

**NATIONAL GOVERNMENTS AND THEIR DEFENCE INDUSTRIAL BASES:  
A COMPARATIVE ASSESSMENT OF SELECTED COUNTRIES**

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## G1 INTRODUCTION

The primary objective of a nation's defence spending is to provide its military forces in a timely and economical way with equipment and services of a quality and level that are sufficient for them to undertake the roles assigned by the Government. An important cornerstone to this process is the availability of a capable, reliable, cost-effective domestic defence industrial base.

For the defence industries of nations, political priorities, for example as expressed through a defence industrial policy (strategy) can have a significant impact on their size, structure and capabilities, the operating behaviours of individual firms and ultimately, their sustainability. This paper compares the policy approaches taken by selected governments to their defence industrial bases. The findings presented may suggest to Canadian decision-makers the optimal policy orientation in respect to Canada's defence industrial base.

This paper is structured into three parts:

- **Defence Economics:** a review of studies undertaken to quantify the impact of the defence spending of nations on their national economies. Special coverage is given to the impacts produced from investments directed to the development and application of defence technologies.
- **Governments and their Defence Industrial Bases:** an overview of how nations typically approach their defence industries and their defence procurement from a policy and decision-making context along with comparison of the policy orientation of selected governments to the development and sustainment of their defence industrial bases.
- **Offset/Industrial Participation Policies:** a comparative review of the 'Offsets Policies' applied by governments to secure an economic return when they award large defence procurement contracts to suppliers of other nations.

## G2 DEFENCE ECONOMICS

### G2.1 DEFENCE SPENDING AND IMPACTS ON NATIONAL ECONOMIES

A country's defence spending, being a component of its fiscal policy impacts in a number of ways on its national and sub-economies. The impacts flow from the 'multiplier effect' of each dollar invested. For example, defence spending generates high skilled employment in the domestic industrial base to the degree that it is accessed to meet the country's military equipment and services needs. The export of indigenous developed and produced defence equipment and services impacts favourably on a nation's trade balance. Investments in defence research and development spin-off to the civil sector and positively impact on its innovation capacity and productivity level.

*"As we enter the 21st Century, technologies originally developed for defense purposes such as computers and satellite communications appear to have become a driving force behind economic growth in the United States. Analysis employing data from the NBER (National Bureau for Economic Research) Manufacturing Productivity Database and the BEA's (US Bureau for Economic Analysis) Input-Output tables then demonstrates that defense procurement policies did have significant effects on the productivity performance of disaggregated manufacturing industries because of a process of procurement-driven technological innovation".<sup>ii</sup>*

It is useful to review several empirical studies that confirm the positive relationship between the defence spending of nations and their economies. Benoit<sup>iii</sup> in the late 1970s reported that defence spending had a positive impact on growth in 44 countries studied. Ram<sup>iv</sup> (1993) and Sandler and Hartley<sup>v</sup> (1995) identified positive benefits of defence spending, such as a stimulative effect on employment (particularly if labour is currently underemployed such as in the current global and Canadian recessionary period), spill-overs from defence-related R&D to civil applications, and maintaining national security and stability, which allows businesses to grow without worry. In respect to employment, Hooker and Knetter<sup>vi</sup> in their study of the United States (U.S.) found that defence procurement spending had a significant impact on employment. Brumm<sup>vii</sup> (1997) also found that real per capita GDP growth is positively correlated with the military share of GDP spending.

Atesoglu and Mueller<sup>viii</sup> (1990) found that defence spending has a significantly positive impact on real economic growth. Assuming 3.1% real growth in Gross National Product (GNP), they showed that a 4% to 10% increase in defence spending would cause additional growth in real output of 1.1% to 2.8%. This positive relationship was confirmed in Atesoglu's<sup>ix</sup> later 2002 study that examined the impact of U.S. defence spending on the national economy where his findings indicated that a 4% increase in defence spending leads to a 2% increase in aggregate real output. Ahmed<sup>x</sup> (1986) had previously reported a direct positive relationship between defence spending and economic growth in the United Kingdom (U.K.).

