had increased to 6,600 and private sector to 21,100. The shipyard accounted for some of this increase of 3,100.

3.4 Currently in Barrow Borough manufacturing provides 23% of all jobs. The public sector supports 23.9% of all jobs. Nationally the figure is 20.4%. Health, education and public administration accounting for 28.7% jobs. The 2010 Annual Business Enquiry shows employment structure being:

- 6,100 jobs in manufacturing
- 4,000 in health and social work
- 3,900 in retail
- 2,400 in education
- 1,700 in accommodation
- 1,500 professional and scientific
- 1,400 in construction

3.5 Since 1990 Barrow’s economy has made significant progress moving from 49% of jobs in manufacturing; to 23% by 2011.

3.6 Ekosgen’s North West Index of Economic Resilience (2009) drew attention to the scale of the diversification of the economic base - changes, in part attributable to the combined efforts of government led measures such as Assisted Area discretionary grant support, NWDA, Furness Enterprise, local authorities working with companies and individuals. Ekosgen said Barrow had:

- Achieved a significant shift in its level of dynamism between 1997-2007 due to improved competitiveness and increased prosperity.
- Labour market resilience was 4th best in the northwest
- Become the most improved economy as a direct result of economic diversification and through a focus on creating a broader business base and more enterprising culture in an area historically characterised by a small number of large employers.
- A much higher start up rate and stronger business sustainability resulted in a significant deepening and broadening of the business base.17

3.7 Today the TTWA has around 100 manufacturing firms. After BAE Systems, GCS Weapons and Submarines combined employment of around 5,400 the next largest manufacturers each having around 400 employees as follows:

- GCS Weapons BAE Systems
- Kimberly-Clark
- Siemens

Other key areas include:

17 Ekosgen’s North West Index of Economic Resilience (2009)
- A cluster of electronics and systems integration firms involved in sub-sea technologies, LED lighting and communications technologies;
- Gas processing which employs approaching 200 and three wind farm onshore support bases, soon to increase to four, will employ around 150-200 for the next 20 years;
- The planned growth of GlaxoSmithKline from 240 employees engaged in cephalosporin production to a more diverse biopharmaceutical plant employing 350 more by 2020 after a £500m investment starting most probably in 2014.

3.8 Furness has a highly qualified workforce (41.5%) have a Level 4 qualification (by comparison UK has 35.8%). There is a continuing high demand for skilled professional and technical staff resulting in gross median wages (workplace) of £507, significantly above the national figure of £507 and Cumbria’s £429. However this is in contrast to the low number of live notified vacancies, 151 at September 2012, high unemployment and high rate of real unemployment affecting 13.2% of the people of working age. On average, 12 people are chasing each job; Job Density is 0.69. New retail jobs proposed in Barrow and Ulverston generally offer low wage jobs.

3.9 Around 100 inquiries are received annually from firms looking to invest in Furness. Over the past twenty years average annual new job creation has been around 532 jobs a year. Led by John Woodcock MP there is a strong local commitment to a new economic plan for the area. ("Towards a new economic vision for Furness" published on 31st July 2012 and visible at http://www.furnessenterprise.co.uk/pdf/2012/economic_vision.pdf) it is anticipated to be reflected in Cumbria LEP’s forthcoming Strategy and the new County Council economic strategy.

3.10 The impact of any future further potential job losses in Barrow is likely to be more severe than most locations because of the tight distance to work envelope, the absence of significant alternative local employment, and the level of dependency of the local supply chain on the Shipyard:

- The travel to work area is close in: it is estimated that 95% of employees currently work within 20 miles of Barrow;
- There is little alternative employment in the near Region, that is comparable in terms of added value or volume;
- The local supply base has a high dependency on the Barrow shipyard;
- There are little if no significant opportunities from diversification into other markets.

3.11 Next we look at the individual importance of BAE Systems’ shipyard. It has since 1958 managed the design build, test and commissioning of the UK nuclear powered submarine fleet. Today it employs over 5,000 people, is the hub of a national and international supply chain of 1,200 companies.

3.12 Barrow has developed the skills necessary to design and integrate highly complex systems that, as well as being complex in their own right, are integrated across a highly congested and complex space and with other complex systems. The skills available in Barrow therefore cover the range from high tech metal forming and construction through to design, integration and testing of highly complex, integrated electronics.

3.13 In 1990 the shipyard employed 14,250, by 1995 it had fallen to 5,800 and in 2003 it reached 2900. Today, according to figures supplied by BAE Systems for the “NET study” Barrow shipyard employs 5,064 of which are 4391 male and 673 female.

3.14 An anticipated 6,045 would be employed in Barrow on the successor replacement for the Vanguard class submarines, the diagram below shows a future workforce profile as Astute works come to end and replacement for Vanguard kicks in.
3.15 BAE Systems also indicate that the split per function within the business is as follows (Management roles will be included in these numbers).

<table>
<thead>
<tr>
<th>Function</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering</td>
<td>1101</td>
</tr>
<tr>
<td>Operations</td>
<td>2723</td>
</tr>
<tr>
<td>Project Management</td>
<td>516</td>
</tr>
<tr>
<td>Management and business support</td>
<td>724</td>
</tr>
<tr>
<td>Grand total</td>
<td>5064</td>
</tr>
</tbody>
</table>

Alternatively, the split below may help

<table>
<thead>
<tr>
<th>Work Split (by Employee type)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive</td>
<td></td>
</tr>
<tr>
<td>Manual</td>
<td>1797</td>
</tr>
<tr>
<td>Professional</td>
<td>2664</td>
</tr>
<tr>
<td>Grand Total</td>
<td>5064</td>
</tr>
</tbody>
</table>

Average salaries are

<table>
<thead>
<tr>
<th>Salary Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual (excl Apprentices)</td>
<td>£23,585</td>
</tr>
<tr>
<td>Professional (excl trainees &amp; grads)</td>
<td>£32,450</td>
</tr>
<tr>
<td>Executive</td>
<td>£52,820</td>
</tr>
</tbody>
</table>

Average length of service is

<table>
<thead>
<tr>
<th>Length of Service</th>
<th>Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>of leavers from the last 10 years</td>
<td>11.65 yrs</td>
</tr>
<tr>
<td>of leavers from the last 20 years</td>
<td>12.75 yrs</td>
</tr>
</tbody>
</table>

3.16 BAE System’s submarine facility at Barrow-in-Furness has some distinctive features28.

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28 BASIC 2011 defence industrial issues employment skills technology and regional impacts K Hartley
First, submarine construction requires skills and industrial facilities which are specific to submarines; Second, BAE Systems is the largest employer in Barrow which is a defence-dependent and submarine-dependent town (a single defence product town). In 2008, BAE Systems employed some 13% of the total employed workforce of Barrow and accounted for 55% of all manufacturing employment in the town (Nomis, 2011); Third, Barrow has a unique location in being the only major town in a geographically-remote region where there are few alternative sources of employment; It is at the heart of the UK’s submarine industrial base and acts as a hub for 1,200 firms spread across most Parliamentary constituencies.

3.17 It is important to understand both the nature of the submarine market in examining the economic and industrial implications of no successor submarine programme and pursuit of options other than a like for like replacement.

3.18 The Ministry of Defence (MoD) on 25 June 2008, in its “Impact assessment of a public policy exclusion order to support a submarine enterprise collaborative agreement” (paragraphs 1.8 to 1.11) stated that the submarine market can be sub-divided into three “ tiers”, see Figure 1

3.19 Independent analysis of the Submarine Enterprise supply chain confirms that it is dominated by the Tier 1 suppliers. The specialised nature of submarine build and support also restricts the degree to which work can be competitively procured.

3.20 Some 50 % of a submarine build is sourced from UK suppliers which depend on Barrow as a hub for work and jobs. Table 1 shows regional spend in northwest England alone there are 308 companies involved.

<table>
<thead>
<tr>
<th>Regional spend</th>
<th>Companies involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northwest</td>
<td>308</td>
</tr>
<tr>
<td>Scotland</td>
<td>110</td>
</tr>
<tr>
<td>Northeast</td>
<td>46</td>
</tr>
<tr>
<td>Cumbria</td>
<td>93</td>
</tr>
<tr>
<td>Yorkshire</td>
<td>48</td>
</tr>
<tr>
<td>Midlands</td>
<td>154</td>
</tr>
<tr>
<td>South East</td>
<td>386</td>
</tr>
<tr>
<td>South West</td>
<td>85</td>
</tr>
</tbody>
</table>

Figure 1: The make-up of the UK Submarine Market

Tier 1 the market is characterised by monopoly-monopsony relationships between MoD and these three suppliers:

**BAE Submarine Solutions**, an operating division of BAE Systems, is responsible for designing and building of nuclear submarines and integrating their equipment and systems. Based in Barrow-in-Furness, the yard, owned by BAES, is the only facility in the UK capable of designing, building and integrating nuclear submarines

**Babcock Marine** is primarily responsible for delivering support of nuclear submarines. They own and operate Devonport Royal Dockyard managing many of the services provided by the Naval Base, such as engineering support to ships and submarines, facilities management and berthing. Devonport contains the only facilities in the UK able to conduct de-fuel and refuel operations for nuclear submarines.

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Rolls-Royce Submarines designs, part builds and supports the Nuclear Steam Raising Plant (NSRP), (the reactor, which is the most significant platform system within the submarine in terms of cost).

Tier 2 is broadly defined as those suppliers identified as essential to the delivery of submarine capability, including those required to maintain an indigenous UK industrial capability. This includes members of the BAES-led Astute Key Suppliers Forum (Alstom; L3 Communications; McTaggart Scott; Sheffield Forgemasters Engineering; Thales; Ultra Electronics; Weir, Strachan and Henshaw; Wellman Defence; York), who together with MoD and the prime contractor (BAES) are responsible for the majority (75%) of Astute’s materiel spend,

Tier 3 covers a wide-ranging supplier base that includes markets within, and related to, the submarine market. Tier 3 comprises a wide-range of suppliers that directly support Tier 1, Tier 2 and MoD across the totality of the Submarine Enterprise

Source: Ministry of Defence Impact assessment of a public policy exclusion order to support a submarine enterprise collaborative agreement

3.21 The supply chain spread means that any decisions to abandon a like for like replacement will be felt across Britain as well as in Barrow and Furness.

4. What are the economic and industrial implications resulting from options other than a like for like replacement of Trident?

4.1 The Trident replacement project is a nationally important capital project taking place over the next 30 years providing secure jobs for the highly skilled and professional work force already involved in it, as well as providing further opportunities for the engineers and apprentices of the future including 1,000 more new jobs in Barrow and spin off potential from Anglo-American defence technology transfers.

4.2 Clearly the extent of the economic and industrial effect of replacing trident with something other than a “like for like replacement” submarine would depend on what those options might be. There might be proposals for:

- air or land based solutions – these would be of no benefit to Barrow;
- surface warship based solutions might deliver some benefit;
- submarine based solutions could deliver some benefit.

4.3 It is not clear if a solution comprising an Astute submarine carrying nuclear tipped cruise missiles is feasible. USA announced in 2010 it was withdrawing its nuclear tipped cruise missiles capability. There may have to be a significant investment in new technology to deliver such a system. If it were decided to build more Astute submarines specifically for a new deterrent task each new boat might keep enough work to keep 2-3,000 people employed at a drumbeat for each 24 or 36 month drumbeat of orders.

4.4 However nothing compares to the delivery of the planned successor fleet which has already created many jobs in Barrow and looking ahead would create 1000 more jobs, guarantee work for 30 years in Barrow and across the UK supply chain or through international collaboration. An immediate casualty would be the planned 1,000 new jobs anticipated in Barrow, something the area cannot afford to contemplate.

4.5 In addition, according to UNITE, in a press statement made on 30 July 2010, a decision not to replace Trident announced in, say, 2016, will mean “Up to 13,000 jobs could be at risk if Trident is delayed and any lengthy delay will mean that Britain is in danger of losing the skills and ability to build such submarines.” The 13,000 jobs that could be under threat are located at Barrow (where the submarines are built), Faslane (where they are based), Derby (where the nuclear reactors are built) and the Devonport dockyard, Plymouth (where the subs are refitted and repaired).
4.6 The present Astute submarine programme is scheduled to run until 2024. Construction of the remaining Astute submarines with the last one delivered around 2024/25 does not allow ample time to introduce appropriate adjustment policies for Furness this is because:

- Astute design and much of the build has largely been completed - if design work terminated on successor alternative work would be needed to justify keeping large numbers of designers;
- The MUFC concept for a follow on to the Astute class SSN is too distant in time to engage substantial numbers of designers;
- Glasgow’s BAE yards are coordinating Type 26 design work and would be unlikely to switch to using Barrow resource, at least in the short term;
- The engineering function is already at a critical point with the 1,000 engineers transitioning from Astute onto the Trident replacement programme. This capability would be immediately placed at risk should the programme be cancelled.

4.7 The loss of the successor programme would have a significant impact on jobs, economic prosperity and the manufacturing capability - core skills could start to be lost rapidly if replacement work was not created quickly.

4.8 The loss of skills resulting from the cancellation of the Successor replacement programme could put into question the viability of the country’s ability to deliver any future submarine programmes and lead to a resurgence of workload gap problems experienced on the Astute project which were a direct consequence of the loss of skills which resulted from the gap of several years between Trident and Astute.

4.9 Supply chain businesses would be negatively impacted from any decision not to replace the Successor class. Spend on successor would increase above the current level experienced on Astute in the UK Supply Chain - in 2011 it amounted to more than £200m with 2100 suppliers. There would also be a wider spill-over impact from reduced wages and spend in the supply chain.

4.10 BAE Systems places a huge focus on internal staff development and encouraging education including apprentices and training and encouraging science and technology education within the broader community. The Successor programme would be the largest driver, and beneficiary for the apprenticeship and early career offering within the company over the next ten years. Lack of growth at the shipyard means this investment in young people would be curtailed.

5. What are the economic and industrial considerations in taking forward an active policy of diversification both for Barrow and its supply chain?

5.1 The turnover at Barrow shipyard is generated 99% from MOD revenue, almost entirely from the submarine programme. This dependency has been consciously driven by both BAE Systems and MOD to enable the shipyard to focus on the submarine programme without the distraction of diversification options in order to produce affordable submarine fleet solutions.

5.2 Barrow-in-Furness is the most vulnerable local economy should the cancellation of a Trident replacement occur in 2016. Plymouth (Devonport), Glasgow (Faslane) and Derby (Rolls Royce) all have better connected more vibrant economies. The impact of further potential job losses on Barrow is, as indicated in section 3.10, more severe than most locations because of the tight distance to work envelope, the absence of significant alternative local employment, and the level of dependency of the local supply chain on the Shipyard:

5.3 Adjustment and resource re-allocation would take considerable time, especially where resources are highly specific to the defence sector and are non-transferable to alternative civilian uses. Adjustment depends on the transferability of skills and other resources. For those employed now in shipbuilding there is, as we saw in the early 1990s and again in 2003 and 2004, potential for hardship associated with the loss of income from redundancy and unemployment. Government would need to assist change and resource reallocation through such manpower policies as:

- Labour retraining;
5.4 Induced multiplier effects would occur as redundant workers reduced their spending in the local economy, which would impact local shops, restaurants, and leisure outlets. For illustration, an induced multiplier of 0.2 would mean a loss of 20 jobs locally for every 100 job losses at BAE Systems in Barrow. However, the time-scale of the adjustment for Barrow is lengthy.

5.5 Some diversification of the industrial structure of Furness will emerge from the growth of a new biopharmaceutical science park at GlaxoSmithKline in Ulverston. Patent Box tax incentives were the catalyst for attracting this development along with the skills base. By 2020 there should be 350 highly skilled jobs at the facility at a cost of £500m. This could lead to a modest number of supply chain benefits locally.

5.6 Offshore renewable energy is anticipated to deliver another 80 jobs in the next two years. This will add to the 120 or so estimated to be available at three onshore support bases now operational at the port of Barrow. It is difficult to foresee more activity in this field as the operators current focus is on reducing the cost per MW of electricity by working with established, largely overseas based, suppliers which are well known to them.

5.7 Diversification through supply chain strengthening and promoting innovation are being fostered using Coastal Communities Funding.

5.8 In 2003, when arguably the uncertainty after the future of Barrow Shipyard was most acute the NWDA / DTI sponsored Barrow Task force in September 2003 asked PA Consulting to examine a long list of potential diversification options, which resulted in ‘7 best entrepreneur led possibilities when as shown in Figure 2 below.

5.9 Of the options illustrated in Figure below, PA Consulting their focused in renewable and allied Technologies, Design Engineering and Technical Services marine leisure and to a lesser extent supply base opportunities. Most significantly they conclude:

“...it is estimated that these options could in time, create in the region of 320 and 510 jobs... i.e. an average between 46 and 73 jobs per year”.

**Figure 2: External Entrepreneur Led Diversification**
“...it is critical to the local community that the shipyard continues to employ significant numbers of people.”

“There are no diversification options available to the Barrow Shipyard that will realistically have anywhere near the positive impact on employment that an Astute Class Submarine has. The Diversifications could create 300 – 500 jobs – nowhere near the 2000 – 3000 jobs that a single Astute requires – it is therefore critical to Barrow that further Astute are ordered.”

“Our research has shown that the value of one additional boat, employing 2,000 – 3,000 people for 18 – 24 months, is worth more to Barrow than any combination of diversification possibilities. Non-Naval diversification possibilities are limited and might generate a few hundred jobs at best.”

“The development of diversification options could create additional employment or help fill the gaps, but will probably need entrepreneurs to develop the options – this is unlikely from within BAE Systems, as their corporate focus is Military work.”

5.10 Arguably today when the shipyard employs over 5,000 people they are even more relevant.

5.11 Achieving a level of diversification during the timescales of the underlying stability provided by Successor programme would protect the area from the impact of a reduction in the workforce at the end of that programme. The successor submarine programme is critical to a longer term aspiration to encourage diversification to reduce the dependency of the Furness economy on the shipyard and protect it from any decline in employment post-delivery of the Trident replacement class. The growth opportunity presented to the supply chain by the Trident Replacement programme is fundamental to this success and fundamental to supporting other businesses in the area dependant on the economic value generated from wages from the shipyard being spent in the local area.

5.12 There is a local strategy to reduce the dependency of the local area on the shipyard and support for that programme, assisting local supply chain and SMEs to grow and diversify on the back of the stability which the submarine programme offers. Government support for that strategy through for example the BIS Assisted Area discretionary grants, DCLG sponsored, Big Lottery provided, Coastal Communities Fund enables us to market the area to firms looking to expand or relocate or develop new local supply chain linkages.