In respect to the impact of Canada's defence spending on its economy, a 2004 study by Wilkins<sup>xi</sup> examining 85 countries found that defence spending was positive for 39 of the countries and significantly positive for 8 of these, including Canada (1% increase in defence spending has a positive co-efficient on GDP of .47%). The significant positive

impact for Canada and countries like the U.K. and France arise as a consequence of their having highly capital (equipment) intense militaries that source their equipment and services needs from technologically-sophisticated, highly skilled domestic industrial bases or in cases where spending is on foreign equipment, the countries use policy instruments e.g. 'offsets', to secure 'compensatory economic benefits' e.g. technology transfer and collaboration, licensing or co-production. Similarly, a recent study by Bremmer and Kesslerling<sup>xii</sup> in 2007 found that increased defence spending in Canada leads to an increase in its GDP. Solomon<sup>xiii</sup> (1999) in a major study of the Canadian Defence Industrial Base estimated the multiplier impact of domestic defence spending as:

**FIGURE G2.1-1 DEFENCE SPENDING MULTIPLIERS**

<b>Domestic Defence Demand</b>	
<b>Gross Output (Total Production/Initial Expenditures)</b>	<b>1.40</b>
<b>GDP (Total/Direct GDP)</b>	<b>1.87</b>
<b>GDP (Total/Initial Expenditures)</b>	<b>0.53</b>
<b>Employment</b>	<b>1.35</b>

A study commissioned by the Canadian Department of Western Diversification on the economic impact flowing from the NATO Flying Training Canada Program<sup>xiv</sup> found:

**FIGURE G2.1-2 NFTC IMPACTS**

<b>Annual Impacts of the NFTC Program</b>	
<b>Annual Economic Impact (Value Added) on Saskatchewan Economy</b>	\$ 52.0 Million
<b>Employment Impact</b>	
<ul style="list-style-type: none"> <li>• Direct and Indirect Moose Jaw Employment</li> <li>• Direct and Indirect Saskatchewan Employment</li> </ul>	920 FTE 1,130 FTE
<b>Labour Income Impact</b>	
<ul style="list-style-type: none"> <li>• Direct and indirect Moose Jaw Income</li> <li>• Direct and Indirect Saskatchewan Income</li> </ul>	\$ 39.1 Million \$48.0 Million
<b>Tax Impact</b>	
<ul style="list-style-type: none"> <li>• Federal / Provincial Income Tax</li> <li>• GST / PST Fuel Taxes</li> <li>• Payments to Municipal Government</li> </ul>	\$ 10.1 Million \$4.5 Million \$ 1.1 Million
<b>NFTC Training Sold to Other Nations (Total to Date)</b>	\$ 1.13 Billion
<b>One Time Impacts of the NFTC Program</b>	
<b>Construction Impact</b>	\$ 25.0 Million

A similar study of the Australian ANZAC Frigate Program (\$5.6B/1999), that was subject to the Australian Industry Involvement(All) Program, found 1,300 domestic firms were directly involved in the supply chain and that over the life of the project the domestic value-added amounts to 72% (\$4.0B) of the total contract. It also estimated the indirect economic benefit of constructing the ten frigates in Australia rather than purchasing similar vessels from overseas was:


















- An additional \$200M to \$500M in annual GDP – over the fifteen-year construction phase an GDP increase of a minimum \$3B up to \$7.5B.
- An additional \$147M to \$300M in annual consumption – or \$2.2B to \$4.5B over the construction phase.
- An additional 7,850 full-time positions (beyond the direct employment).








The higher estimates reflect a case where there was excess capacity in the economy (i.e. unemployment), while the lower estimates assume full employment in the economy as when resources become scarcer the economic value of the projects reduces. This finding suggests that Canada could reap a high economic return by advancing defence projects in the current period of high employment that is expected to continue for many years.

The studies in aggregate also suggest that those countries with defence spending in the range of 1.5% to 4% of GDP derive the highest economic return from defence spending. Countries with spending less than 1.5% generally having paramilitary, non-combat-capable forces that do not require technically advanced defence industries and for those over 4% (e.g. U.S.) the impact while still positive, decreases as spending increases.

**Figure G2.1-3** shows the defence expenditure of the selected countries for the period 1998 to 2007. For most, the spending has remained relatively stable (except lower in Germany in post-unification period and higher in the U.K. from involvement in Iraq). Canada's defence spending had modestly increased in recent years.

**FIGURE G2.1-3 DEFENCE SPENDING: 1998 TO 2007**

	Defence Expenditure % of GDP	Actual Defence Expenditure (US\$B)
Turkey 	5.3	30.9
Greece 	4.3	7.9
United States 	4.06	636.2
Russian Federation 	3.9	39.6
France 	2.6	70.6
United Kingdom 	2.4	65.1
Australia 	2.4	23.0
Portugal 	2.3	3.4
Finland 	2.0	3.7
Romania 	1.9	2.9
Norway 	1.9	5.7
Italy 	1.8	40.5
Hungary 	1.75	3.1
Poland 	1.71	11.7
Netherlands 	1.6	12.0
Sweden 	1.5	6.3
Denmark 	1.5	3.2

	Defence Expenditure % of GDP	Actual Defence Expenditure (US\$B)
Germany 	1.5	45.9
Czech Republic 	1.46	2.8
Belgium 	1.3	4.0
Spain 	1.3	18.9
Canada 	1.3	18.8
Austria 	0.9	2.9
Japan 	0.8	48.8

Source: Stockholm International Peace Research Institute (SIPRI)

### Conclusion

There is considerable empirical evidence at both the national and sub-national (e.g. specific defence project) level that confirms that defence spending has a significant multiplier impact through the wider economy e.g. GDP growth, employment growth.

**FIGURE G2.1-4 MULTIPLIER EFFECTS**



## G2.2 TYPES OF DEFENCE SPENDING AND NATIONAL ECONOMIES

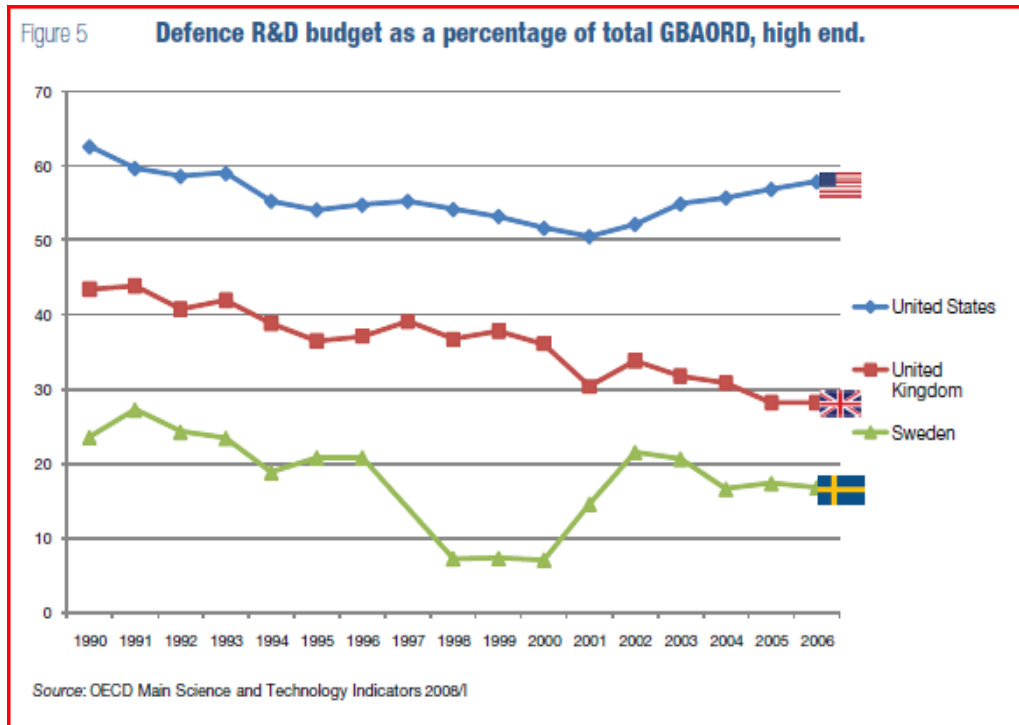
Not all defence expenditures are purely for government (military) consumption. The type of defence spending contributing the most positive economic impact is investments research and development. This impact has been growing in recent years as countries have shifted their spending away from major weapons platforms to more intelligence-systems technology including: sensor, nanotechnologies, micro satellites.

The different nature of the new defence R&D has profound implications for the industrial the sectors involved. The development of big weapons systems in the decades of Cold War led to a high concentration of both R&D and procurement in a few large corporations, thus conferring on them a great deal of market power. By contrast, the development of computer interfaces, remote sensing, autonomous vehicles, internet security, biological protection, and the like, creates an entirely different defence R&D environment. These systems are by and large dual-use; a civil market exists for many of the technologies being developed; and, already a vast number of companies work in these new technology domains thereby increasing those who can partake in this new defence R&D. Defence R&D programs that promote this diversity can prove to be highly beneficial both for meeting the required defence need and for the advanced technology sectors themselves, thus fostering economic growth.