6. What can be learnt from previous initiatives to diversify and/or regenerate the Furness Peninsula?

6.1 Post the 1990 decision to downsize after Trident, considerable effort was made by the shipyard to explore opportunities to diversify. The original aim was to secure 25% businesses from non-defence work. By 1993 this altered to a focus on core defence business as non-diversification options were deemed sustainable, or financially viable.

6.2 In 1991 the shipyard also became a founder Board member of a new local enterprise agency, Furness Enterprise Ltd, investing its Director expertise plus financial assistance of £830,000 spread between 1991-2 and 2006 (source: Fe Annual Report published accounts). The wide ranging partnership detailed in Section 1 has over the years had significant success in attracting new businesses, helping start-up companies and lobbying for resources to replace the jobs lost and help create as new more vibrant economy.

6.3 Recent studies have concluded that this locally based locally focused holistic approach of helping firms develop access to money and markets and linking employers to people with skills to offer has worked well and that very little development is delivered to an area like Furness through national inward investment agencies or those with a much wider remit than the local area.

6.4 Plans for economic development of the area are all dependent on the continued existence of the shipyard, providing economic input to the area through wages and supply chain activity and on improving the quality of life in the local area to attract and retain the skilled workforce necessary to deliver the submarine programme.
6.5 Diversification opportunities have been explored locally with some success in:

- The low carbon lighting cluster in both Barrow and Ulverston;
- Offshore gas support;
- Off-shore wind farms;
- Electronics and systems integration;
- Attraction of modest scale service sector financial services employment;
- Formation of new mainly lifestyle businesses.

6.6 Perhaps the largest diversification was the emergence of subsea electronics firms spawned from new business creation over the past twenty five years. This has led to creation of around 750-900 jobs in Siemens, Rovtech, Handmark, Diamould, James Fisher and similar firms.

6.7 It is difficult to see how such initiatives could occur now with much less resource available to support individual firm’s growth.

7. What is the scale and type of investment and commitment that is required by Government and others to sustain and develop jobs and skills in Barrow?

7.1 There would have to be an unprecedented scale of intervention to help the area.

7.2 Currently it has Assisted Area Status. This enables in exceptional cases projects needing £2m in grant to secure support for capital investment and job creation at rates of 15% for large firms employing 250 people or more and up to 20% or 30% for firms with fewer employees. This ends in December 2013.

7.3 Even if it is renewed by the EU they are proposing that help to secure investment by large firms is abolished meaning that it would be difficult to persuade firms to set up in Furness.

7.4 The cost per job for creation of alternative employment varies considerably and is subject to EU State aid rules on what can be offered to individual companies. The most recent study in the National Audit Office Regional Growth Fund, May 2012 study shows it ranges from £4,000 to £200,000 per job averaging £33,000 per job. Previous studies, summarised below, suggest that the range can be £11,000 to almost £44,000.

<table>
<thead>
<tr>
<th>Business Activity</th>
<th>Cost per job range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Development and Competitiveness</td>
<td>£12,000-£30,800</td>
</tr>
<tr>
<td>Physical Regeneration</td>
<td>£42,000</td>
</tr>
<tr>
<td>People and Skills Interventions</td>
<td>£43,300</td>
</tr>
<tr>
<td>Business Link</td>
<td>£11,578</td>
</tr>
<tr>
<td>Grants for R &amp; D</td>
<td>£29,700</td>
</tr>
</tbody>
</table>

7.5 KOFAC advise in their earlier submission that the current turnover at the shipyard is in the region of £600m and will increase over the next 5 years to more than £1bn, 50% of this turnover being through supply chain. They add that the size of government intervention required to sustain and develop jobs and skills in Barrow could be enormous. A major intervention by central government to entice a significant inward investment into the area, of a similar size to the shipyard would be required.

7.6 It could require the equivalent of a Nissan car plant which took £3.3b and 25 years to develop into a facility with 6,000 jobs.

7.7 The shipyard is an artisan business requiring and creating a highly skilled workforce. Few businesses would require or could replace this level of skill, even at the levels of turnover and jobs.

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Page 47, Price Waterhouse Coopers Report 2009

Page 58, Price Waterhouse Coopers Report 2009

Page 72, Price Waterhouse Coopers Report 2009

7.8 As an example, there has been huge public celebration at the recent announcement of an investment in GlaxoSmithKline in nearby Ulverston. This is indeed a significant success and should be celebrated but will only create 500 jobs, albeit a large number will be highly skilled.

7.9 Barrow already has the fastest declining population in England and Wales. Without the submarine programme, this investment would not be made and young local talent would continue to evacuate the area. With a robust secure future at the shipyard and a strategy to encourage growth and diversification within the local supply chain, the employment opportunities would ensure that large elements of that indigenous talent pool were retained.

8. What other actions might be taken by wider partners and civil society in response to the need for diversification?

8.1 A continued focus on stimulating growth skills development and job creation in Furness.

8.2 BAE Systems delivers an extensive Corporate Social Responsibility agenda from the shipyard to encourage local supply chain, SMEs and entrepreneurs to grow and diversify on the basis of the stability offered by the programme of work at the shipyard.

8.3 Cumbria Local Enterprise Partnership (LEP) works closely with the economic development bodies within the local area, and at the County and regional levels, and with BIS exploring opportunities to support this agenda. In our view:

- Attracting Inward Investment by using UKTI / Fe to diversify employment is essential;
- Improving standards in education, healthcare, transport infrastructure and the social arts provision is also necessary

8.4 Other employers in the local area can be dependent on the shipyard as a source of talent and skills for their own emerging businesses in addition to their dependence for orders and economic value from wages. Working with these other bodies we can encourage other employers to initiate their own training schemes, again supporting the retention of young local talent.

8.5 In order to meet the demands of the planned submarine programme, there is:

- A requirement to recruit a significant number of highly skilled employees and
- A need for support from the government to assist in regeneration plans to enhance the quality of life in the local area.
- A need to address barriers to recruitment is the lack of alternative employment options in the local area for spouse/partner opportunities.

9. What are the lessons that can be learnt from comparable international programmes?

9.1 We are not aware of any proven international diversification programmes delivered in remote peripheral urban centres where a high percentage of the population is involved in defence manufacturing and a sudden reduction in business occurs apart from Barrow’s experience from 1991 onwards.

9.2 The past 21 years has demonstrated that whilst some significant success has occurred there remains deep seated challenges.

9.3 There are some clear general lessons about attempts to diversify aptly summarised in Disarming Military Industries, P Southwood, MacMillan some key points of which are shown below:

- Government agencies should encourage diversification if preparation for military cutbacks is taken to be in the public interest P159;
- Up to 10 years might be needed to design and develop products for commercial markets p158;*
Where diversification involved a radical change in market being served result generally was failure or limited success……these experiences influenced the management of defence firms to be wary of non-defence non-government diversification p156; *

It was not so much a general marketing capability which defence companies lacked but an established position in the markets they wished to enter p157; *

The requirement to separate defence from commercial engineering poses another barrier due to different accounting practice expense of using plant …contrasting attitudes and pay;

Commitment of top management to diversification is a primary requirement P158;

Defence industry technology is often too sophisticated for commercial customers …..defence manufacturers had costs which are very high compared to normal commercial standards p157; *

Conversion is still a concept awaiting field testing p161; *

Government may need to take on the role of buyer of civilian products if defence firms are to convert successfully p167; *

9.4 We have no real knowledge of comparable international programmes in the industry. Within the UK, attempts to rejuvenate, through diversification, shipyards which have been in decline or have closed have failed. There are many examples of this including Cammell Laird, Swan Hunter, Harland and Woolf etc. Despite all attempts to replace the jobs lost, the damage to the local areas has been significant

10. Conclusions

10.1 It is our view that there is no alternative to replacing the existing trident submarines, we endorse the view that:

“At this particular time, nuclear deterrence should be deemed critical for US and allied security. For some plausible threats, to paraphrase Frederick the Great, deterrence without nuclear weapons is like an orchestra without instruments. It can produce noise but probably not the desired music.”

“Credible deterrence is a precious product that defies easy or precise prediction. But, we do know that in the past, nuclear deterrence contributed to preventing conflict or escalation, and it may be necessary to do so again when we face severe risks. Consequently, the maintenance of credible nuclear deterrence should continue to be a national priority.”

10.2 The risk of a nuclear threat to the security of the UK remains a real one. There are sound national strategic defence reasons why Britain should keep its strategic nuclear deterrent missiles which have a design life until the 2040s.

10.3 It is the nuclear powered submarine fleet that needs replacing, with an updated version of the four boats originally commissioned between 1993 and 1999.

10.4 By 2028 the first operational Trident missile carrying Vanguard class boat will be 35 years old using aging technologies and stealth capability.

10.5 Barrow shipyard might only benefit from replacing the existing strategic deterrent platforms with something other than a like for like solution involving nuclear tipped:

- Warship based cruise missiles
- Submarine based cruise missiles

However, a submarine based cruise missile solution could have limited operational impact as described by Dr Julian Lewis in Hansard Col 210 of 20 May 2010.

10.6 Switching away from a submarine solution would create a severe workload gap at Barrow for designers and for production, test and commissioning skills. This is because the next generation of submarines (termed MUFC) is not planned for design until the late 2020s.

10.7 Astute submarines create work for 2000-3,000 people over a drumbeat of 24-36 months.

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* Maintaining flexible and resilient capabilities for nuclear deterrence strategic studies quarterly summer 2011, Payne K.B.
10.8 Shipyard diversification potential has been thoroughly explored since 1990 at regular intervals. At the same time there has been a concerted effort by government backed agencies, local authorities and local delivery bodies including Furness Enterprise, UKTI export service, Cumbria Chamber of Commerce and now Cumbria LEP to facilitate new investment and job creation which has created a more balanced resilient economy.

10.9 At the end of 2003 independent consultants concluded that the best of seven diversification possibilities could create between 310 and 500 jobs over an eight year period.
### Appendix A: The Barrow and Furness Economy SEPTEMBER 2012 Key Features (30 Oct)

<table>
<thead>
<tr>
<th>Barrow</th>
<th>Category</th>
<th>Sources of information</th>
</tr>
</thead>
<tbody>
<tr>
<td>69,100 103,700</td>
<td>Population – 2011</td>
<td>Office for National Statistics Mid Year Estimates</td>
</tr>
<tr>
<td>-2,880</td>
<td>Population change 2001-2011 Since 2001 the population has fallen by 4%, compared to a 2.5% rise for Cumbria</td>
<td>Office for National Statistics Mid Year Estimates</td>
</tr>
<tr>
<td>-399 15,900</td>
<td>Fall in number of young people (aged 20-30) 2001-2011 Population under 16</td>
<td>Office for National Statistics</td>
</tr>
<tr>
<td>39,000</td>
<td>Labour Demand from TTWA</td>
<td>Office for National Statistics</td>
</tr>
<tr>
<td>58,000 40,000 16,000</td>
<td>Travel to Work Area Population 2008 In Employment 27.3% economically inactive</td>
<td>Office for National Statistics</td>
</tr>
<tr>
<td>33,761 44,600 29,600 0.66</td>
<td>TTWA Workforce size (ABI 2008) Working age pop of Barrow Workforce Barrow Job Density TTWA</td>
<td>Annual Business Enquiry Local Labour Market Indicators by TTWA 2011</td>
</tr>
<tr>
<td>2.8 / 3.8% 4.8% 2.3% 3.5%</td>
<td>Unemployment Rate &amp; Nos. in September Cumbria/GB Male – 1,379 Female - 667 Total – 2,046</td>
<td>Office for National Statistics</td>
</tr>
<tr>
<td>710 total 480 male 230 female 35.0% (UK 29.1%)</td>
<td>No./ % Unemployed Aged 16- 24 TTWA (September 2012)</td>
<td>Office for National Statistics</td>
</tr>
<tr>
<td>840 (235) 505(125)</td>
<td>Long term unemployed JSA Barrow Claiming six months (16-24) claiming a year (16-24)</td>
<td>Office for National Statistics</td>
</tr>
<tr>
<td>All persons Sept 2012 9.3% 9.4% 7.2%</td>
<td>Ward Unemployment highest Male Female 10.3 Barrow Island 1.6 10.1 Central 1.0 7.7 Hindpool 1.5</td>
<td>Office for National Statistics Cumbria Observatory April 2012</td>
</tr>
<tr>
<td>76.4% 70.4% 70.2%</td>
<td>Economic Activity Rates (2011) Male Female Total</td>
<td>Annual Population Survey</td>
</tr>
<tr>
<td>15.6% 11.1% 13.4%</td>
<td>Real Unemployment (Jan 2007) Male Female Total</td>
<td>Centre for Regional Economic and Social Research, Sheffield Hallam University</td>
</tr>
<tr>
<td>16.6% 22.1% 46.9%</td>
<td>% pop Claiming a benefit (Cumbria 11.5%) Children living in poverty within Central ward of Barrow</td>
<td>Cumbria CC</td>
</tr>
<tr>
<td>181 151 12.0</td>
<td>Few Vacancies in the Barrow Area (Sept) Notified Vacancies Unfilled Vacancies</td>
<td>Office for National Statistics</td>
</tr>
<tr>
<td>Category</td>
<td>Sources of Information</td>
<td></td>
</tr>
<tr>
<td>----------</td>
<td>------------------------</td>
<td></td>
</tr>
<tr>
<td>JSA claimant to vacancy ratio</td>
<td>Note: Copeland 8.94</td>
<td></td>
</tr>
<tr>
<td>32.8% (GB 31.3%)</td>
<td>Percentage Of Working Age Population with Level 4+ qualifications 2010</td>
<td>Annual Business Inquiry</td>
</tr>
<tr>
<td>23.2%</td>
<td>Percentage of jobs in manufacturing 2010</td>
<td>(GB 10%) Annual Business Inquiry</td>
</tr>
<tr>
<td>Barrow</td>
<td>Reliance on public sector jobs</td>
<td></td>
</tr>
<tr>
<td>23.9%</td>
<td>Office for National Statistics</td>
<td></td>
</tr>
<tr>
<td>Earnings</td>
<td>Median gross f/t weekly wages 2005</td>
<td></td>
</tr>
<tr>
<td>£389 (GB £433)</td>
<td>Median gross f/t weekly wages 2009</td>
<td>Annual Survey of Hours &amp; Earnings (NB small sample size)</td>
</tr>
<tr>
<td>£500 (GB £491)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Source:** Office for National Statistics
Sarah Longlands
Independent Academic
Glasgow University (currently researching a PhD in Regeneration of Remote Areas)

Interview held on 1 October 2012

1. What are the economic and industrial implications resulting from options other than a like for like replacement of Trident?
   - 6,300 people in Barrow work in manufacturing with the vast majority in BAE Systems so unless economy adapts we are talking about one in ten of the adult population being made redundant – true decimation.
   - BAE Systems are a global company and need to adapt and plan for longer term but even with the best industrial strategy in the world it would seem we are looking at job losses.

2. What are the economic and industrial considerations in taking forward an active policy of diversification both for Barrow and its supply chain?
   - Starting point must be the advantages that Barrow has – these are first and foremost an excellent, highly skilled, workforce but also its deep water location
   - Clearly there is a developing market for renewables and it would seem eminently sensible for Barrow to be part of the Energy Coast initiative (which is quite rightly centred on Sellafield)
   - Potentially Barrow has missed out on opportunities within the environmental technologies industry but it is a rapidly changing market so new, late entrants are not always disadvantaged certainly if they looked at the less popular options ie wave rather than wind
   - Should look at technological innovation and build on links between Barrow and University of Manchester
   - Anecdotally Cumbria is on the edge- never fully joined Cumbria (nor vice versa) but if worst came to the worst it would be an opportunity to rethink Barrow and look at what the people really want

3. What can be learnt from previous initiatives to diversify and/or regenerate the Furness peninsula?
   - Barrow has clearly benefitted from central and regional support for restructuring of manufacturing including NWDA investment and Neighbourhood Renewal
   - However educational attainment in Barrow is below the North West and UK average. According to statistics from Nomis, between January and December 2011, 17% achieved NVQ level 4 or above compared with 33% average in rest of country for the same time period. It also has high levels of numbers who are on Employment and Support Allowance (formerly incapacity benefits) 9.9% of the working age population compared with 6.5% in Great Britain as a whole. It is still extremely vulnerable - making further redundancies in this context has social implications.

4. What is the scale and type of investment and commitment that is required by Government – and others - to sustain and develop jobs and skills in Barrow?
   - Difficult to say but how/why does the Government decide that those 5,000 are a greater priority than say 5,000 in another place. Arguably Government as the purchaser has a greater responsibility – this would not be a market failure but a state failure
   - Land resource would need to be decontaminated, individuals supported. Not correct as some Think Tanks have suggested that solution is to move the north to the south.

5. What other actions might be taken – by wider partners and civil society – in response to the need for diversification?
   - Commitment must be to work in partnership with BAE Systems and the Local Authorities
6. **What are the lessons that can be learnt from comparable international programmes?**

- There is a whole library on shrinking cities – Detroit and Buffalo found their main economic purpose ended; Leipzig’s purpose – on the border with West Germany simply disappeared with reunification.
- Main responses are to rebrand and reinvent with investment perks and incentives. But even if clever and do diversify unlikely to get back to same level of investment. Also need to face up to reality
- Freiberg is an interesting case. It was to be the site of a new nuclear power station but protests led to renewables and it is now known for solar energy – in fact produces more solar power than whole of UK
- Envisioning new possibilities is difficult but necessary – it’s about looking at strengths in new ways. For Barrow it is perhaps looking at the Lakes being on its doorstep and that has plentiful affordable housing
- Some would no doubt welcome an economy geared to socially useful production rather than weapons of mass destruction. There can be benefits of change, letting go. What do people in Barrow really want - presumably not to be one industry town ultimately
- But should also be aware of people’s tenacity – in the 1960s Durham adopted a planning policy which classified pit villages A, B, C or D with those in D villages offered a home elsewhere. But this was hugely contentious with people reacting strongly to the idea that their town was worthless. Many are still there
What are the economic and industrial implications resulting from options other than a like for like replacement of Trident?

- Clearly this would depend on what those options might be.
- The Trident replacement project is a significant capital project over the next 30 years and the loss of this programme would have significant impact on jobs, economic prosperity and the manufacturing capability of the UK.
- Employment at the Barrow shipyard is expected to rise by more than 1,000 to over 6,000 to deliver the Successor programme. These additional roles would be lost; indeed there would be significant risk of substantial job losses as a result.
- Aspirations for an operational submarine flotilla would be significantly impacted.
- The Oxford Economics Report on “The Economic Contribution of BAE Systems to the UK in 2009” found that for every 10 jobs directly created by BAE Systems, another 12 jobs are supported by the Supply Chain. We would therefore assume that a further 7,200 jobs could be lost.
- The report also found that the economic value created from this activity created a further 7 jobs in the wider economy, effectively meaning a further 4,200 jobs at risk.
- Therefore a potential 17,400 livelihoods would be at risk if the Trident Replacement project did not go ahead.
- In 2001 alone, spend from Astute construction in the UK Supply Chain amounted to more than £200m with 2100 suppliers. 2100 businesses could therefore be negatively impacted from any decision not to replace the Trident class.
- The vast majority of our Supply Chain is UK based – submarines are very much a UK focussed product and therefore the industrial and economic impact on the UK economy would be vast.
- A recent RUSI report on the “Destination of the Defence Pound” found that for every £1m spent on Defence project, close to 36% was returned to the Exchequer via tax and NI contributions etc therefore any savings forecast would be overstated by this amount.
- BAE Systems places a huge focus on internal staff development and encouraging education including apprentices and training and encouraging science and technology education within the broader community. The Successor programme would be the largest driver and beneficiary for the apprenticeship and early career offering within the company over the next ten years. Lack of growth at the shipyard means this investment in young people would be discontinued.
- The loss of skills which would result from the cancellation of the Trident replacement programme would prohibit the country’s ability to deliver any future submarine programmes. The problems experienced on the Astute project have been as a direct result from the loss of skills which have resulted from the gap of several years between Trident and Astute.
- Whilst the Astute programme is not scheduled to complete at the Barrow shipyard until 2013, the engineering function has already at a critical point with the 1,000 engineers transition from Astute onto the Trident replacement programme. This capability would be immediately placed at risk should the programme be cancelled.

What are the economic and industrial considerations in taking forward an active policy of diversification both for Barrow and its supply chain?

- Options for diversification exist but could in no way compensate for the loss of submarine programme. A PA Consulting exercise was carried out in 2002 in response to the impact on the local economy from the loss of jobs at the shipyard at the end of the Trident programme when numbers employed fell from 16,000 to 2,500 at the lowest point. The exercise looked at the potential for diversification and concluded that:
  - The Barrow shipyard is an integral part of the local community and the impact of any reduction in employment at the shipyard would be dramatic due to its geographic isolation and lack of employment opportunities.
There are no diversification options available to the Barrow shipyard which could replace the jobs provided by the submarine programme.

- Barrow already has significant levels of unemployment and areas of deprivation. Any reduction in the submarine programme would have further negative impact.
- Supply Chain diversification could and should be encouraged to reduce the dependency of the local economy on the shipyard and protect it from any decline in employment post-delivery of the Trident replacement class but the underlying stability provided by the submarine programme would be critical to this longer term aspiration. The growth opportunity presented to the supply chain by the Trident replacement programme would be fundamental to this success.
- Any diminishing of the submarine programme would have a consequent impact on other businesses in the area both within the supply chain and those businesses dependant on the economic value generated from wages from the shipyard being spent in the local area.
- The UK defence sector is a significant national provider of skills training in design and specialist manufacturing and provides a receptacle for students from the STEM subject background to continue their development. Barrow shipyard will provide 136 apprenticeships, 14 advanced apprenticeships and 40 graduate intake roles in 2012 and at any time approximately 10% of its workforce is in early careers investment. These early careers opportunities would be lost and therefore these skills would not be developed and available for diversification potential.
- In addition to these numbers, a further 280 roles are required to support the Successor programme. Clearly these employment opportunities would be lost if the submarine programme were to be reduced and the additional economic value created to stimulate growth and diversification would be lost.
- The turnover at the shipyard is generated from 99% from MOD revenue, almost entirely from the submarine programme. This dependency has been consciously driven by both BAE Systems and MOD to enable the shipyard too.
- The current turnover at the shipyard is in the region of £600m and will increase over the next 5 years to more than £1bn, 50% of this turnover being through supply chain.
- The size of the government intervention required to sustain and develop jobs and skills in Barrow would therefore be enormous.
- A major intervention by central government to entice a significant inward investment into the area, of a similar size to the shipyard would be required.
- To put this into context, the turnover in shipbuilding terms is the equivalent of 3 cruise liners.
- It would require more than the equivalent of a Nissan car plant.
- The shipyard is an artisan business requiring and creating a highly skilled workforce. Few businesses would require or could replace this level of skill, even at the levels of turnover and jobs.
- As an example, there has been huge public celebration at the recent announcement of an investment in GlaxoSmithKline in nearby Ulverston. This is indeed a significant success and should be celebrated but will only create 400 jobs, albeit a large number will be highly skilled.
- Barrow already has the fastest declining population in England and Wales. Without the submarine programme, this investment would not be made and young local talent would continue to evacuate the area. With a robust secure future at the shipyard and a strategy to encourage growth and diversification within the local supply chain, the employment opportunities would ensure that large elements of the indigenous talent pool were retained.

What other actions might be taken by wider partners and civil society in response to the need for diversification?

- The Corporate Social Responsibility agenda at the shipyard is constructed around a desire to encourage local supply chain, SMEs and entrepreneurs to grow and diversify on the basis of the stability offered by the programme of work at the shipyard.
- The shipyard works closely with the economic development bodies within the local area, and at the county and regional levels, exploring opportunities to support this agenda.
Attracting Inward Investment to diversify employment would be essential. In order to do so, support to improve standards in education, healthcare, transport infrastructure and the social arts provision would be necessary.

Other employers in the local area can be dependent on the shipyard as a source of talent and skills for their own emerging businesses in addition to their dependence for order and economic value from wages. Working with these other bodies we can encourage other employers to initiate their own training schemes, again supporting the retention of young local talent.

In order to meet the demands of the programme, there is a requirement to recruit a significant number of highly skilled employees and support from the government to assist in the regeneration plans to enhance the quality of life in the local would be a significant help. A major barrier to recruitment is the lack of alternative employment options in the local area for spouse/partner opportunities.

There is a local strategy to reduce the dependency of the local area on the shipyard and support for that programme, assisting local supply chain and SMEs to grow and diversify on the back of the stability which the submarine programme offers. Government support for that strategy which enables us to market the area offering incentives to expand or relocate to the area for local supply chain and adjacent businesses would invaluable to assist in this aim.

Achieving a level of diversification during the timescales of the Successor programme would protect the area from the impact of a reduction in workforce at the end of the programme.

What can be learnt from previous initiatives to diversify and/or regenerate the Furness peninsula?

Post Trident, considerable effort was made by the shipyard to explore opportunities to diversify. None were sustainable, being financially unviable.

The shipyard also invested in £1m in the local enterprise agency which again had only limited success in diversifying the local economy to replace the jobs lost.

Regeneration aspirations for the Furness peninsula are dependent on an income stream generated from wages from the shipyard. Plans for economic development of the area are all dependent on the continued existence of the shipyard, providing economic input to the area through wages and supply chain activity and are largely focussed on improving the quality of life in the local area to attract and retain the skilled workforce necessary to deliver the submarine programme. The PA Consulting study previously referred to concluded that any options identified could in no way replace a submarine programme.

Diversification opportunities have been explored locally with some success in the low carbon lighting cluster in the Ulverston area and the proliferation of off-shore wind farms but the number of jobs created has not been close to compensating for the loss of jobs at the shipyard post Trident when the workforce reduced from 15,000 to below 3,00.

The gap between Trident and Astute caused a significant loss of jobs and skills from the shipyard during that time, despite some naval shipbuilding throughput during these years. The subsequent significant dilution of submarine skills and capability both in design and production undoubtedly contributed to the difficulties encountered on the Astute programme. In order to preserve this skillbase for future demand for submarine capability it is essential that a steady flow of work is maintained. It can take on average of six to eight years to train a fully qualified shipyard worker.

What is the scale and type of investment and commitment that is required by Government and others to sustain and develop jobs and skills in Barrow?

What are the lessons that can be learnt from comparable international programmes?

We have no real knowledge of comparable international programmes in the industry. Within the UK, attempts to rejuvenate, through diversification, shipyards which have been in decline or have closed have failed. There are many examples of this including Cammell Laird, Swan Hunter, Harland and Wooff etc. Despite all attempts to replace the jobs lost, the damage to the local areas has been significant.
1. What are the economic and industrial implications resulting from options other than a like for like replacement of Trident?

- Options (cruise on Astute, air based deterrent and reduced number of replacement submarines) have variable effect on Barrow but starting point is that Barrow economy is extraordinarily fragile and very dependent on the existing shipyard.
- Any change – but especially “doomsday” scenario of end of all submarine production in 2024 - would have a very significant affect especially on direct suppliers for whom BAE Systems orders act as “ballast” providing orders and ensuring knowledge base maintained. For non-direct suppliers – taxis, hairdressers etc - impact would be equally drastic.
- However should bear in mind that many directly employed by BAE Systems don’t live in Barrow and they may well have transferrable skills and get employment elsewhere.
- But raison d’etre for Barrow would seriously be undermined: what is Barrow going to do now? Would be similar to a pit town seeing the closure of its mine.
- Looking at the industrial dimension it is clear that Britain is a world leader in nuclear technology and missiles: any decision not to go ahead is ceding ground to competitors. However the defense industry has reconfigured itself before, and could do so again.
- Clearly has been an era wherein Government contracts have forged indigenous creativity – but equally clear in an age of austerity this will no longer be the case. The industry is bigger than UK’s needs and therefore BAE will face options regards military production: BAE is not just wrapped up in UK market.

2. What are the economic and industrial considerations in taking forward an active policy of diversification both for Barrow and its supply chain?

- Any other future for Barrow would have to work with the grain of a place that has become used to being a site for very large industrial production, not afraid to get its hands dirty and work hard.
- Clearly anyone willing to make big investment with big plans to use port would be very welcome- it could be a major deep sea port not just a military place. And it could seek to exploit links to Manchester and Liverpool city regions – it’s peripheral but not that remote.
- However is case that competitive advantage difficult because of rail and road connectivity and because Liverpool already a major port so to large extent diversification is going to have to come from within: building on existing companies.
- There have been initiatives in the past focused on the “Celtic Sea Economy” – not sure if this offers a future not least as many other places within that area eg Belfast have better offer: high grade (uncontaminated) land and more deep port space.
- Any coastal area in UK is looking at regeneration so the key question is what is Barrow’s competitive advantage? The green alternative has become the regeneration mantra – previously knowledge economy was all the fashion – but need to be aware Newcastle, Tyne and Wear, Tees Valley, Aberdeen, Dundee, and more all in this market place.
- There is another point to consider: Barrow and the Lake District seem to inhabit different cultures not just different areas. Lake District is touch feely, alternative even. The question is, can some of the Lake’s economy come to Barrow? It would be preferable for Barrow to have greater connectedness to its hinterland.

3. What can be learnt from previous initiatives to diversify and/or regenerate the Furness Peninsula?

- In 70s industrial strategy was very sympathetic and helpful to Barrow economy with for example subsidies to encourage paper mill (Kimberley Clark)
4. What is the scale and type of investment and commitment that is required by Government – and others - to sustain and develop jobs and skills in Barrow?
   - If replacement for Vanguard (Trident) pulled then clear that a package of support would need to be put together including regeneration plus some big ticket ideas such as the Morecambe Bay Bridge (which is currently probably on the D list ie would like but not likely)
   - There would need to be a Task Force, Urban Regeneration Company, which was activist and recognized the special nature of the area and able to provide significant sweeteners for others to invest and investment in infrastructure
   - Important that only those industries that can stand on their own feet are “propped up” – but you may also need to manage the decline of other sectors. So a bespoke plan required working with all partners and with many aspects including relocation

5. What other actions might be taken – by wider partners and civil society – in response to the need for diversification?
   - Whitehall through BIs would need to “enable” LEP/Local Authorities to do things differently but NB would need to be something bigger than a LEP and include Ministerial buy-in but very important that locally “shaped”
   - Lots of social capital in Barrow – social solidarity – and this needs to be utilized not squandered

6. What are the lessons that can be learnt from comparable international programmes?
   - Newcastle in Australia used to be a steelport and now has a new identity – bohemian/quirky with fast train links to Sydney. They exploited location to turn themselves into a good place to live and work and built on knowledge economy strengths
   - Hai Phong [sp?] in Vietnam similarly transformed itself from a crumbling old port to one of the busiest – but it took huge public subsidy to do so
   - Bristol is an example closer to home of a port which has transitioned into a tourist, recreational leisure area (but again it has excellent links to the capital)
   - Stockton (new university) and Hartlepool (new marina) have both come a long way following regeneration but in UK no history of truly transformational intervention – of really harnessing the capital and labour on the scale required
1. What are the economic and industrial implications resulting from options other than a like for like replacement of Trident?

- The total cost of the replacement programme means there are many implications – opportunities – for making a strategic shift in the economy if this was to be reallocated.
- For example, the package identified by the Campaign against Climate Change – which seeks to create 1 million jobs and has been costed at £52 billion – could be undertaken with the estimated £87 billion earmarked for replacement for Trident submarines.
- Other options include adoption of the Fraunhofer Institute model of Government stimulus for close to market innovations and other interventions as advanced by Mandelson during his period at BIS when advocated “industrial activism”.

2. What are the economic and industrial considerations in taking forward an active policy of diversification both for Barrow and its supply chain?

- Clear that some sums would need to be allocated to Barrow itself – retraining for example – as clearly it would suffer from any transition as did formerly coalmining towns and indeed shipbuilding cities in the North East.
- The experience of those other places suggests that in time – over a decade or two - there is a phenomenon of “phoenix” industries: new businesses related to, and using some of the skills, in the current workforce and industrial structure.
- Barrow’s isolation however means it would require greater and earlier support.

3. What can be learnt from previous initiatives to diversify and/or regenerate the Furness peninsula?

- Not aware of the specifics here so not able to comment.

4. What is the scale and type of investment and commitment that is required by Government – and others - to sustain and develop jobs and skills in Barrow?

- As outlined in answer to question two there would need to be immediate government support however if the climate change industrial plan were adopted then this would not be significant sums in Barrow itself.

5. What other actions might be taken – by wider partners and civil society – in response to the need for diversification?

- It is very difficult for a small area to stop the world changing. If the contract is not given to Barrow concerted action will be required to provide an alternative.

6. What are the lessons that can be learnt from comparable international programmes?

- A number of examples spring to mind but perhaps the most relevant – although on a larger scale – is that of Finland. In the early 1990s its economy – heavily dependent on wood and paper products – collapsed and the country faced recession. There was a conscious decision to transform the economy into a high technology exporter and to develop innovation particularly in telecommunications. Through co-production i.e. the Government working with the private sector companies such as Nokia shifted entirely from what it used to do – paper and leather products – to become a worldwide household name.
The Nuclear Free Local Authorities (NFLA) appreciates the opportunity to respond to the survey by the Nuclear Education Trust (NET) on the Trident Alternatives Review and the future of the Barrow shipyard and wider employment issues. The NFLA response is generic in nature, given that the key Cabinet Office report on alternatives to a ‘like-for-like’ Trident replacement programme is not expected to be published until early 2013, when the UK Government may potentially alter its strategy if it sees particular benefits to alternative ‘cheaper’ options. It also believes there is considerable information on this subject in the public sphere already, and it encourages NET to engage with this literature and its authors.

1. Background on the NFLA

1.1 For your information, the NFLA was established in November 1980 (1). Its initial campaign was to call for a nuclear weapons free world. That is a still a key part of its terms of reference.

1.2 Over its 32 year history it has widened its remit extensively to consider all aspects of nuclear policy – nuclear power generation and nuclear new build, nuclear safety, nuclear emergency planning, radioactive waste management and nuclear decommissioning, alternatives to nuclear power and nuclear weapons non-proliferation. It believes only by practical engagement, within the duties of local government, can it be a sensible voice for its member authorities in the nuclear policy field and sustainable energy and waste alternatives.

1.3 NFLA has been heavily involved in the Ministry of Defence’s Submarine Decommissioning Project, which is looking for a long-term strategy for dealing with the stock of redundant nuclear powered submarines currently stored at Rosyth in Fife and Devonport in Plymouth. These are similar sites with some of the same issues as Barrow, and to which this submission will refer to (2). NFLA believe it is in NET’s interest to engage with the MOD staff involved in this project.

2. NFLA and its association with Mayors for Peace

2.1 In the area of nuclear weapons policy the NFLA particularly works closely with the Mayors for Peace (3), an international local authority organisation led by the cities of Hiroshima and Nagasaki. As of 1st October 2012 the Mayors for Peace had 5,418 members worldwide, effectively representing a worldwide population of around a billion people.

2.2 Manchester City Council is a Vice President of Mayors for Peace and Glasgow City Council is an Associate Board Member of the Mayors for Peace 2020 Vision Campaign Association. The Mayors for Peace campaigns for a nuclear weapons free world largely through the operation of its main agreed policy - the ‘2020 Vision’ (4). This sets out a roadmap for a Nuclear Weapons Convention and timetable for the reduction and abolition of nuclear weapons. The NFLA strongly supports the Mayors for Peace 2020 Vision and, in co-operation with it, lobbies national state delegations at meetings of the Nuclear Non-Proliferation Treaty Conferences.

3. Existing studies on Trident and defence diversification

3.1 NFLA would like to point NET in the direction of a number of excellent summaries that have already been done in this area, which set out strategies that can be developed for diversifying the defence industry into other areas, such as the promotion of renewable energy. The NFLA particularly notes the 2007 report commissioned by CND Scotland and the Scottish Trades Union Congress on the economic and employment consequences for Scotland of cancelling the Trident programme (5). This report goes into some considerable detail into the employment infrastructure for Trident and redeployment of staff into other employment areas. It firmly argues for the development of ‘arms conversion’ projects to move the workforce on to delivering civil projects, particularly those tackling the effects of climate change and promoting renewable energy. The NFLA supports this report and recommend a similar report could be developed by NET for Barrow and the area of North Lancashire and South Cumbria.