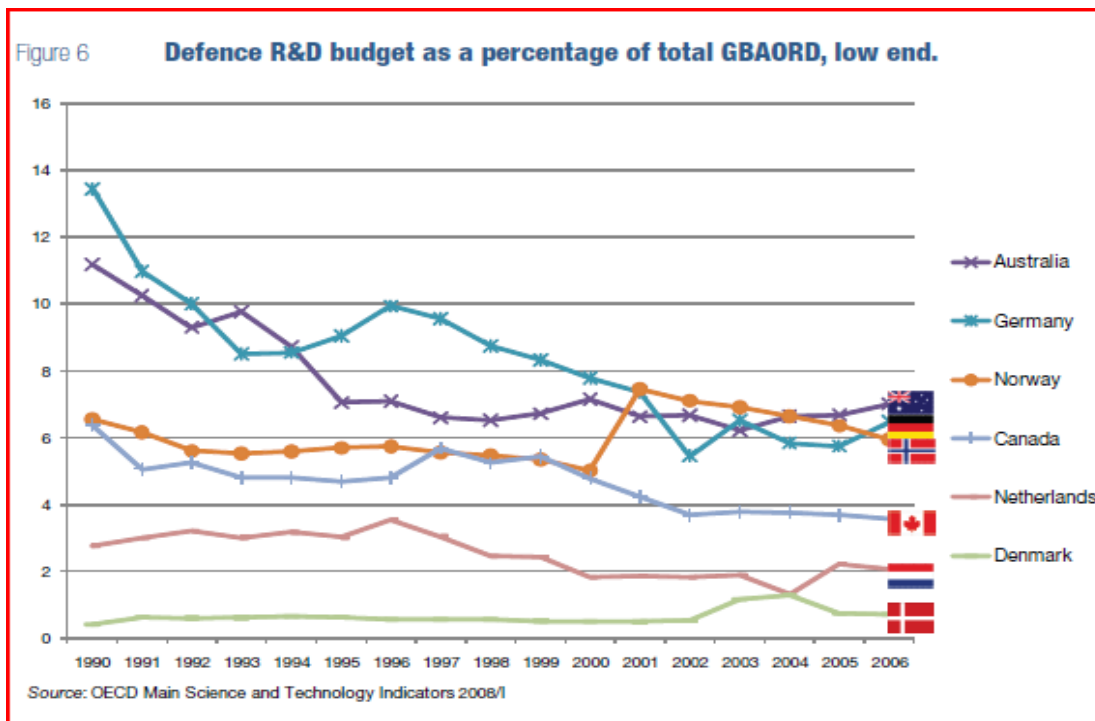
It is illustrative to look at the defence R&D spending of countries. **Figures G2.2-1 and G2.2-2** show the defence R&D budgets of selected countries as a percentage of Government Budget Appropriations or Outlays on R&D (GBAORD).<sup>xv</sup> In 2006, the U.S. had the largest share of the GBAORD devoted to defence R&D, at 57% followed by the U.K. (32%), France (22%), Sweden (17%), and Spain (16%). While Canada's overall defence spending has modestly increased in recent years, the portion allocated to defence R&D has fallen to just less than 4%. This compares to recent increases in defence R&D spending by Australia and the Netherlands (two nations which have underscored the importance of such spending in their recent defence industrial policies), as well for Germany and the U.S.



**FIGURE G2.2-1 DEFENCE R&D BUDGET AS % OF GBAORD: HIGH END**



**FIGURE G2.2-2 DEFENCE R&D BUDGET AS % OF GBAORD: LOW END**



## **G3 GOVERNMENTS AND THEIR DEFENCE INDUSTRIAL BASES**

Governments are central to understanding defence industries. Governments are major buyers and sometimes, the only buyers of defence equipment. A government can use its buying power to determine the size, structure, capabilities and ownership of its national defence industry. It can influence entry and exit, prices, and efficiency and profitability (e.g. setting profit levels on government contracts). Governments can support their defence industries by preferential in-country purchasing and through direct subsidy payments. They can also affect the conduct of firms (e.g., by channelling their R&D efforts, supporting the export of the equipment and services that they produce).

### **G3.1 INTERNATIONAL TRADE RULES AND DEFENCE PROCUREMENT**

The Government Procurement Agreement (Annex 4) of the World Trade Organization established a framework of rights and obligations that each signatory must implement in its national laws, regulations, procedures and practices for public procurement. The cornerstones of the GPA are non-discrimination and transparency. In essence, a signatory country must treat companies (suppliers) of nations equally with those within its national borders in respect to its public procurement.