3.2 The NFLA also recommends that NET consult the detailed work and analysis on defence diversification conducted by Dr Steve Schofield for CND, BASIC and the Campaign Against the Arms Trade (CAAT) (6). Dr Schofield has written in detail about moving the defence...
sector to civil regeneration projects and the development of renewable energy, specifically in reference to Barrow. NET would benefit considerably from bringing his expertise in to this specific project on Barrow. NFLA supports a recent opinion piece of Dr Schofield on the issue of defence diversification:

“Rather than a failed and potentially costly model, the focus should be on how government can signal fundamental changes in the economy through its own research and development and procurement priorities. Conversion then could be seen both as an investment function and as part of a new security paradigm, releasing scarce resources for new industries that will provide both employment and guaranteed, indigenous sources of energy supply.” (7)

3.3 NFLA believes the NET study would greatly benefit from Dr Schofield and John Ainslie from CND Scotland sharing their considerable research and expertise in this area with it. The reports they have developed on a number of military sites including Faslane, Coulport, Barrow and Menwith Hill provide much of the way forward in the field of defence diversification.

4. NET’s project overview

4.1 The NFLA notes the following overview to this particular survey on the Trident Alternatives Review and Barrow:

“In Barrow, and some other UK local economies, there is a high dependence on nuclear weapon defence related industries and the Government’s Trident Alternatives Review due to report late this year will determine whether there are:

- credible alternatives to a submarine-based deterrent?
- submarine-based alternatives to the current proposal, e.g. modified Astute using cruise missiles?
- alternative nuclear postures, i.e. non-CASD [continuous at-sea deterrence], which could maintain credibility?

4.2 Our independent survey and research aims to take evidence and listen to a spectrum of views on the economic future for Barrow in the context of the Trident Alternatives Review.”

4.3 The rest of this submission will briefly set out NFLA’s views on such matters.

5. NFLA’s response to the Trident Commission

5.1 Before commenting on some of NET’s queries around Barrow and defence diversification, it is useful to know about the NFLA’s views on Trident replacement and the Trident Alternatives Review. The NFLA have made a separate submission to the Trident Commission – the independent cross-party Parliamentary grouping supported by BASIC (British American Security Information Council) – on its views around Trident replacement. This is attached as Appendix 1 and it is this document that forms the basis of its approach to UK nuclear weapons policy (8).

5.2 This submission outlines NFLA’s full support for the development of a Nuclear Weapons Convention at the United Nations and the encouragement of steady moves towards the reduction and eventual elimination of the UK’s stockpile of nuclear weapons and the parallel end of the Trident submarine programme. As a principle therefore NFLA seeks to see the eventual reduction and elimination of the UK’s nuclear weapon stockpile in as timely a period as is practical and possible.

6. Economic and industrial implications for not choosing a ‘like for like’ Trident programme

6.1 For an area like Barrow, where the BAE shipyard is such a fundamental driver for the local economy, any of the options other than a ‘like for like’ replacement of Trident will mean a potential reduction in the workforce and economic benefits to the area of continuing to build Trident submarines. Even a ‘like for like’ replacement only guarantees a relatively stable amount of employment for around the next 35 years whilst the programme is delivered, leaving longer-term concerns over the level of employment at the Barrow facility. Considerable work would therefore need to be undertaken by central government, local government, development agencies and the private sector whatever decision is taken in the short, medium and longer-term.
6.2 Land, ship or air alternatives to building Trident submarines may be built at other sites than Barrow. They may require some of the specialist staff based at Barrow who design some of the specialist components for such an alternative, but it is likely the shipbuilding staff that would construct new Trident submarines would not be required in the same quantity.

6.3 A modified Astute submarine carrying cruise missiles would give Barrow some hope that submarine building at the site would continue, but it again may not require as much staff as currently works at the shipyard.

6.4 Other alternatives, like moving away from Continuous-at-sea deterrence (CSAD) and reducing the amount of Trident submarines from four to three, as had been mooted by the previous UK Government (9), could also see medium and long-term reductions in BAE Barrow staff in the design area of the facility, though it may mean more regular routine maintenance of Trident submarines would be required, given a smaller number of submarines. However, the current UK Defence Secretary has said that the UK will maintain CSAD ‘for decades to come’ in a recent announcement of £350 million to spend on the design phase for Trident replacement (10). The NFLA would strongly support moving away from CSAD as a positive policy to show that the UK Government is serious in moves towards multilateral disarmament of nuclear weapons.

6.5 At present, the NFLA does not feel in a position to make more detailed comments on these alternatives, and the economic and industrial implications on choosing them, until the UK Government Cabinet Office review is finally published and compares in detail all these options with keeping the status quo of a ‘like for like’ Trident replacement. It believes that it may be possible to provide a ‘cheaper’ alternative to a ‘like for like’ option. Again though as a principle it wishes to see the eventual phasing-out of Trident and is not particularly in favour of any alternative option unless they are part of a commitment to reduce the UK’s nuclear weapon arsenal and move towards the eventual scaling down of its nuclear weapons programme.

6.6 The NFLA notes the heavy financial implications of taking any of the four options for Trident replacement will have an impact on the nuclear weapons policy of the next UK Government and the UK Parliaments of 2015–2020 and 2020-2025. A spending profile for Trident replacement for a ‘like for like’ alternative is clearly going to be the most expensive of the four options and the graph below (11), produced by BASIC (British American Security Information Council), shows the heavy financial commitment to Trident replacement, particularly towards the beginning of the next decade. As MOD spending has already been reduced by over 20% in the lifetime of this Parliament, and the Chancellor has previously said Trident replacement needs to be met within existing MOD budgets, the NFLA would not be particularly surprised if a future Government post-2015 does actively consider one of the cheaper options that the Cabinet Office review may provide, prior to the ‘Main Gate’ decision on Trident. The extent of the UK’s public debt suggests that continuing pressures on the MOD budget may well continue for the next decade or more, meaning political decisions are likely to be a factor in Trident replacement, as much as economic and industrial decisions.

**Spending Profile for Trident Replacement 2007 - 2042**

![Spending Profile Graph](image)
7. MOD figures on jobs and Trident cancellation

7.1 The NFLA would point NET to consider the latest publication of figures released by the MOD under the Freedom of Information Act that highlights the amount of jobs directly dependent on Trident at Faslane and Coulport, which has some bearing on the situation at Barrow shipyard and the terms of the political debate over its future. These figures were published in the Sunday Herald (12).

7.2 The report noted public statements from Ministers, MSP’s and the Parliamentary Scottish Affairs Committee of between 6,000 and 11,000 jobs dependent on Trident in Scotland. The released figures actually suggest just 520 civilian jobs work on the Trident programme at Faslane and Coulport. The NFLA notes the comment of Stephen Boyd, Assistant Secretary of the Scottish TUC, to the release of these figures: “Suggestions that as many as 11,000 jobs would be lost to Scotland if Trident were not replaced are inaccurate…Our study concluded that the reduction in direct and indirect civilian employment across Scotland would be less than 1,800 and that this reduction would not take place until after 2022.” (13)

John Ainslie from CND Scotland added: “The loss of 520 posts would be a serious blow to those directly affected, but far more jobs would be created if the same money was spent on anything else. Each year the UK government is spending two billion pounds of our money on nuclear weapons.” (14)

7.3 The key point to make here is the complexity in determining how many actual jobs there will be in developing a ‘like for like’ Trident replacement programme and the wider supply chain with the political claims that are made on both sides of the debate. NET needs to actually determine, and independently verify, the jobs on site that would work in Barrow, with the wider supply chain and whether these jobs are actually dependent solely on Trident replacement alone. The widely differing figures noted above are indicative of the political debate around what constitutes specific jobs on Trident replacement.

7.4 NFLA reiterates that the study is not simply focused on Barrow but the wider region and the supply chain into the Barrow shipyard. There is a whole raft of interlinking nuclear policy debates taking place in Cumbria to which the jobs impact of Trident replacement is just one. These include the huge amount of nuclear decommissioning that is already taking place at Sellafield and across nearby West Cumbria, the potential development of a deep-underground radioactive waste repository, as well as the jobs potential of developments in renewable energy, microgeneration and energy efficiency that is present in the ‘Energy Coast’ Cumbria project and across the north west of England (15). How much of the Barrow shipyard workforce is essential to maintaining and working on the Trident submarine programme and are other staff flexible enough to be retrained to work on some of these other job-intensive projects? It may be argued that there is a national need to keep the design team involved in the maintenance and development of the Trident programme, but can the wider construction staff be moved to other areas of job creation? The NFLA argue NET needs to focus its study in this area.

7.5 A further factor the NFLA would like to raise is the continuing issues with dealing with redundant nuclear-powered submarines which were constructed at Barrow. An exhaustive decade-long MOD consultation has taken place to determine what to do with 27 redundant submarines currently stored at Rosyth in Fife and Plymouth in Devon (16). The NFLA has been an active participant in the Advisory Group for this project. A final decision on what to do with these submarines is expected to be made by Ministers in 2013. The sensitivity and problems that this lengthy consultation has shown is a clear concern from many groups, like the Nuclear Submarines Forum, that new submarines should not be built to add to the radioactive material legacy that the redundant submarines clearly have. As a matter of principle, NFLA would have considerable sympathy with this view as we exemplify in our similar concerns over a new civil nuclear reactor programme creating new stockpiles of radioactive waste.

8. The location of Barrow and defence diversification

8.1 Like many nuclear reactor sites, Barrow is in a relatively isolated area of the country which creates issues of attracting external investment. This has - like West Cumbria, Argyll & Bute, Anglesey and Caithness, to give similar parallel examples - made it over-reliant in the past to the nuclear submarine shipyard site in the town. Like some of these areas, there has already been considerable contraction in the workforce at the Barrow shipyard following previous defence cuts. The workforce has already significantly reduced from 15,500 in 1990 to 5,800 by 1995 (17). By 2007, the current workforce was as low as 3,200 and this has not
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significantly changed (18). The NFLA would see this decline in staff as indicative of the need to find alternative employment and economic solutions to the area. Even a ‘like for like’ Trident replacement programme will only guarantee jobs for perhaps another 30 – 40 years, whilst the deep and continuing cuts in the MOD’s budget remain a real source of issue as to whether there will be any huge benefits from Barrow remaining so reliant on the military for its employment profile.

8.2 As the design team (of around 600) for Trident submarines is embedded in Barrow a hard look has to be taken as to the national interest of retaining such specialist staff, even if it is to ensure the safe maintenance of existing submarines and future decommissioning of redundant submarines. The NFLA believes specific and detailed research needs to be undertaken about the value of retaining the specialist skills set of this team whilst longer-term strategies for nuclear weapon disarmament take place.

8.3 Any review of Barrow also needs to consider the wider supply chain to the Trident submarine programme and its flexibility for defence diversification. As noted above with the similar case of Faslane and Coulport, is Trident at these two Scottish sites simply made up of the 520 staff the MOD note work on the site, or the 11,000 staff that it is claimed work on ancillary suppliers in the wider area? Is it possible that many of the companies in the supply chain have the ability to diversify into different engineering sectors like renewable energy and climate change mitigation – with sufficient support from regional and national agencies? If this is the case, and the NFLA argue this is possible given further detailed research of the Barrow area, it may leave a much smaller number of staff where intensive retraining programmes and regeneration projects can be focused on by local development agencies, along with targeted national and European Union financial support.

8.4 It should also be noted that, through the local Council and regional development agencies, with national and European funding, considerable defence diversification in the form of the regeneration of the Barrow and Furness Peninsula has already taken place since defence cuts began to bite in the 1990s. This has been particularly focused around the commencement in 2007 of Barrow’s £200 million Dockland regeneration project. Due to be completed by 2020, the project includes a new ‘Barrow Marina Village’ which will incorporate an £8 million 400-berth marina, 600 houses, restaurants, shops, hotels and a new state of the art bridge across Cavendish Dock. A large watersports centre is also being built. The possible development of a cruise ship terminal in Barrow could allow it to become a hub for the increasing amount of cruise ships stopping in Cumbria as a gateway for tourists to visit the nearby Lake District. (19).

9. An obvious alternative - nuclear decommissioning and renewable energy production

9.1 In terms of practical defence diversification projects for Barrow, NFLA recommend that NET use Steve Schofield’s detailed 2007 study for BASIC – Oceans of Work: Arms Conversion Revisited’ as a blueprint. This highlights the alternative economic opportunities that exist in the Barrow and wider area for a move away from dependence on the shipyard (20).

9.2 Dr Schofield’s study “…puts the case for arms conversion as integral to a ‘national needs’ programme of civil research and development and manufacture, including a major investment in offshore renewable energy, for both the security of supply and to help tackle the growing international threat from climate change.” (21)

9.3 The study goes into considerable detail into a variety of ways by which Barrow is well suited for the development of onshore and offshore wind production, tidal and wave power and energy efficiency demand management projects. Barrow is also close to many nuclear facilities in West Cumbria, particularly Sellafield, and through retraining using the National Skills Academy for Nuclear, there must be scope for many Barrow employees to be available for the consider nuclear decommissioning that is taking place in the area.

9.4 The NFLA has conducted its own recent national analysis of how to take forward a wide renewable energy mix, energy efficiency projects and community led microgeneration projects. The report that considers these issues in England gives a whole raft of ways to take these policies forward and the employment and economic benefits that arise from them. As a Local Authorities organisation, the NFLA sees Councils and relevant economic development bodies as playing a critical part in this process. NFLA encourages NET to consider its report as examples of defence diversification projects for large parts of the Barrow workforce. (22)

9.5 Notwithstanding this, Barrow is already becoming a significant hub for energy generation and handling. A number of offshore wind farms located off the Barrow coast form one of the highest concentrations of wind turbines in the world, including Walney Wind Farm, currently one of the world’s single largest offshore wind farms. (23) There are considerable
opportunities for other renewable energy projects where the isolated geography of Barrow may become of a benefit to it, such as in the field of tidal or wave energy production. As a former coal mining area, studies should also take place on its suitability as a location for geothermal energy.

9.6 NFLA also recommend NET consider the ‘Manifesto for Anglesey’ developed recently by the pressure group ‘People against Wylfa B’. This gives a good summary of alternative energy projects, nuclear decommissioning and other employment opportunities instead of building a new nuclear reactor on the island. There are some obvious similarities here with Barrow. (24)

Conclusion

10.1 NFLA welcomes NET conducting this study at a time when a decision over a ‘like for like’ Trident replacement is being considered and more cost effective alternatives being proposed. As a matter of principle the NFLA is opposed to Trident replacement and would see developing such a policy as a positive way the UK Government can contribute to the movement for a nuclear weapons free world and reduce the possibility of further nuclear weapons proliferation.

10.2 NFLA is sensitive to the needs and capability of the staff in the Barrow shipyard and believes they have formed previously a national resource which should be appropriately supported into alternative economic and employment areas where transferable skills can be honed down. The core design team’s role remains a sensitive national asset and may need to be considered in a slightly different context to ensure any existing maintenance and future decommissioning of Trident can be achieved successfully.

10.3 NFLA would be keen to engage with NET as this project develops further. It strongly encourages NET to liaise with defence diversification experts like Dr Steve Schofield. NFLA believes much information on defence diversification in reference to Barrow is already in the public sphere and it should be taken up pro-actively as a positive way forward. By undertaking such projects Barrow could move away from being a centre of the military industrial project to a leading centre for renewable energy, nuclear decommissioning and climate change mitigation technologies. It can only do this with significant local, regional, national and European financial support, particularly in these difficult economic circumstances.

References:

1. NFLA website – http://www.nuclearpolicy.info
2. Ministry of Defence Submarine Dismantling Project
5. CND Scotland and Scottish TUC – ibid
8. BASIC Trident Commission – http://www.basicint.org/tridentcommission
11. BASIC’s latest report on Trident spending can be found in the report by Paul Ingram and Nick Ritchie, ‘A crisis in the financing Britain’s replacement of Trident?’ http://www.basicint.org/sites/default/files/uktridentmodbudgetaug2010_0.pdf
13. ibid
14. ibid
15. Britain’s Energy Coast Cumbria – http://www.britainsenergycoast.co.uk
16. See reference (2).
18. See reference (6).
20. See reference (6).
21. See reference (6).
23. Daily Telegraph, 9th February 2012.
The NFLA submission considers the three main questions requested of groups and individuals that wish to make representations to the Trident Commission.

Q1. Should the UK remain a nuclear weapon state?

For the NFLA the simple answer is ‘No’ for a number of reasons.

a) Multilateral nuclear disarmament through the ‘2020 Vision’

The NFLA was established in November 1980, partially to call for a nuclear weapons free world. This was at a time of mounting international concern as the ‘Cold War’ heated up. It is the NFLA’s view that now, over twenty years since the end of the Cold War, the risks of a nuclear weapons attack remains higher than ever, and the concerns over increased nuclear weapons proliferation are becoming ever more pressing. The NFLA is concerned that states like Iran and North Korea are particularly wishing to possess nuclear weapons because they feel directly threatened by the Nuclear Weapons States, and they see possession of such weapons as an effective deterrent preventing an attack on them. By signalling that they apparently intend to retain their weapons indefinitely, states possessing nuclear weapons are providing an incentive for insecure states to develop their own nuclear weapons, with the attendant proliferation risks.

For the past 2 decades, the NFLA has forged a close relationship with the Mayors for Peace. The Mayors for Peace is the largest local government organisation in the world – its 5,092 members represent around a billion citizens in 151 countries. We consider that this is a mandate which indicates that the vast majority of ordinary citizens around the world are opposed to nuclear weapons and wish to see action to eliminate them. The NFLA joins with the Mayors for Peace in its urgent call that all existing nuclear weapons states, and in this case the UK, should move actively and quickly towards a reduction in, and eventual elimination of, nuclear weapons as part of a sensible and structured timetable. In the meantime, it supports the views of a number of like-minded groups like Abolition 2000, the International Campaign to Abolish Nuclear Weapons (ICAN) and Parliamentarians for Nuclear Non-Proliferation and Disarmament (PNND) (4), that the UK Government needs to take partial steps to reduce the weaponry of the UK’s ‘nuclear deterrent’ and foster the ‘good faith’ that is needed to engender the confidence for more effective disarmament steps to take place.

The NFLA works with the Mayors for Peace as it wants to see a global, hard-headed multilateral response for nuclear weapons abolition. The rapid expansion of Mayors for Peace in recent years shows how important local government across the world sees this issue, and it is a practical case-study of international multilateral co-operation that the Trident Commission is encouraged to consider.

The NFLA fully endorses the Mayors for Peace’s ‘Hiroshima-Nagasaki Protocol’ (5). This seeks to see the development and approval of a Nuclear Weapons Convention at the Nuclear Non-Proliferation (NPT) Treaty Conference in 2015 and full-scale multilateral negotiation for complete abolition of nuclear weapons by 2020 – the 75th anniversary of the first atomic bombings. These deadlines were set at the 2003 Mayors for Peace Executive Conference, held in Manchester, and were realistic targets at the time. However, foot-dragging since then by the Nuclear Weapon States has meant that the likelihood of the abolition of nuclear weapons by 2020 has significantly reduced, but this does not mean that the demand for the governments to negotiate a Nuclear Weapons Convention has become invalid.

We attach a copy of the updated Hiroshima-Nagasaki Protocol as Annex 1 of this submission. As part of this process, the NFLA also encourages the UK Government to show global leadership and encourage a Special Disarmament Conference – Hiroshima has offered to be the venue for this – and also to continue to encourage its allies in the Middle East to support the UN Secretary General’s programme to organise a conference on the development of a Middle East Nuclear Weapons Free Zone in 2012.
The NFLA believe the Protocol and the establishment of such conferences provide effective forums to assist discussion over international nuclear weapons disarmament and it urges the Trident Commission to invite members of the Mayors for Peace (with assistance from the NFLA) to discuss this initiative in greater detail.

The NFLA has been fully involved in lobbying the UK and other Nuclear Weapon States (NWS) for many years to seek reductions and the eventual elimination of all nuclear weapons. It met with the UK Government Counter-Proliferation Minister Ivan Lewis and officials prior to the 2010 NPT Review Conference and is keen to meet with Ministers and officials again as the NPT Preparatory Conference process begins again in Vienna in May 2012. It has also initiated a national tour of a photographic exhibition on the extensive damage and the physical and health effects of the Hiroshima and Nagasaki atomic bombings – over 20,000 people have now viewed this exhibition in the UK (6). Thousands more have seen this exhibition around the world. The aim of the A-bomb exhibition is to educate the public on the devastating effects of nuclear weapons and the pressing need for multilateral disarmament discussions. It believes the UK Government should encourage similar educational initiatives.

b) An ‘independent deterrent’, other threats and financial costs

The NFLA remains puzzled as to what the UK’s ‘independent nuclear deterrent’ actually deters the UK from. It has not stopped widespread terrorist attacks killing many people on UK soil, whether due to the earlier campaigns of the IRA or recent ‘Al Qaeda’ attacks and near misses across our major cities.

In the NFLA’s view, other much more pressing threats to the UK include the growing time-bomb of climate change, the worrying developments around concerted cyber-attacks and the continuing concerns over an international flu pandemic (7). There is no way that the possession of nuclear weapons protects us from any of these threats, and yet the UK Government still plans to spend billions on them.

Furthermore, if one talks about terrorism, the prospect of terrorist organisations getting their hands on small amounts of the raw nuclear materials to develop a crude ‘dirty bomb’ type of device is seen by the UK Government as a major threat to our national security, according to its published risk assessment (8). A conventional nuclear deterrent located on Trident submarines would not prevent such an attack in a UK town or city centre.

The financial crisis in the UK economy and the major costs of a Trident replacement should also be a key factor in why the UK should look to end its role as a Nuclear Weapon State. The UK Government has stated that the capital costs of a Trident replacement programme will cost a minimum of £25 billion. Other groups, notably Greenpeace, have suggested this is a major under-estimation and the whole life costs could reach as much as £97 billion (9). The Ministry of Defence is also going through the largest series of cuts in its history, where our conventional forces are being trimmed back wherever practical to do so.

Whatever figure is eventually decided upon for a Trident ‘Main gate’ decision, can it be economically justified to be spending so much on a deterrent which even senior military figures like Sir Hugh Beach have said is a waste of military resources? (10) In the Chancellor’s budget statement of the 29th November the scale of the financial crisis on public spending has become even more alarming. As a local authority organisation which has seen its members have to make the most savage cuts to core services in a generation, the NFLA has to pose the question of what a figure of £25 billion - £97 billion could be better used for in these difficult times.

The NFLA would like to encourage the Trident Commission to consider the research recently published by Malcolm Chalmers for the Royal United Services Institute (11). Chalmers noted that the MOD have currently budgeted for a further 8% cut in its budget to meet the targets set down on it for the current financial year and to avoid an impending ‘budget crisis’. However, Chalmers suggests further problems may occur to the MOD budget if the costs of large-scale military spending on projects like the Trident replacement programme, the ‘Joint Strike Fighter’ aircraft and the Navy’s Type 26 frigate project rise more than is anticipated.

Chalmers notes: “The largest, and politically most difficult, procurement programme over the next two decades will be the construction of a successor to the Trident nuclear deterrent submarines. The
MoD is due to spend £7 billion over the decade to 2020 on the initial concept, design and development phases of this project, equivalent to around 11 per cent of the new equipment budget over the decade from 2011/12 to 2020/21*.

According to Chalmers, spending on Trident replacement is due to peak in 2021/2 or 2022/3, when it will consume 30% of the MOD’s budget, a figure likely to be maintained until deployment of new submarines in, or around, 2028. The Chalmers report argues that, unless defence spending is significantly increased, other military projects will have to fall back sharply to cope with the financial demands of Trident replacement. This may, for example, require a reduction in the number of Type 26 conventional warships if such spending models are adopted. With the continuing stress on the UK military in Afghanistan and other theatres of conflict, the NFLA urges a reconsideration of the Trident replacement programme in reference to the dramatic cuts to the MOD’s budget.

c) **The damage to the planet of even a limited nuclear weapons attack**

Considerable recent research has been undertaken on the effects on the planet in the event of a limited nuclear weapons attack. It was presented to the NFLA and to the Mayors for Peace Executive Board at its recent meeting in Granollers by the Mayors for Peace Executive Director, Aaron Tovish (12).

The research puts forward the concept that a limited nuclear weapons attack it would not just have wide scale physical and environmental damage, but it would also lead to catastrophic wider damage on world food production, escalate the negative effects of climate change and affect the state that used the weapons almost as much as the state it had attacked. This shows up the fundamental weakness of the theory of deterrence in a post-Cold War world. The NFLA attaches this research as Appendix 2 of this submission. The NFLA encourages the Trident Commission to consider carefully the arguments that have been made in this technical area of the debate over the possession and use of nuclear weapons.

d) **The morality of possessing nuclear weapons**

In reading some of the published submissions to the Trident Commission the NFLA has been aware that those who wish the UK to remain a Nuclear Weapon State do so out of the ‘realpolitik’ that it is better that we have them than not in an uncertain world. Despite all the arguments that NFLA and other organisations have made above, it is above all the view of the NFLA that possession of nuclear weapons is immoral and unethical and breaks with the judgement of the International Court of Justice (ICJ) that use of nuclear weapons would almost certainly be illegal under international law (13). If the use of nuclear weapons is outlawed by international law, then it follows that the threat of using them is also illegal, and as a result the UK should seek to make the moves to being a nuclear weapons free state.

The NFLA also fully supports the Mayor’s for Peace’s ‘Good Faith Challenge’. (13) This seeks to assert the ICJ’s advisory opinion that Article VI of the Nuclear Non-Proliferation Treaty (NPT) places an obligation on all state parties to achieving nuclear weapons disarmament by adopting negotiations on the principle of ‘good faith’. It is the view of the NFLA that developing a new series of Trident-ready submarines and modernising the UK’s nuclear weapons stockpile goes against this principle. The NFLA also support the recent opinion of Judge Mohammed Bedjaoui, who was President of the ICJ from 1994 – 1997, that Trident renewal would be a material breach of NPT obligations, as has been outlined in the appendix of the submission to the Trident Commission by the Baptist Union, the Methodist Church, the Society of Friends and the United Reformed Church (14).

Q2. **If it should, is Trident renewal the only or best option that the UK Government can and should pursue?**

As outlined above, the NFLA does not believe the UK should remain as a nuclear weapon state but rather develop an international nuclear weapons convention and move towards eventual and complete nuclear weapons disarmament.

All other potential ‘alternatives’ to Trident renewal fall by the same hurdle of international law and the ultimate aim of the NPT.
However, the NFLA would very much welcome moves by the UK Government to take Trident off a ‘Continuous At Sea Deterrence’ and reduce the number of Trident submarines from 4 to 3. This would be seen positively in a national and international context as part of a move towards eventual, complete nuclear weapons disarmament (15).

Considering ways to reduce the yield of a nuclear warhead or other alternatives does not again move away from the hurdle of international law.

Q3. **What more can and should the UK Government do to more effectively promote global nuclear disarmament, non-proliferation and nuclear security?**

The NFLA have noted that in recent years there has been a hugely welcome rise in civil society efforts to promote the aim of global nuclear disarmament, non-proliferation and nuclear security. This can be seen by the rapid expansion of the Mayors for Peace and PNND, the positive work of ICAN, the International Physicians for the Prevention of Nuclear War (IPPNW) and the International Association of Lawyers Against Nuclear Arms (IALANA); and the recent ground-breaking decision of the governing body of the International Red Cross and Red Crescent to work towards a legally binding agreement to ensure nuclear weapons are never used again and are ultimately eliminated (16).

These civil society groups fully support the initiative of 140 states who advocate the development of a Nuclear Weapons Convention that will provide an international, legally binding agreement to ban and eliminate nuclear weapons (17). The NFLA believe the UK should take a more pro-active role in this debate. It should not only state clearly that it would support the eventual introduction of a Nuclear Weapons Convention, and would not block or attempt to delay the commencement of negotiations on such a treaty, it should also encourage the ‘P5’ states (France, USA, Russia and China) and non-singatories to the NPT like Israel, India and Pakistan to engage with the vast majority of the United Nations and civil society groups on this issue. The NFLA also believes the time to act is now, with real concerns that the reluctance of the P5 and other states to engage in this debate may lead to an increase in nuclear weapons proliferation and a much more unstable world.

The NFLA are disappointed with the development of the UK-French Defence and Security Treaty which commits both states to co-operation on nuclear weapons research through ‘Project Teutates’ for up to the next 50 years. To the NFLA this goes very much against the ‘good faith’ principle and indeed it could be reasonably argued is counter to the aims and objectives of the NPT. The UK Government should make it clear that, if international circumstances change and the disarmament climate improves, it would be willing to review its commitment to a 50 year lifespan for the Treaty.

Conversely, the NFLA welcomes the co-operation between the UK and Norway on improving the verification regime for nuclear weapons reduction and encourages this co-operation to prosper. The UK Government has undertaken some good disarmament initiatives in recent years, but these have to be judged against the strong desire to replace the Trident weapons programme and the lack of activity to develop a Nuclear Weapons Convention. Given the UK’s leadership role previously in developing international convention on landmines and on chemical and biological weapons, the NFLA strongly encourages the UK Government to lead the P5 much more swiftly to engage on nuclear weapons disarmament.

Finally, the NFLA notes the major on-going policy debate in Scotland, where Trident submarines are stationed. Opinion polls show higher public support for nuclear weapons disarmament than elsewhere in the UK. A growing coalition including the Scottish Government, the Scottish churches, the Scottish Trades Union Congress and civil society groups are moving more closely together on this issue (18), and there appears a clear possibility that the presence of Trident submarines could be an issue in a future debate on Scottish independence. A recent speech by the First Minister of Scotland, Alex Salmond, highlighted how this issue could be brought into such a debate, when he said (19):

> “Fiscal responsibility, financial freedom, real economic powers is a legitimate proposal. It could allow control of our own resources, competitive business tax and fair personal taxation. All good, all necessary, but not good enough. Trident nuclear missiles would still be on the Clyde, we could still be forced to spill blood in illegal wars, such as Iraq, and we would still be excluded from the councils of Europe and the world.”
The NFLA encourages the UK Government and the Trident Commission to fully engage with the developing debate in Scotland on nuclear weapons.

If the Commission would like members of the NFLA to attend a future hearing, or discuss the possibility of bringing international officers or prominent leading Mayors from the Mayors for Peace to a subsequent hearing, then please contact the NFLA Secretary.

References:

(1) The terms of reference and all associated work of the Nuclear Free Local Authorities can be found on its website – http://www.nuclearpolicy.info.
(2) See the Mayors for Peace website – http://mayorsforpeace.org.
(4) At the Mayors for Peace Executive Conference meeting in Granollers, Spain on the 8th – 10th November 2011 it was agreed to strengthen partnerships with like-minded civil society groups.
(5) The Protocol is attached as Appendix 1.
(6) The Hiroshima-Nagasaki A-bomb exhibition was formally opened on November 4th, 2010 in Manchester. It has now been exhibited in Dundee, Newry, Dundalk, Aberdeen and the Shetland Islands. Plans are in place for it to be exhibited in the Scottish Parliament, Edinburgh, Rotherham, Glasgow, Leeds, Hull, Oxford and London in 2012.
(8) ibid.
(12) Aaron Tovish’s paper is on the Mayors for Peace 2020 Vision Campaign website.
(14) See Mayors for Peace website.
(15) Submission by the Baptist Union, Methodist Church, Society of Friends & United Reformed Church to the Trident Commission. http://www.basicint.org/tridentcommission/evidencereceived
(16) See ICAN submission to the Trident Commission; ibid web reference (14).
(18) See ICAN submission, reference (15).
(20) Alex Salmond speech to the SNP Conference, 22nd October 2011, BBC News Online - http://www.bbc.co.uk/news/uk-scotland-scotland-politics-15411188
Annex 1
Updated Hiroshima-Nagasaki Protocol – Mayors for Peace’s ‘2020 Vision’

Protocol complementary to the Treaty on the Non-Proliferation of Nuclear Weapons for achieving a nuclear-weapon-free world by the year 2020

Desiring to establish an over-arching means of addressing nuclear disarmament in all its aspects so as to facilitate the fulfillment by States Parties of their obligations under Article VI of the Treaty on the Non-Proliferation of Nuclear Weapons, and with a view to all states fulfilling the nuclear disarmament obligation found by the International Court of Justice in their 1996 advisory opinion on the legality of the use or threat of nuclear weapons;

Considering that continued exploitation of the discriminatory nature of the Treaty, wherein nuclear-weapon States Parties are exempted from the prohibition on the acquisition of nuclear weapons, is incompatible with the pursuit in good faith of nuclear disarmament in all its aspects;
Considering further that full equality under international law must be re-established by the elimination of all nuclear arsenals as agreed in the 1995 Extension Conference decision on “Principles and Objectives”;

Article I

1. The nuclear-weapon States Parties to this Protocol shall cease forthwith:
   (a) all activities related to the acquisition of nuclear weapon which non-nuclear-weapon States Parties are prohibited from pursuing under the Treaty on the Non-Proliferation of Nuclear Weapons;
   (b) all activities which incorporate nuclear weapons into their military doctrines and practices; and shall place all nuclear weapons and weapon-usable fissile materials in safe and secure storage at the earliest possible date.

2. All other States Parties to this Protocol possessing weapons-usable fissile material shall take those steps required of the nuclear-weapon States in paragraph 1 which apply to their circumstances.

Article II

1. The States Parties to this Protocol shall pursue in good faith negotiations on achieving nuclear disarmament in all its aspects under the following two main sections:

   Section One negotiations will standardize and legally codify the measures taken under Article I, paragraph 1, (a) and (b).

   Section Two negotiations will address:
   (c) the elimination of all nuclear weapons and related deployment systems, including delivery vehicles, launch platforms, and command and control systems.
   (d) the elimination of all infrastructure associated with the acquisition of nuclear-weapon system, including production and testing facilities, and of all weapon-usable fissile material stocks.

2. The negotiations called for in paragraph 1 shall have as their objective a Nuclear Weapons Convention or a comparable Framework Agreement. Negotiations shall begin forthwith and be pursued without interruption by all States Parties until this objective is achieved. A Secretariat for the negotiations shall be established that remains in operation until negotiations are concluded.

3. Every good faith effort shall be made to ensure that all measures related to Section One are agreed and implemented before or by 2015 and that all measures related to Section Two are agreed and implemented before or by 2020.

4. All measures contained or foreseen in the Nuclear Weapons Convention or Framework Agreement shall be subject to strict and effective international control and shall provide for
international institutions capable of ensuring that the nuclear-weapon free world which is achieved can be maintained indefinitely.

Article III

Nothing in this Protocol shall be interpreted as diminishing in anyway the non-proliferation obligations of any State Party to the Treaty on the Non-Proliferation of Nuclear Weapons; including each State's obligation to cooperate in the establishment and operation of the international institutions of Article II, paragraph 4.
What are the economic and industrial implications resulting from options other than a like for like replacement of Trident?

For Barrow in Furness a like for like replacement offers an apparent short term economic stability, but in effect this serves to obscure the underlying vulnerability and dependency of the Furness area on the next defence large scale contract. The short term nature of this apparent stability also militates against the industrial design and development of alternative products for the reasons given below (in Question 51).

BAE (formerly Vickers Shipbuilding and Engineering Ltd VSEL) was once a highly diverse company, with a broad range of profitable engineering interests, over the last 20 years it has become almost entirely synonymous with shipbuilding, and particularly, with the building of the Trident submarines. This level of defence dependence came about following a process of active marginalisation of non-defence work which created a monoculture within the company and in which the perceived status of civil engineering declined in relation to ‘superior’ defence requirements. The identification of the company's interests solely with that of the 'Trident' submarine programme required a period in which employment was driven up to unsustainable levels, followed by reductions, and much reduced levels of skill mix in what was a previously diverse workforce.

Options other than a like for like replacement may therefore open up the possibility of recovery of skill-mix and consequent capability for tendering for a range of civil and non-nuclear defence systems (both in submersibles, shipbuilding and engineering).

What are the economic and industrial considerations in taking forward an active policy of diversification for both Barrow and its supply chain?

What can be learned from previous initiatives to diversify and/or regenerate the Furness Peninsula?

What often gets forgotten in relation to the Barrow case is that industrially it was unique in the UK for its range of enterprises, products and skills. This is because of a strong history both in engineering and shipbuilding, prompted largely by both access to materials and minerals but also its geographical location. It was never 'just a shipyard'. While shipbuilding at Barrow was arguably later 'strengthened' by the plant becoming the prime contractor for Britain's nuclear submarine fleet, the adjacent engineering works had no such support, having to compete in the often more demanding commercial market.

As the Vanguard Trident submarine programme advanced, alternative technological and commercial activities were discouraged, and potential markets dismissed (Schofield 1987; Mort 2003). Involvement in defence contracting imposed high overheads on other parts of the business, thus reducing the ability to compete in commercial markets. A management culture within the company (Vickers, then VSEL, now BAE) of dependence on MoD contracts fostered a lack of interest in commercial products.