In most countries, the defence sector accounts for a large portion of government procurement. Unlike other types of public procurement, defence procurement raises concerns in respect to national security and defence. Countries therefore have been very aggressive in ensuring that when entering into international agreements with the objective of liberalizing trade that they retain the right to conduct their defence procurement in a way that protects their national security and defence interests<sup>xvi</sup>. The GPA takes these concerns into account and provides a safeguard provision that covers defence procurement.<sup>xvii</sup>

*“Nothing in this Agreement shall be construed to prevent any Party from taking any action or not disclosing any information which it considers necessary for the protection of its essential security interest relative to the procurement of arms, ammunitions or war materials, or to procurement indispensable for national security or for national defence purposes”.*

Pursuant to Article XXIII of the GPA, a signatory state is entitled to impose local content requirements in relation to its defence procurement.

The WTO/GPA special treatment of defence is mirrored in other most of the international codes on procurement such as Chapter 10 of North American Free Trade Agreement and European Union Treaty and Directives<sup>xviii</sup>.

### G3.2 FACTORS INFLUENCING DEFENCE PROCUREMENT DECISIONS

Pressures from having to trade-off defence spending with other national investments (e.g. health care, environment) and rising equipment and services costs mean that government policy-makers cannot avoid the need for some difficult choices.

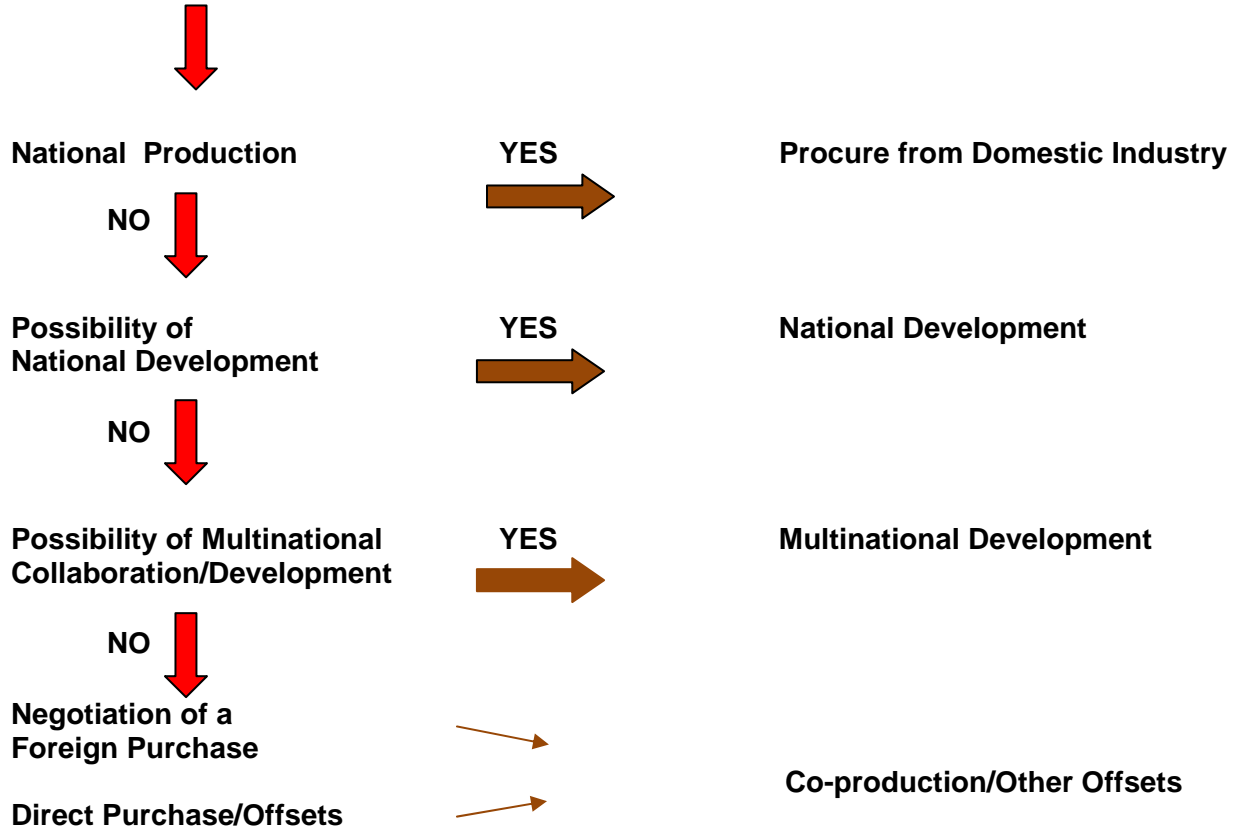
Procurement of defence equipment involves government in a set of complex choices in a world of uncertainty. Typically, procurement decisions involve the following choices:

- **What to buy?** Choices are required about the type of equipment to be purchased and its performance characteristics which, in turn, determines possibilities for benefits for the defence industry and the rest of the economy.
- **Who to buy from?** Choices have to be made between the two extremes of independent national development and procurement or buying direct from foreign suppliers or the intermediate option of having requirements developed and produced through international collaboration.
- **How to buy?** Choosing between competition or direct negotiation with a preferred supplier (or some tailoring of either approach).
- **Contracting.** A contract has to be selected between the extremes of 'cost-plus' and 'firm and fixed price' or some form of target cost-incentive contract.
- **Attaining Military-only vs. Wider Government Policy Objectives.** In making procurement choices, governments have to decide whether to focus on narrow defence criteria or to embrace wider economic and industrial objectives (e.g. employment; technology, etc).

**Figure G3.2-1** maps a typical the decision tree in deciding whether a specific defence requirement will be procured from the domestic industrial base or from foreign suppliers.

**FIGURE G3.2-1      PROCUREMENT STRATEGY CHOICES**

**Technical & Operation Specification**



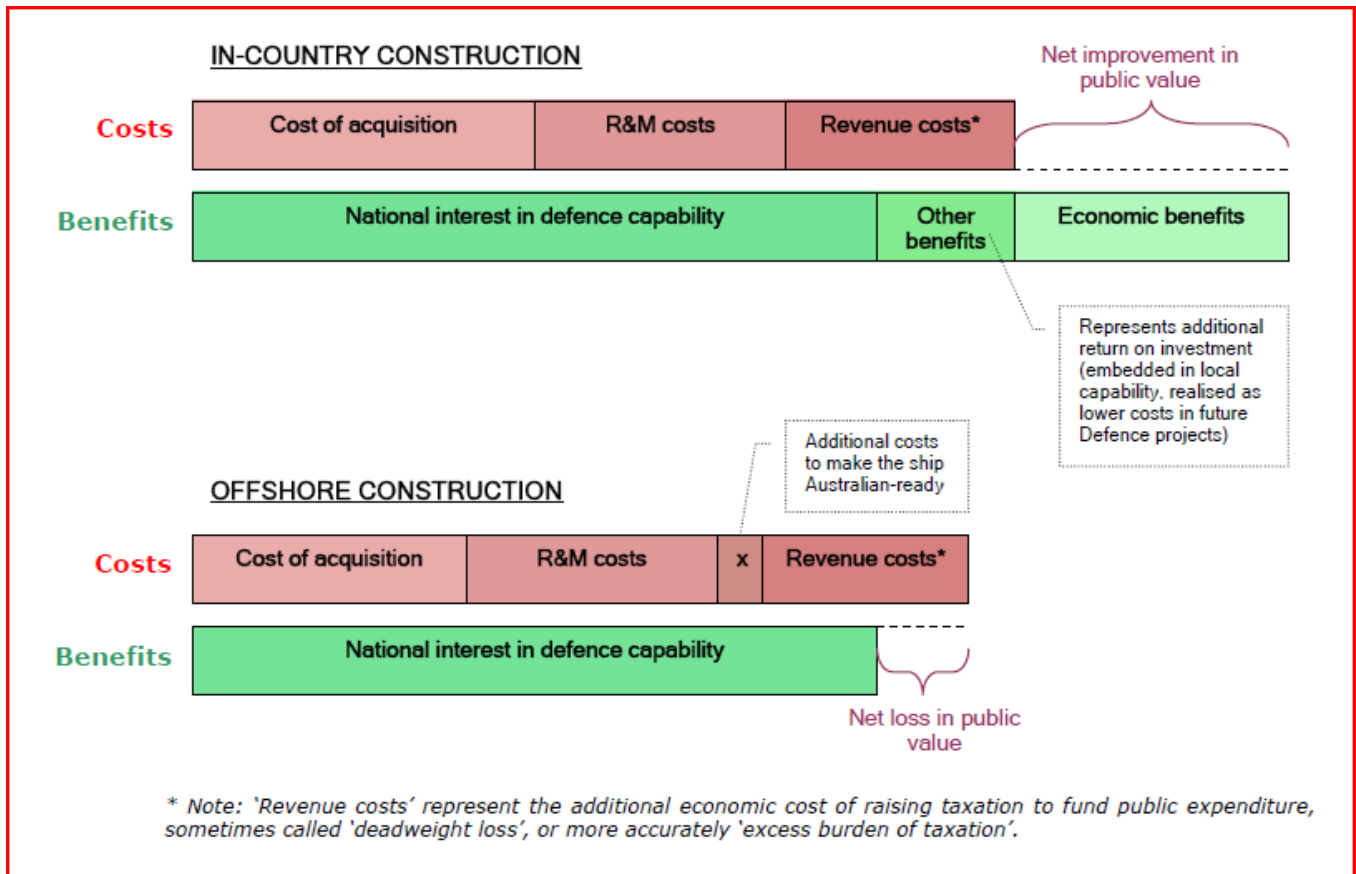
A UK Cabinet discussion paper<sup>xix</sup> suggests that the concept of ‘public value’ offers a useful way of setting out the ultimate goals of public service activities and decisions. It is an attempt to measure the total benefits which flow from government action and to avoid the narrow and oversimplified approaches that have dominated decision-making in the past. The ‘public value’ concept appears central to expenditures on defence capability. Decisions on increasing defence expenditures and how spending is carried out require an assessment of what the public is prepared to give up in terms of other public expenditures, in order to fund defence capability. A nation’s defence expenditures are based on legitimacy – defence capabilities should increase where the public continues to derive value from its provision, above the sacrifice it makes for funding them. Therefore a decision to increase defence capabilities must take account of the overall ‘public value’, broadly defined. Defence procurement must also look to implications beyond a single project. Procurement options between ‘in-country’ or offshore sourcing need to address:

- Initial cost of the procurement;
- Cost and ability of maintaining/modifying foreign procured equipment;

- Residual benefits embedded in local industry that will reduce the cost of future projects (akin to a future dividend payable to the nation/its defence establishment); and
- Wider economic benefits.

The Victoria State Government of Australia, where most of the country’s shipbuilding and repair capacity resides proposed that the ‘public value’ concept adopted by the national government in respect to the procurement of naval ships. The following Chart 2<sup>xx</sup> gives an illustrative example of comparing two procurement options – in-country and off-shore sourcing. Both options deliver the required defence capability and therefore met the ‘national security interest’ imperative. However in-country sourcing provides additional value over procuring from foreign contractors (even in cases where the initial cost of procuring from foreign sources is less expensive).

**FIGURE G3.2-2 DELIVERING VALUE IN WARSHIP CONSTRUCTION**



Nations often seek to maintain in their industrial base key capabilities required for their national defence and security. Few, if any nation including the U.S., however, can develop and have access to a full 'cradle-to-grave' industry in every capability and technology domain. This requires that they identify which capabilities are essential to sustain in-country to both meet their national security and defence imperatives and for contributing to the nation's overall wealth and prosperity (and by extension those that can be acquired from foreign sources of supply). Factors taken in to account in this process generally encompass the following:

- **Strategic Assurance:** the capability is so important that the risk of obtaining it from a foreign source is not acceptable.
- **Defence Capability:** the capability will provide a decisive advantage over an adversary; will allow joint operations with militaries of other nations.
- **Strategic Influence:** having a world-class industrial base can translate into greater political, military and industrial influence with defence (e.g. stature in alliances) and trading partners (e.g. market access/exports, entry into collaborative programs).
- **Wider Economic Benefits:** the defence industrial base creates high skilled employment, generates technology innovation and the development and application of intellectual property, transfers defence technology to the commercial sector, and earns export revenues.

The policy stance of national governments in respect to their defence industries can vary in respect to the nature of the capability they wish to maintain. For example, the U.S., the U.K., France, Germany and Australia support their warship building through preferential purchasing (e.g., buy U.S., British, policies). They place a high valuation on retaining a sovereign industrial capability in naval ship construction whereas they are more willing to import other defence equipment e.g. aircraft, missiles, armaments. The U.K. and Australia caveat their national procurement preference for warships with the requirement that competition amongst domestic firms is possible.

National procurement policy for warships is often rationalized by a number of factors; some that are the same as for other defence equipment and some that are unique:

- **Reliability:** of support and spares, especially during conflict.
- **Availability of a suitable ship:** for example, the UK MoD contends that the Royal Navy's warships must be carefully matched to particular operational requirements and that the costs of modifying a foreign design to the U.K. needs would be similar or greater than the cost of commissioning a U.K. design.
- **Management of complex systems:** It is argued that the weapons integration task for a large platform like a warship is much greater than for any other weapons platform such as aircraft and land vehicles and this increases the cost of off-shore procurement.
- **Intellectual property:** confidentiality of intellectual property maintains a nation's military advantage.
- **Access to markets and a level playing field:** as part of strategic trade policy, it is common practice not to allow imports from another country unless reciprocal access to its market is allowed. This access does not exist where state-

ownership of naval constructors exists and/or where preferential national procurement policies are applied.