In the early 1970s the company abandoned some of its biggest commercial enterprises. These included commercial pumping systems and power generation plant manufacture and the world leading cement making plant and machinery based at Barrow. Other important operations run from Barrow had been the manufacture of circulating water pumps for irrigation and sewage, plus design and manufacture of mining engineering equipment for the world market. Power generation plant was also big business: whole units of condensers and feed heaters were made and installed in new 30 to 120 megawatt power stations all over the UK and also in South Africa, with each power station unit being purpose-designed in Barrow. The Constant Speed Generator Drive (CSGD) was a Vickers/Compact Orbital Gears innovation, a fuel saving device which provided ships at sea with reliable secondary electricity generation. This development was at its peak during negotiations for the first Trident contract (Mort 2003).
Defence quality inspection activity mushroomed at the expense of design origination, creating different kinds of overheads. Defence contracting requires companies to satisfy the military specifications that stem from the weapons procurement process.

This process of focusing on the 'core business' - defence work - reached its peak with the Trident programme. Trident was portrayed both locally and nationally as the only project serving the interests of the Barrow community. The degree to which the company management actively sought to marginalise other (civil) work can be seen in their response to a campaign for alternative products mounted by a collaborative group of shipyard trade unionists. Concerned about increasing defence dependence, the Barrow Alternative Employment Committee investigated alternative, but relevant marine technologies and markets for the shipyard, seeking to influence the content of production towards products which it believed would both sustain employment and be 'socially useful'. These included work on renewable energies - ocean thermal energy, tidal power, wind and wave power. The subsequent report *Oceans of Work* (Schofield 1986), also highlighted undersea mineral extraction and civilian submersibles for offshore work and exploration. A more varied order book based on developing existing engineering skills and shipyard resources was seen as the key to sustainable employment.

As predicted, mass redundancies were imposed as the Vanguard production programme ran down, and for the first time the company publicly espoused a policy of diversification. This was reflected in statements about a policy of limited diversification and a hope that 25 per cent of the company's turnover would come from commercial products by 1995.

These are not just matters of historical interest. Post-Cold War cuts in defence budgets have given way to defence spending reviews which put great pressure on defence manufacturers. While an obvious response might seem to be diversification of the companies into other markets, in practice most have instead chosen consolidation, either through mergers with other defence manufacturers or through some degree of downsizing.

It is necessary for Furness to have not just technological expertise, but also organisational competencies to enable local companies to exploit both civil and military markets at the same time. Defence manufacturing typically involves small quantities of highly complex units which are custom built for a particular application. Although some improvements in manufacturing processes are possible, production typically remains 'hand-crafted' for system and subsystem assembly, while specialist components must be sourced in small numbers at premium prices.

There are, then, good reasons why firms either fail, or never attempt, diversification, and why already diversified firms may be tempted to relinquish one type of market or at least to keep their defence and civil operations well separated. However, not all civil manufacturing involves mass-market, 'commodity' products for which price (and hence an efficient production process) is all-important and many of Barrow’s civil products have also been made-to-order and customised to a particular buyer’s requirements (Mort & Spinardi 2004)

The fact is, however, that VSEL/BAE chose to focus increasingly on defence work. It did so because its management perceived, albeit perhaps influenced by short term concerns, that civil markets offered lower rewards relative to the risk involved. This tendency to prefer the stability of long-term procurement contracts is, of course, dangerous if ‘follow-on’ contracts fail to materialise. It also means missed opportunities in civil markets.

**What is the scale and type of investment and commitment that is required by Government – and others – to sustain and develop jobs and skills in Barrow?**

**What other actions might be taken – by wider partners and civil society – in response to the need for diversification?**

The findings of *Oceans of Work* are in urgent need of updating. Rather than being seen as a fringe activity, this would be a fruitful and worthwhile initiative if backed by Government, local government, local business groups and the trade unions. Such a 'Coalition for Sustainable Employment', if it had wide backing, would be taken more seriously than its forerunner and would have a better chance of success.
References


A Dependence on Defence

The TUC represents some 53 trade unions and around 6 million trade union members. It is the largest voluntary membership organisation in the UK and is the voice of Britain at work. The TUC welcomes the opportunity to submit views to the Nuclear Education Trust survey and research into the Trident Alternatives Review and the future of Barrow.

TUC policy on this issue was clearly set out in a General Council Statement in 2006. The statement recognises that consideration needs to be given to balancing the strong commitment to peace and disarmament, significant public expenditure and the impact of defence expenditure on particular economic geographies combined with the tough challenge to progress diversification strategies (see appendix i, attached).

Introduction

For generations the shipbuilding and engineering facility in Barrow has been the single most important employer in the Furness peninsula. In an area economically and geographically remote, Vickers Armstrong, VSEL and more recently BAE Systems has been the source of high volume, good quality, reasonably well-paid employment for generations. Despite significant reductions in employment numbers in the last twenty years, BAE remains the key ‘anchor’ employer, combined with a large footprint supply chain, in an area with no apparent significant local alternative.

It is in this well-established context that any debates about future submarine procurement even whispered in the corridors of Whitehall reverberate loudly throughout the town of Barrow and the wider economic geography. The current review of alternatives to a full-scale Trident replacement, part of outcome of the Strategic Defence Review and Coalition Government agreement, is the latest questioning of the value of large scale public sector investment upon which the Barrow economy has depended for some time. At a cost of roughly £1.6 billion per year, in times of public spending reductions these debates resurface in heightened fashion.

In addition debates about potential security concerns related to the proposed merger between BAE and EADS, now dropped, and the possibility of an independent Scotland insisting on the removal of Trident submarines from the Faslane submarine base also contribute further peripheral, yet relevant considerations on the future of the UK’s sea-based nuclear deterrent.

Throughout the 1980s local MP for the Conservative Party, Cecil Franks, repeated at every election the question “What will the lads do on Monday morning?" goading the Labour Party’s closer relations with organisations like CND. In 1992 Labour reclaimed the seat with John Hutton not only full square behind the Trident programme, but also concerned about employment not just on the Monday after the election, but on a Monday morning next year, the year after and in ten years’ time – a theme carried on by current Barrow and Furness MP, John Woodcock.

Recent political developments, which has seen the Liberal Democrats in coalition with the Conservative Party, has added a further dynamic to the future of the UK’s trident, submarine-based deterrent, with Woodcock’s neighbouring MP, Tim Farron, President of the Liberal Democrats, questioning the validity of the full replacement.

This paper does not seek to take a line on the decision regarding the current discussions around the replacement for Trident. This decision is not due to be taken until 2016, beyond the life of the current Coalition Government, and clearly these matters are best considered by those with a defence expertise. This submission will outline the current scale of dependence upon a single source of economic investment, the MoD, in a single product work-site, submarine manufacture, in a town and wider area with little significant alternative economic opportunity, a discussion couched in a period of macro-economic despair and fiscal austerity.

Whatever the decision on the Trident replacement, the considerations and recommendations in this paper would support improved economic development outcomes for Barrow and the wider Furness
area as part of and, in particular, the need for a Defence Industrial Strategy. The current levels of unemployment and high rates of economic inactivity merit consideration of interventions to improve participation and economic progress now, potentially alleviating some of the dependence on future defence spending to a single purpose contractor, providing an opportunity to develop options for the current adult working population of the area, for potential transferability and sustainability of skills and to provide a source of ambition and aspiration for future generations of workers.

This submission will conclude, however, that there is a strong economic case for ensuring the longevity of the submarine manufacture facility in Barrow, that it hosts a rich source of skills, production and technician, and provides a source of technological design and development that is necessary for the future sustainability of this aspect of the UK’s defence arm, and poses questions as to how this high value capacity can be exploited in other areas of the economy.

What are the economic and industrial implications resulting from options other than a like for like replacement of Trident?

Submarine based employment and labour market conditions

BAE Systems in Barrow currently employs a little over 5000 personnel, it is, and has been for a considerable period of time, the single largest and most important private sector employer in the area. Employment in BAE Systems is the key driver of labour market conditions in the Furness area, Barrow-in-Furness, in particular, is one of the most defence-dependent and geographically isolated economies in the UK. The BAE Systems wage bill in 2006 was £77m.

Direct employment in the prime contractor, BAE Systems, is a key economic characteristic in considering the dependency of MoD procurement. In addition, typically, 50 per cent of the value of a nuclear submarine contract is subcontracted to a wide and extensive supply chain, however, just 10 companies account for 80 per cent of that sub-contract value. This extrapolates to an estimate of at least a further 0.83 jobs in the supply chain for every worker in BAE Systems, making a total of over 9,000 jobs in employment directly dependent upon nuclear submarine contracting.

Estimates predict an additional 1000 workers required by BAE Systems should the Trident replacement go ahead in full, with the commensurate 830 in the supply chain. This equates the value to the local economy of the Trident replacement contract at nearer 11,000 jobs. This significantly high dependence on defence procurement for the industrial base in the town and the area would point to any shocks in defence spending, in particular submarine manufacturing, having a major impact, emphasising the need for these debates to be part of a wider discussion around a defence industrial strategy.

Manufacturing accounts for the greatest share of employment in Barrow, around one quarter of all the manufacturing jobs in the County. Unemployment is relatively high, at around 4.5 per cent, with male unemployment running considerably higher than female unemployment. Barrow has also for some considerable time been a location with high levels of economic inactivity.

Barrow has the highest ratio of JSA claimants to vacancies in the County and one of the highest in the UK at over 15:1.

Skill levels of the population are relatively encouraging with over 40 per cent of the economically active population qualified to Level 4 plus, however, around 17 per cent are not qualified to Level 2.

BAE Systems provides the basis for much of the positive characteristics of Barrow’s economic base, including future qualified workers. The shipyard will provide 136 apprenticeships, including 14 advanced apprenticeships, plus 40 graduate roles this year. No other employer in the Furness area provides this scale of opportunity for future workers. This future workforce development continuing on this scale is entirely dependent upon nuclear submarine contracts, a sole customer, the MoD.

What are the economic and industrial considerations in taking forward an active policy of diversification for both Barrow and its supply chain?

The Diversification Challenge
Motivated by a range of considerations, political, environmental, economic and fiscal, defence diversification is a recurring theme, locally, nationally and internationally. BAE’s recent announcement regarding a potential tie up with EADS is largely regarded as a sensible business proposition given globally shrinking defence budgets. Local or national comparisons as examples of effective defence diversification initiatives do not easily transfer to the Barrow submarine yard. BAE Systems Barrow is a single product, single customer site with very little connection to any commercial markets. There is a general lack of evidence or support for an assumption or assertion that diversification is currently a feasible option for the yard.

Access to commercialisation, or product linkages to a commercial sector for defence suppliers, is a key determinant. Even where these characteristics do exist, there is little experience of major defence manufacturers engaging in meaningful diversification programmes. A shrinking defence budget may force companies down this route, as per the BAE corporate development with EADS, but there is little evidence of much traction in major companies.

These factors favouring diversification are not prevalent in Barrow; submarine manufacture is what BAE Systems in Barrow does. Although this is an incredibly complex and intricate process, with a wide range of activities and functions within it, there is no range of products or services that easily transpose to the commercial sector. This facility has purposely evolved to manufacture nuclear submarines, it does that well and with continual improvements in productivity, design and efficiency over the life cycle of nuclear submarines – there is no apparent route to diversify into.

While much of the supply chain will not have BAE Systems as its sole customer, such is the scale of supply chain dependence upon the submarine yard and such is the specificity of product, much of the argument about the lack of feasibility of diversification of the yard also applies to much of the supply chain. Although many ancillary suppliers who have a broader customer base could identify potential for diversification in developing their market share with those other customers, such is the dependence on BAE for much of the supply chain the reduction of revenue from the submarine yard would be extremely challenging.

What can be learnt from previous initiatives to diversify and / or regenerate the Furness peninsula?

Strengthening the Economy in Furness

The shipyard has for many years been the dominant economic driver in Barrow and Furness. Aside from public sector employment, particularly health and local government, there are no private sector operators that come close to the scale of BAE Systems, even after considerable decline in employment numbers in the last 20 years.

The presence of such a dominant economic actor is also a potential barrier to inward investment opportunities due to issues of labour market competition and also bench-marking for wage levels. BAE Systems is a market-maker in the area. Nonetheless, BAE pay relatively decent salaries, not higher than average for the manufacturing sector. Also, Barrow has a high level of JSA claimant to vacancies ratio with high levels of male unemployment in particular. The presence of the yard should certainly not be regarded as a barrier to strengthening the broader economy in the area.

Efforts have been made to capitalise on sectorial development opportunities in growth areas, such as offshore wind and some limited progress has been made. Offshore gas extraction and pharmaceuticals also offers some room for at least medium term economic alternatives to submarine manufacture. However, as significant as these industries are, especially given recent additional investment in GlaxoSmithKline, they remain responsible for a relatively small portion of economic activity in the area.

Even during the period which saw major fall in employment numbers in BAE Systems Barrow, from over 14,000 to fewer than 5,000, there was no significant inward investment to take up this slack in the labour market, no examples of growing employment in alternatives to the submarine manufacture base and its supply chain.

What is the scale and type of investment and commitment that is required by Government and others to sustain and develop jobs and skills in Barrow?
Planning for a broader, mixed economy in Barrow

As previously stated submarine construction in Barrow provides a significant level of employment, directly and indirectly, and income for large numbers of workers in Barrow and the wider area. Following through on the replacement for Trident on full scale, 4 boat programme, would also create an additional 1,000 jobs in the yard and a similar amount in the supply chain.

Maintaining this level of employment and increasing at the scale predicted will be critical to Barrow and Furness’ economy for the next twenty to thirty years. However, even if this is the case the area will still suffer from relatively high levels of unemployment and economic inactivity if no other areas of the economy enjoy growth too, especially if reductions in public sector employment continue.

Like many areas of the UK, Barrow and the wider Furness peninsula faces particular challenges. Like other areas it is experiencing a growth in youth unemployment, long-term unemployment and rife economic inactivity. Many of these challenges can only be addressed by specific, national level interventions to facilitate opportunities for young workers, a Future Jobs Fund mark II, specific interventions to support economically excluded individuals and, of course, a much more effective industrial policy than that overseen by the current regime.

Expanding the reach of the existing supply chain is perhaps the most likely route to increasing sustainable economic activity in Barrow, but given the nature of the product relationships, directly and dependently aligned to submarine construction, it will prove necessary to enable those supply chain industries to not only access alternative markets, but also some development resource to ensure skill and product sets are more transferable.

Allied to this is additional transport costs associated with the geographic location of Furness. Barrow is not well served by transport links, major improvements are necessary to the transport infrastructure around the town, a common challenge for most of west and south Cumbria.

It is unlikely in the current climate to see major inward investment in Barrow or Furness. It is difficult to see how not going ahead with the Trident replacement programme could be anything but extremely challenging, even catastrophic for the local economy and wider society, even if much of the ‘saved’ resource were redirected to stimulating alternative employment.

What other actions might be taken by wider partners and civil society in response to the need for diversification?

No short term fix

If the Trident replacement programme does not go ahead or proceeds with a reduced number of vessels there will be short and long-term negative economic consequences for Barrow and the wider area. At this particular time there is little alternative employment on offer in Barrow, JSA claimants to vacancies are currently 15:1, and there is little optimism that there will be a sudden surge that might create those opportunities.

Should the Trident replacement go ahead it will provide a relatively sound economic base for the town for the next thirty years.

Strengthening the economic base of Barrow must be considered over at least that period. BAE Systems have themselves committed to support broadening the economic base and diversifying the employment opportunities in the area, investing £1m in economic regeneration activities via Furness Enterprise. To date there is little evidence that could prove to be a source of optimism about the successes of efforts to broaden the economic base in Barrow or the wider Furness peninsula.

Inward investment programmes of the scale needed to secure the level of economic activity necessary to respond to Barrow’s current labour market conditions or to mitigate against the impact of severe reductions in BAE Systems employment are not unheard of. A little over 25 years ago Nissan invested in Sunderland to a scale which has provided thousands of jobs directly and through supply chains, helping to sustain a community previously heavily dependent upon shipbuilding and engineering. More recently Hitachi has committed, on the back of a major government procurement
programme, to establish a train manufacturing site in Newton Aycliffe, County Durham, establishing 900 direct jobs, but affecting a supply chain three times that number.

A number of factors affected these investment decisions, market intelligence being a major consideration, as is availability of skilled labour and transport links, including airports. Should there be significant sectoral inward investment opportunities Barrow has certainly a track record in delivering high quality skilled labour, transport links remain a major barrier not easily overcome.

Aside from these very real experiences and practical problems, it is difficult to envisage a more difficult time to be identifying opportunities for inward investment of a scale that would mitigate against the loss of such a high volume of relatively well-paid, skilled jobs. Offshore wind and renewable energy may provide significant opportunities, to date that has proved elusive and Barrow and Furness faces tough competition from many other parts of the UK and elsewhere.

Conclusion
Retaining Skills and Talent and planning for longer term economic stability

The economy of Barrow and the wider Furness area has developed, deliberately and in partnership with successive governments, as a submarine manufacturing facility town. It is the most significant source of employment in the town and it is the sole supplier of submarines to the MoD, the economy of the area is heavily dependent upon on-going nuclear submarine manufacture contracts from the MoD.

BAE Systems in Barrow is the sole supplier of submarines to the MoD, its sole customer. This relationship is more than symbiotic, it is essentially mutually dependent. Staff and management at the yard have sought not to exploit this ‘sole supplier’ monopoly, dynamics to improve efficiencies and productivity have, in those circumstances, essentially been internally driven, there have been no ‘market forces’ or competition issues shaping production improvements and technology development has been entirely due to the demand side developments, reflecting the environment in which the submarines operate, including recent developments of the nuclear propulsion units at Rolls Royce which could, potentially, see the requirement for constant ‘at sea’ presence being fulfilled by three boats instead of the current four vessels.

Efficiencies have been secured within the Barrow facility. The workforce required to build a nuclear submarine in the accepted time frame has fallen from 8-12,000 personnel in the early 1990s to under 4000 by 2006. Furthermore, over the span of producing the first three Astute class submarines there was a 22 per cent reduction in working hours. Whilst it is difficult to make absolute comparisons, UK submarines appear to be some 40 per cent cheaper than their US equivalents.

This commitment to product efficiency has, to date, been reciprocated by continued investment in contracts to the yard, although the delay in-between Trident and Astute Class submarines had a negative impact on the workforce, the town and arguably on the preservation of technical capacity within the company.

The longevity and scale of dependency of the town’s economy on public sector (MoD) contracts has shaped not just recent and current economic and labour market profile in Barrow, but also informs the short and medium term labour force. One of the clear impacts that has had over generations been repeated is the lack of proliferation of other economic or employment opportunities for current or future workers. Relatively recent decline in job opportunities in BAE Systems is a contributory factor to the fact that Barrow has one of the fastest rates of population decline in the UK.
This induced dependency on public funding in the area’s economy infers a responsibility on the state to consider the role it can play in broadening the economic base now, to improve the town’s relatively poor employment and participation conditions, and also to develop a stronger economic outlook to provide a much stronger and more comprehensive safety net should the MoD, in either the medium or longer term, decline in the role it plays in strongly supporting the major private sector employer in the town.

Whether or not the Trident replacement goes ahead, politicians and economic actors locally and nationally face a tough challenge to broaden the economic base of Barrow and Furness. There is a case already, with the significant employment opportunities provided by BAE Systems, to regenerate key areas to help to tackle the high levels of particularly male unemployment and high rates of economic inactivity.

Diversification remains an elusive goal for the large majority of the defence sector, especially the prime contractor companies, the decline in overall defence spending has reignited these debates, the TUC would argue that these considerations need to be discussed in the context of a broader defence industrial strategy. In BAE Systems Barrow the challenge of diversification is accentuated by the nature of the product. There are no obvious routes for transferability of skills, technology and know-how from nuclear submarine manufacture. There is some potential in supply chain companies, but the large dependent relationship with the prime contractor makes this a far from straightforward opportunity.

It would be inaccurate and unfair to claim that there has been little effort to diversify the local economy; indeed BAE Systems itself has helped to resource these initiatives. There is little evidence of much success and certainly nothing on anything like the scale needed to plug the gap that job losses in BAE and its supply chain have experience already, let alone the dramatic impact of further job losses.

The inevitable conclusion is that there must be a long-term, sustained strategy for broadening and strengthening the economic base in Barrow and the wider economy. It would be much more painful to be seeking to do this in a period of decline for the submarine facility. With such significant public spending going into the economy via the defence budget, it is currently also very difficult to envisage further public investment in broadening the economic base. It is also unlikely that any horizon scanning will identify a major, big ticket, inward investor that could be persuaded to choose Barrow over other competition without significant public sector inducement.

The economy of the town and wider area is, for the foreseeable future, dependent upon the Trident successor programme. Uncertainties around this programme are not new, nor are efforts to diversify the local economy. There is certainly a strong economic benefit to Barrow of the successor programme going ahead and only difficult economic circumstance should it not. Whatever that decision, there is a commensurate argument that the economy of Barrow would benefit from having other economic strings to its bow.
Appendix i
TUC General Council Statement

The trade union movement has long campaigned for peace and disarmament, and in particular against weapons of mass destruction. We recognise that in today's international climate, the possession of nuclear weapons would either have no effect on, or increase, the threats of terrorism and nuclear brinkmanship that we face.

The General Council therefore renews its call, as set out in the 2003 Congress resolution on disarmament, for 'efforts to rid the world of weapons of mass destruction and [our call] on those with the biggest arsenals to initiate multilateral initiatives under the aegis of the United Nations to achieve substantial progress towards world disarmament.'

The General Council notes that the decision on a possible replacement for Trident will be taken within the next year. The General Council is concerned about the potential economic impact that the non-replacement of Trident would have on both the MOD civilian workforce and on manufacturing industry generally and specifically those working in the defence industry. We remind Congress that many of these people live and work in remote parts of Britain where there is little other alternate employment let alone skilled employment of this nature. Therefore we believe that the issue of diversification to protect the jobs of those engaged in work that could be affected by this decision needs to be fully explored, as does the alternative defence initiatives.

The General Council also recognises that many unions have not yet reached a view on this issue, and believes that there should be an opportunity for a proper consultation on the issues of jobs, defence and public expenditure within the trade union movement, pending the publication of a Green Paper, and that the General Council should initiate such a consultation without undue delay before a final Government position is reached.

The General Council is also concerned that the cost to public expenditure could be tens of billions of pounds, which could otherwise be invested in manufacturing, health, education, pensions and transport and this is another important factor which has to be considered in this debate.

The General Council therefore calls on the Government for a full, rational and open public and Parliamentary debate on the replacement of Trident before any final Government decisions are taken, including a Green Paper covering all the options for replacement, including non-replacement, a White Paper and a deciding vote in Parliament.

Adopted 13 September 2006
Appendix ii
Unite; ES2 Executive Council Statement: Peace and Disarmament, 2012

The trade union movement has always been in the forefront of the struggle for peace and international disarmament. Unite is proud to stand in that tradition. Our vision is of a world where wealth and labour are devoted to exclusively peaceful purposes, and where war is superseded by the control of disputes through international law and the United Nations.

This progressive outlook is more relevant than ever when Britain faces an acute budget crisis and public spending cuts are high on the political agenda of the new Tory-Liberal coalition government. The moral and internationalist case for peace and disarmament is reinforced by economic necessities. It cannot be right to spend large sums on weapons of mass destruction when essential services are facing cuts.

This makes the question of diversifying British manufacturing industry away from its over-reliance on defence spending urgent. We recognise that many thousands of Unite members rely on the civil and naval nuclear programmes for their jobs and for retention and development of skill across many sectors. These include shipbuilding, aerospace, transport, mechanical and electrical design, project management and IT, as well as many more in the supporting supply chains. Furthermore the successful renaissance of the civil nuclear industry depends heavily on the retention and development of the skills of these Unite members.

We will therefore press the new government to ensure that Britain’s legitimate defence equipment needs are met from domestic producers and that proper forward planning of the defence budget is used to protect jobs and to promote the smooth transition of manufacturing to non-military production wherever possible.

The question of Britain’s nuclear weapons system is not about employment alone, however. It is first of all a moral issue, and then a strategic one concerning Britain’s place in the world and the international environment we wish to see. Such weapons would, if used, constitute a mortal threat to humanity’s survival; they are massively expensive; senior military figures have described them as ‘militarily useless’ and said that they should be scrapped; and our possession of them encourages other countries to seek a similar arsenal while undermining the efforts being made by President Obama to advance the cause of international nuclear disarmament.

As a signatory to the nuclear Non-Proliferation Treaty, Britain should therefore give a lead in discharging its obligations by not seeking a replacement for Trident and abandoning plans to spend an estimated £76 billion on a new generation of nuclear weapons. We need a policy that would see the jobs and skills of Unite members preserved, and until we receive firm commitments to this end we will continue to support our members and their employment.

Money saved by ending our nuclear weapons system could be used to sustain the process of defence diversification, vital to our manufacturing future, as well as freeing resources for investment in other socially-useful forms of public spending.
Trident Alternatives Review and the future of Barrow
Volume II

Dr Steven Schofield
LessNet (the local economic sufficiency and security network)

Written submission

1. What are the economic and industrial implications resulting from options other than a like for like replacement of Trident?

This is a difficult question because the existence of Barrow – or more accurately – BAE Systems, Barrow has to be seen in the context of a corrupt statist policy to pour billions of pounds of public money into the military and civil nuclear industries (Polaris to Trident, fast-breeder reactors, THORP, etc) while deliberately starving funding for alternative, renewable energy programmes that could have stimulated an indigenous manufacturing base generating far more employment, more evenly distributed across the North of England.

2. What are the economic and industrial considerations in taking forward an active policy of diversification both for Barrow and its supply chain?

As far as BAE is concerned, diversification simply means finding more state subsidies in the civil nuclear sector while retaining the Trident replacement and SSN programmes. The evidence on diversification, in any case, demonstrates that the highly specialised demands for military systems integration provided insurmountable industrial, technological and cultural barriers for a successful transition to civil manufacturing. It would be a further waste of public funding to support any such programme for BAE. The supply chain issue is more complex as it is difficult to identify the scale of dependency on military contracting at the subcontractor level but the evidence is that most companies already have a diversified product base.

3. What can be learned from previous initiatives to diversify and/or regenerate the Furness peninsula?

Nothing. The local authorities still see the area as some sort of nuclear Disneyland.

4. What is the scale and type of investment and commitment that is required by Government – and others - to sustain and develop jobs and skills in Barrow?

Barrow and BAE Systems have had a good run for their (public) money and the best option would be to close the shipyard down when Trident is cancelled. Some remedial, environmental clean-up, etc, would be required but the site could then be used for a range of other manufacturing and service work.

5. What other actions might be taken – by wider partners and civil society – in response to the need for diversification?

The Peace Movement has, perhaps understandably, spent an inordinate amount of time and attention on the employment issues for those working in the arms industries, in stark contrast to those experiencing far more severe forms of structural change in other sectors of the economy. The plain fact is that there are very few pockets of arms-dependent employment in the UK and the issues these localities face, should there be the cancellation of major arms projects, are no different to other areas that have had to deal with structural change. There should be no special criteria for public funding and assistance, other than the normal forms of retraining, industrial grant support to attract new industries, etc.

6. What are the lessons that can be learnt from comparable international programmes?

The best international comparisons would be with the support provided for US military base closures in Germany by the state authorities, as during the early to mid-1990s at the end of the Cold War. Far from proving the disaster predicted from the loss of ancillary employment, investment in new facilities and infrastructure on site provided a range of skilled manufacturing and service sector work. Local campaigns to save the shipyard are to be expected but it would be in the longer term interests of the people of Barrow to see it closed.
1. What are the economic and industrial implications resulting from options other than a like for like replacement of Trident?

- The answer to this question depends on what the other options are: clearly cost is a major factor here but a non-submarine option would have obvious implications. It would be a real challenge to achieve anything of equivalent scale.
- BAE Systems in Barrow have relatively little engagement with the University of Cumbria which is a shame – and is in contrast to their involvement at other plants with other universities (eg Broughton with UCLan) – but it means the impact on the University of closing would be slight. We have an excellent facility in Barrow, located in the new Furness College building, and would be keen to explore BAE’s needs and how we might contribute to meeting them.

2. What are the economic and industrial considerations in taking forward an active policy of diversification both for Barrow and its supply chain?

- The University would want to work with partners, including Furness College, to develop skills required for diversification. We have a capacity in energy and renewables and are already providing courses for the British Energy Coast Initiative.
- The Nuclear Decommissioning Authority (NDA) funds some university projects through the Energy Coast Campus project but BAE Systems seems rather remote. Major industrial interests in Cumbria are not deeply engaged with the development of Higher Education in the region. The academic support for nuclear engineering at Barrow and at Sellafield tends to come from Manchester University.
- There may be some benefits – Nestle closed a food production factory a while ago because it was within ten miles of Sellafield so there is some evidence that the association of the Lake District with all things nuclear does deter some investment.

3. What can be learnt from previous initiatives to diversify and/or regenerate the Furness peninsula

- Not sure anything has been successful – and that is borne out by the fact that Barrow is the most rapidly de-populating area of Britain
- There is a history of education facilities being built on the site of former industrial centres – Furness College was built on an Iron and Steel Works closed in the 60s or 70s
- There was an attempt, I believe, by Vickers to diversify into other undersea submersibles and renewables – but this now seems to be relatively low profile.

4. What is the scale and type of investment and commitment that is required by Government – and others - to sustain and develop jobs and skills in Barrow?

- There has been considerable investment nationally in renewables but Barrow seems not to have benefitted as much as it might. There is a support infrastructure for offshore wind, but limited construction activity, and there is the proposed development of the biomass power station. The Cumbria model all too often sees money spent within companies but rather little impact on the wider population
- Does Barrow still see its future as based on ship building- either civil or Defence? It has a proud tradition with for example the construction of the first 100,000 tonner, the Methane Princess, in 1960’s, and the Bulwark fit-out. Could it look to grow surface ship activity again?
- Perhaps a Scottish vote for independence would have a serious impact on the viability of the Trident project and give a real push to seeking alternatives.
- The Energy Coast Initiative has some arbitrary boundaries and for example there is no rational reason why the benefits of the nuclear programme should not be extended south to include Barrow (and in the north to Carlisle.) This would have considerable benefits all round.
5. What other actions might be taken – by wider partners and civil society – in response to the need for diversification?

- What would Barrow’s USP be? Its existence as an industrial town was originally based on the mining of iron ore, and that is now worked out. The distance from the main transport infrastructure creates a disadvantage that really has to be addressed if growth is to happen – Morecambe bay and Duddon barrages would of course have a huge impact. Barrow’s other selling point, the availability of a highly skilled work-force, would probably be damaged by any move away from submarine construction, although it could form the basis for alternative industry.

- If talking of inward investment it is worth noting that the two largest projects announced recently – GSK (pharmaceuticals) and Siemens (undersea cables) – are both to be based at Ulverston not Barrow. However, this shows that the transport infrastructure probably can be managed.

- There is a history of universities opening – or extending – onto former maritime sites. For example Sunderland which used to build a third of the world’s tonnage in shipbuilding is now the site of the University. However in the current climate – reducing student numbers - there is no possibility of the University of Cumbria opening a further site in Barrow.

6. What are the lessons that can be learnt from comparable international programmes?

- Not aware of the answers but if you look at the history of Barrow you will see that its fortunes have risen and fallen over the years.

- Of course Barrow was extremely wealthy when it was at the centre of a maritime economy – well placed for the shipping routes between Wales, Ireland, Scotland and Isle of Man and defended by Peel Castle. It was also an ecclesiastical centre evidenced by the massive Furness Abbey until that was harmed by Henry VIII’s attack on monasteries.

- It then had a period when it exploited its natural resource (iron-ore) and its natural location (ideal for shipbuilding.) But in an era of land based economies Barrow is not well sited. If submarine construction were to go, maybe Barrow in its current form would have had its day as a major industrial centre and it should concentrate on tourism and / or high tech industry instead, almost certainly on a smaller scale.
1. What are the economic and industrial implications resulting from options other than a like for like replacement of Trident?

- First thing to say is that you need to look at the Defence Industrial Strategy of 2005. That recognizes that to have credible independent nuclear deterrent UK needs to have independent capacity to build (design, etc) the launch platforms - in our case and at all times since 1962, that means maintaining a capacity to build submarines.
- In 1980s view was that Barrow was luxurious - a highly protected sector, certainly overmanned. At this time owned by VSEL, then taken over by GEC and then BAE Systems. Employment was run down and then when the Astute programme started in the mid-late 1990s there was a “skills” gap which created a problem.
- Therefore an important consideration for the MOD is maintaining a “drumbeat” in terms of submarine production. This can be, and is, managed ie slightly slowed down - and potentially could be speeded up - as orders dictate. The crucial goal is to maintain an industrial workload to maintain the full set of industrial capabilities to design, develop, build and support submarines at an acceptable cost.
- It is very unlikely that even if the UK wanted to it could buy submarines from other countries – except possibly the USA if the political climate allowed. Equally it is clear that Barrow is unlikely to build military submarines for other countries.
- So - to answer the question - if decision was to build 3 not 4 replacements (presumably on basis that less prone to need repair) then the INDUSTRIAL capability implications would be minimal. Submarine production capacity would continue albeit at slower rate. Worth pointing out that because of the need to slow down production then 3 rather than 4 would not be necessarily much cheaper because the costs of the full range of industrial capabilities would have to be spread across a smaller number of vessels. If however the UK decided to adopt a different delivery system such as airborne platform or to cancel the nuclear deterrent programme altogether, the economic and industrial implications would be very large.
- Clearly for the geographically isolated economy of Barrow the impact would be major in terms of job losses and decline. Many of the skilled workers, both in advanced engineering and on the design side, might find work elsewhere, although would probably need to re-locate. The real problem would be the town itself and those left behind.
- In terms of submarine building capacity it might mark the end of a capacity which is highly skilled and which is difficult to recreate. Without the nuclear ‘bomber’ boats, the cost and military logic of maintaining a submarine building capacity based on attack submarines such as Astute and a possible successor would be problematic. Very few other countries have the expertise and experience in submarines we have in UK. India is trying, China is trying but it is very demanding. Would need to be clear that this is a one way street - once lost, lost forever.

2. What are the economic and industrial considerations in taking forward an active policy of diversification both for Barrow and its supply chain?

- When we look at Barrow on the map it is clear that geography has had a big part in its settlement but now geography is less likely to be kind. Access is crucial to most businesses - access to markets, access to raw materials, and access to skills. Infrastructure is very important and Barrow is remote.
- If there were to be the loss of the shipyard then not clear whether it is a Governmental problem or an MOD problem.
- Those with nuclear engineering skills would undoubtedly find work given the expected uplift in nuclear power generation - those with design skills would also find work elsewhere. Those with general shipbuilding skills might get work on oil platform production. Others, as said above, would have problems.
- The idea that Barrow could become a centre for marine technologies is problematic because there are already a number of shipyards - Swan Hunters, Cammel Laird and Harland and
Wolff - in that marketplace so not too promising. If turned to conventional shipbuilding then different - lower - skills and Korea has anyway cornered the market.

- That all said, the decision to proceed, or not with the Vanguard replacement, - if for example an alternative emerged, it was too expensive or if it is rendered obsolete due to advances in tracking technology making submarines visible - must be taken on defence grounds and not on economic or social considerations. In that sense the future of Barrow is not a driver of the decision.

3. What can be learnt from previous initiatives to diversify and/or regenerate the Furness peninsula

- Not my area of expertise

4. What is the scale and type of investment and commitment that is required by Government – and others - to sustain and develop jobs and skills in Barrow?

- Barrow would come into the Government’s reckoning if Scotland voted for independence. The UK seems unlikely to turn to foreign suppliers for naval combat ships. After current orders for warships have ended, it would be logical for new contracts to go to English shipyards.

5. What other actions might be taken – by wider partners and civil society – in response to the need for diversification?

- More one thinks about this more strikes me that Barrow and nuclear powered, and armed, submarine production is sui generis case - not similar to any situation elsewhere.

6. What are the lessons that can be learnt from comparable international programmes?

- Not my area of expertise but aware that in France GEAT cut armoured vehicle production significantly but not in any comparably isolated place. Barrow is unique.
- The US and France both recognize that, to stay in the nuclear submarine building business, a flow (drumbeat) of orders is needed.
What are the economic and industrial implications resulting from options other than a like for like replacement of Trident?

- Clearly would depend on what those options might be.
- The Trident replacement project is a significant capital project over the next 30 years and the loss of this programme would have a significant impact on jobs, economic prosperity and the manufacturing capability of the UK:
  - Employment at the Barrow shipyard is expected to rise but more than 1,000 to over 6,000 to deliver the Successor programme. These additional roles would be lost; indeed there would be a significant risk of substantial job losses as a result.
  - Aspirations for an operational submarine flotilla would be significantly impacted.
  - The Oxford Economics Report on “The Economic Contribution of BAE Systems to the UK in 2009” found that for every 10 jobs directly created by BAE Systems, another 12 jobs are supported in the Supply Chain. We could therefore assume that a further 7,200 jobs could be lost.
  - The report also found that the economic value created from this activity created a further 7 jobs in the wider economy, effectively meaning a further 4,200 jobs at risk.
  - Therefore a potential 17,400 livelihoods would be at risk if the Trident Replacement project did not go ahead
  - In 2011 alone, spend from Astute construction in the UK Supply Chain amounted to more than £200m with 2100 suppliers. 2100 businesses could therefore be negatively impacted from any decision not to replace the Trident class
  - The vast majority of our Supply Chain is UK based – submarines are very much a UK focussed product and therefore the industrial and economic impact on the UK economy would be vast
  - A recent RUSI report on the “Destination of the Defence Pound” found that for every £1m spent on Defence projects, close to 36% was returned to the Exchequer via tax and NI contributions etc therefore any savings forecast would be overstated by this amount.
  - BAE Systems places a huge focus on internal staff development and encouraging education including apprentices and training and encouraging science and technology education within the broader community. The Successor programme would be the largest driver and beneficiary for the apprenticeship and early career offering within the company over the next ten years. Lack of growth at the shipyard means this investment in young people would be discontinued
  - The loss of skills which would result from the cancellation of the Trident replacement programme would prohibit the country’s ability to deliver any future submarine programmes. The problems experienced on the Astute project have been as a direct result of the loss of skills which resulted from the gap of several years between Trident and Astute.
  -Whilst the Astute programme is not scheduled to complete at the Barrow shipyard until 2023, the engineering function is already at a critical point with the 1,000 engineers transitioning from Astute onto the Trident replacement programme. This capability would be immediately placed at risk should the programme be cancelled.

What are the economic and industrial considerations in taking forward an active policy of diversification both for Barrow and its supply chain?

- Options for diversification exist but could in no way compensate for the loss of a submarine programme. A PA Consulting exercise was carried out in 2002 in response to the impact on the local economy from the loss of jobs at the shipyard at the end of the Trident programme when numbers employed fell from 16,000 to 2,500 at the lowest point. The exercise looked at the potential for diversification and concluded that:
  - The Barrow shipyard is an integral part of the local community and the impact of any reduction in employment at the shipyard would be dramatic due to its geographic isolation and lack of employment opportunities
  - There are no diversification options available to the Barrow shipyard which could replace the jobs provided by the submarine programme.
Barrow already has significant levels of unemployment and areas of deprivation. Any reduction in the submarine programme would have a further negative impact.

Supply Chain diversification could and should be encouraged to reduce the dependency of the local economy on the shipyard and protect it from any decline in employment post-delivery of the Trident replacement class but the underlying stability provided by the submarine programme would be critical to this longer term aspiration. The growth opportunity presented to the supply chain by the Trident Replacement programme would be fundamental to this success.

Any diminishing of the submarine programme would have a consequent impact on other businesses in the area both within the supply chain and those businesses dependant on the economic value generated from wages from the shipyard being spent in the local area.

The UK defence sector is a significant national provider of skills training in design and specialist manufacturing and provides a receptacle for students from STEM subject backgrounds to continue their development. Barrow shipyard will provide 136 apprenticeships, 14 advanced apprenticeships and 40 graduate intake roles in 2012 and at any time approximately 10% of its workforce is in early careers investment. These early careers opportunities would be lost and therefore these skills would not be developed and available for diversification potential.

In addition to these numbers, a further 280 roles are required to support the Successor programme. Clearly these employment opportunities would be lost if the submarine programme were to be reduced and the additional economic value created to stimulate growth and diversification would be lost.

The turnover at the shipyard is generated 99% from MOD revenue, almost entirely from the submarine programme. This dependency has been consciously driven by both BAE Systems and MOD to enable the shipyard to focus on the submarine programme without the distraction of diversification options.

There is a local strategy to reduce the dependency of the local area on the shipyard and support for that programme, assisting local supply chain and SMEs to grow and diversify on the back of the stability which the submarine programme offers. Government support for that strategy which enables us to market the area offering incentives to expand or relocate to the area for local supply chain and adjacent businesses would be invaluable to assist in this aim.

Achieving a level of diversification during the timescales of the Successor programme would protect the area from the impact of a reduction in the workforce at the end of that programme.

What can be learnt from previous initiatives to diversify and / or regenerate the Furness peninsula?

Post Trident, considerable effort was made by the shipyard to explore opportunities to diversify. None were sustainable, being financially unviable.

The shipyard also invested £1m in the local enterprise agency which again had only limited success in diversifying the local economy to replace the jobs lost.

Regeneration aspirations for the Furness peninsula are dependent on an income stream generated from wages from the shipyard. Plans for economic development of the area are all dependent on the continued existence of the shipyard, providing economic input to the area through wages and supply chain activity and are largely focussed on improving the quality of life in the local area to attract and retain the skilled workforce necessary to deliver the submarine programme. The PA Consulting study previously referred to concluded that any options identified could in no way replace a submarine programme.

Diversification opportunities have been explored locally with some success in the low carbon lighting cluster in the Ulverston area and the proliferation of offshore wind farms but the number of jobs created has not been close to compensating for the loss of jobs at the shipyard post Trident when the workforce reduced from 15,000 to below 3,000.

The gap between Trident and Astute caused a significant loss of jobs and skills from the shipyard during that time, despite some naval shipbuilding throughput during these years. The subsequent significant dilution of submarine skills and capability both in design and production undoubtedly contributed to the difficulties encountered on the Astute programme. In order to preserve this skillbase for future demand for submarine capability it is essential that a steady flow of work is maintained. It can take an average of six to eight years to train a fully qualified shipyard worker.
What is the scale and type of investment and commitment that is required by Government and others to sustain and develop jobs and skills in Barrow?

- The current turnover at the shipyard is in the region of £600m and will increase over the next 5 years to more than £1bn, 50% of this turnover being through supply chain.
- The size of government intervention required to sustain and develop jobs and skills in Barrow would therefore be enormous.
- A major intervention by central government to entice a significant inward investment into the area, of a similar size to the shipyard would be required.
- To put this into context, the turnover in shipbuilding terms is the equivalent of 3 cruise liners.
- It would require more than the equivalent of a Nissan car plant.
- The shipyard is an artisan business requiring and creating a highly skilled workforce. Few businesses would require or could replace this level of skill, even at the levels of turnover and jobs.
- As an example, there has been huge public celebration at the recent announcement of an investment in GlaxoSmithKline in nearby Ulverston. This is indeed a significant success and should be celebrated but will only create 400 jobs, albeit a large number will be highly skilled.
- Barrow already has the fastest declining population in England and Wales. Without the submarine programme, this investment would not be made and young local talent would continue to evacuate the area. With a robust secure future at the shipyard and a strategy to encourage growth and diversification within the local supply chain, the employment opportunities would ensure that large elements of that indigenous talent pool were retained.

What other actions might be taken by wider partners and civil society in response to the need for diversification?

- The Corporate Social Responsibility agenda at the shipyard is constructed around a desire to encourage local supply chain, SMEs and entrepreneurs to grow and diversify on the basis of the stability offered by the programme of work at the shipyard.
- The shipyard works closely with the economic development bodies within the local area, and at the County and regional levels, exploring opportunities to support this agenda.
- Attracting Inward Investment to diversify employment would be essential. In order to do so, support to improve standards in education, healthcare, transport infrastructure and the social arts provision would be necessary.
- Other employers in the local area can be dependent on the shipyard as a source of talent and skills for their own emerging businesses in addition to their dependence for orders and economic value from wages. Working with these other bodies we can encourage other employers to initiate their own training schemes, again supporting the retention of young local talent.
- In order to meet the demands of the programme, there is a requirement to recruit a significant number of highly skilled employees and support from the government to assist in the regeneration plans to enhance the quality of life in the local would be a significant help. A major barrier to recruitment is the lack of alternative employment options in the local area for spouse / partner opportunities.

What are the lessons that can be learnt from comparable international programmes?

- We have no real knowledge of comparable international programmes in the industry. Within the UK, attempts to rejuvenate, through diversification, shipyards which have been in decline or have closed have failed. There are many examples of this including Cammell Laird, Swan Hunter, Harland and Woolf etc. Despite all attempts to replace the jobs lost, the damage to the local areas has been significant.
1. What are the economic and industrial implications resulting from options other than a like for like replacement of Trident?

- Well one must remember that there have been endless review – I think 12 in the last 40 years. This one is very much a political sop to the Liberal Democrats in my view.
- This one is based on a different – reduced – criterion namely that in future all we need to be able to do is reach sizeable targets but not necessarily Moscow.
- It is also looking at other delivery systems – air launched or even land based – but pretty clear that some don’t make sense not least as in fact would be more expensive than what is proposed.
- To some Astute with cruise seems an appealing idea but in fact UK would have to develop a new missile which when you include all testing and other costs is more expensive than replacing the Vanguard submarines.
- If however this option was chosen then the implications for Barrow would potentially not be as severe as UK would need an additional number of Astutes as you cannot simply make the existing complement of seven meet the deterrent commitment.
- On the other hand a decision may be taken not to continue with Trident – and there is a unilateralist streak within the Liberal Democrats and indeed Labour. If the decision to get rid of the deterrent is made then there will then be a very big discussion within the MOD about priorities and a question would be raised about whether to get out of nuclear submarine production in perpetuity.
- As a naval man I am clear that as a maritime nation the UK benefits massively from having submarine capability so some future role for the BAE Systems shipyard is required – whether conventional or nuclear weapons submarines.
- That said I am also in favour of nuclear disarmament – for example so called battlefield nuclear weapons should go now. However even if Obama and Putin resume disarmament negotiations not sure UK should be reducing its minimal stockpile further. In the past we have given far more than other countries.
- Of course we should be aware of the other option. If we ceased continuous at sea deterrence one could reduce to 3 or possibly 2 the number of replacement ballistic submarine hulls required. This would obviously have a major impact on the work at Barrow.

2. What are the economic and industrial considerations in taking forward an active policy of diversification both for Barrow and its supply chain?

- There clearly is very little other shipbuilding work apart from Type 26 – Barrow could do but argument is between Clyde and Portsmouth with BAE Systems probably hedging its bets in case of positive referendum result in Scotland but Portsmouth more likely to benefit from that.

3. What can be learnt from previous initiatives to diversify and/or regenerate the Furness peninsula?

- Not my area of expertise.

4. What is the scale and type of investment and commitment that is required by Government – and others - to sustain and develop jobs and skills in Barrow?

- I fear Conservatives don’t have the loyalty to place that might be expected from real conservatives but of course decline in numbers has been seen before – there at Barrow and elsewhere.
- Devonport reduced from 28,000 to 2,000 now. Chatham was closed. Clearly there should – and would need to be – a plan.

5. What other actions might be taken – by wider partners and civil society – in response to the need for diversification?
• There has been provision for BAE Systems to restructure within some existing contracts and in fact this could happen again. The current drumbeat has been fixed to keep capacity available but is not necessarily providing the cheapest products. It is important these benefits flow to the employees.

6. What are the lessons that can be learnt from comparable international programmes?

• Not my area of expertise
1. **What are the economic and industrial implications resulting from options other than a like for like replacement of Trident?**

Abandoning the UK's current plan to renew the current Vanguard class submarines with successor submarines capable of carrying the Trident D5 missile would have a severe impact on the economy of Barrow and Furness as well as endangering thousands of jobs in the wider supply chain. The supply chain for nuclear submarines incorporates businesses of every size in every region of Britain, and is linked to a wide range of other industries, particularly those based on precision and high-tech engineering. For several companies, there is a strong synergy between supply chain work on nuclear submarines for the military and capability to be part of a civil nuclear supply chain – Forgemasters in Sheffield is a good example of this. Loss of this synergy could see a significantly greater proportion of civil nuclear manufacturing being won by companies overseas.

One of the alternatives under consideration, namely the idea you could equip Astute-class submarines with nuclear-tipped cruise, could mean a limited extension of the Astute manufacturing programme to build extra hulls and make the necessary design adaptations in Barrow, and necessitate a major undertaking to construct new warheads and construct or procure new missiles. Aside from serious doubts that this would be an effective form of deterrent or would be permissible under Britain's non-proliferation obligations, both of which are outside the scope of this paper, this option would employ thousands fewer people in Barrow and mean an end to production far earlier, with nothing identified to keep the submarine supply chain together.

Barrow has worked hard to build up world class skills and an expertise base around the shipyard – questions over the future viability of submarine construction would place the future of that potentially mobile skill base at risk. At best, it would be a slow and difficult process to recreate that supply chain at a future date; at worst, a major manufacturing capability which currently kept in the UK for reasons of national security, could be lost for good. The major cost and deadline overruns on the first two Astute-class boats are testament to the damage done by a relatively short gap in the order book between the end of the Vanguard-class submarines and the beginning of work on the Astute class in the 1990s. Back then, many took early retirement, some moved to Australia to work on its submarine programme, and those who stayed in the yard found it difficult to re-master the art of submarine building after a period working on the less specialised construction of surface ships. As one employee put it recently, it is hard to go back to making Rolls Royces when you have spent a couple of years banging out Skodas.

Whilst direct comparisons are difficult, it is estimated that UK submarines are some 40 per cent cheaper than their US equivalent* and so should a “purchase off the shelf” option be considered this would have significant cost implications, aside from the major loss to the UK from directing that investment abroad rather than using it to employ people here.

2. **What are the economic and industrial considerations in taking forward an active policy of diversification both for Barrow and its supply chain?**

A drive to diversify the Furness economy is an economic imperative, but it should happen on the foundation of building successor deterrent, not instead of it. Indeed, a prolonged programme of study that focuses on the economic consequences of scrapping successor runs the risk of distracting attention away from the urgent challenge of ensuring we maximize the lasting economic benefit to the area of successor deterrent going ahead, which is the policy of the two largest political parties in the UK.

Investment in submarine construction currently sustains more than 5,000 skilled jobs in the shipyard directly with many more sustained indirectly in the local economy. There is no alternative industry which could realistically be brought to Barrow which would provide investment on a scale which could come close to matching that. However, Barrow's stereotypical image as a one-industry town does a grave disservice to other important industries that are succeeding here. Continued investment in shipbuilding brings the opportunity to make Furness a national cradle for advanced manufacturing, alongside exciting developments for Furness as part of Cumbria’s energy coast, the new bio-
pharmaceutical plant planned by GlaxoSmithKline in Ulverston, and other skilled manufacturing areas such as the cluster of advanced LED lighting companies in the area.

There is so much potential in the Furness area, and success in diversifying the economy on the foundation of shipyard investment could greatly increase the range of employment opportunities and economic activity in the area.

This would help to encourage local young people to remain in the area, or return after completing higher education, as well as ensuring that the shipyard and other major employers are able to attract skilled employees by providing a range of employment opportunities for partners and family.

3. What can be learnt from previous initiatives to diversify and/or regenerate the Furness peninsula

It is essential that diversification and development policies ensure a close involvement with local small and medium enterprises; this has not always been the case in the past, and failing to do so creates a vicious circle whereby attempts to diversify the economy fail to assist the existing range of businesses operating in Furness. Similarly, such policies need to be linked to sustained efforts to nurture an enterprise culture in Furness, with close ties between local business, regeneration bodies and Furness’ schools and college. This would help to tackle what are, by national standards, low levels of business start-up and survival in the Barrow and Furness area and help to ensure there is a greater community buy-in to regeneration and diversification schemes.

Development programmes need greater certainty over long-term funding, as evidenced by the continued blockage over funds to complete the marina and marina village development, which has the potential to provide a wide range of housing and business opportunities, yet is stalled over a relatively small sum of money. The loss of a powerful voice for development funding in the region, in the form of the North West Development Agency, will not help to deliver such schemes. We have also seen that schemes to develop and diversify Barrow need to be linked with steps to reduce the geographic isolation of Furness. Local business and competitiveness has been helped by the provision of major upgrades to the A590, but there remain significant pinch-points and accident blackspots on key routes into the area, which need to be addressed. Similarly, threats to Furness’ direct rail link to Manchester and its airport would limit the area’s future competitiveness.

Above all, the last decade has transformed perceptions of manufacturing in Furness and this has triggered a reassessment of economic strategy in the area. Previously, regeneration and diversification strategies were based on the assumption that manufacturing would continue to decline in the area. Progress over the last ten years has shown that in fact Furness is one of the areas of the UK best placed to expand its manufacturing base. See reference to the renewed economic strategy for Furness below.

4. What is the scale and type of investment and commitment that is required by Government – and others - to sustain and develop jobs and skills in Barrow?

It is important to invest in specific schemes, as well as more broadly in improving education and skills to meet the needs of the local economy. But government also should attempt to provide greater levels of certainty for Furness over key local projects. The future economic regime for onshore and offshore wind generation and the future civil nuclear power programme are examples of this. Both these sectors have the potential to become significant economic players and drivers of skilled employment in Furness, but uncertainties over future energy policy hold back investment. As previously mentioned, targeted investment in communications links, housing, broadband and skills is essential for the future of Furness’ economy. Recently Centrica decided to withdraw an application to build a biomass plant in the Furness area after a costly assessment process, meaning there is further delay in deciding a future for the site after the decision to close its gas-fired power station. That is evidence of the way lack of clarity in government policy can create damaging uncertainty.

5. What other actions might be taken – by wider partners and civil society – in response to the need for diversification?
Working with local employers, local authorities, trade unions and other interested bodies, I have produced a strategy document entitled ‘A National Cradle for Advance Manufacturing – Towards an Economic Vision for Furness’ which sets out a range of actions necessary to produce a diversification of the local economy and to provide for high-skilled jobs in the Furness area. The document is available at this address: http://www.scribd.com/doc/101748948/Towards-a-New-Economic-Vision-for-Furness. This highlights the many assets there are in the area and points the way forward for the further development of the local and wider economy using the skills, facilities, knowledge and expertise that has been gathered over generations but which would be put at risk if the shipyard’s order book were reduced.

6. **What are the lessons that can be learnt from comparable international programmes?**

I am not aware of any similar scenario to that of Barrow and Furness but would be interested to study them if others can point to them in the course of this study.

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