- **Short production runs:** it is argued that significant cost savings available from long production runs that can accrue from off-shore procurement of aircraft and land vehicle are not achievable for warships.

Regardless of the specific rationale presented such preference policies are justified in terms of national sovereignty, national pride and the economic spin-offs created. Also it might be the case that maintaining national sovereignty in warship construction remains 'affordable' compared such capabilities as combat aircraft.

Governments can choose to exert a positive influence on the structure and capabilities resident in their defence industrial bases at both a general level i.e. the overall attractiveness of the defence business environment, and at the specific level, to achieve defence outcomes in particular capabilities or technology domains. The levers can be grouped into 5 types:

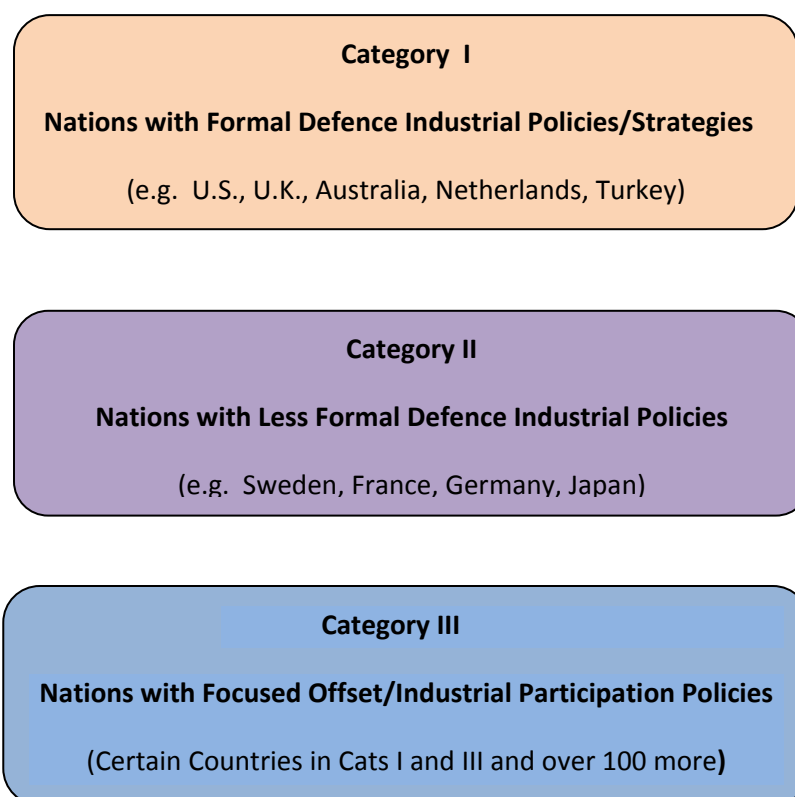
- **Government as Investor:** government investments in defence-related research and development while foremost directed at meeting military needs can also increase the level of innovation in the industrial base.
- **Government as Planner:** forward defence planning at both the strategic (capabilities) and the equipment program level can provide the domestic industry with an reference base for making business and investment decisions (when such planning is done jointly with industry, a high level of alignment of government (military) and business interests can be achieved).
- **Government as Customer:** the choice of acquisition models can influence the decision of suppliers whether or not to engage in the defence procurement process (e.g. the available profit margins, the ability to organize into consortia and at what stage in the procurement life-cycle).
- **Government as Supporter of Industry:** employing targeted programs and financial tools (e.g., helping companies to fund infrastructure and capital assets, investing in the R&D activities of companies, financing the training and development of employees, providing export credit guarantees) and activity-based measures (e.g. organizing and participating in trade promotion events, furthering industry participation in international collaborative programs).
- **Government as Regulator:** controlling ownership and access to IP, imposing/relaxing controls on industry's agility and profitability, controlling defence exports.

Governments can choose to use all, some or none of the levers available. Some levers act in a reinforcing manner such as guiding companies to direct their R&D effort toward certain capability/technology domains required for the nation's defence and general economic prosperity and subsequently helping fund their specific R&D undertakings. The policy orientation of a particular country is sometimes expressed through a formal 'defence industrial policy' and sometimes less formally through a range of behaviours (active or passive) reflecting a longstanding relationship with their defence industries.

### G3.3 COMPARATIVE COUNTRY REVIEW OF DEFENCE INDUSTRIAL POLICIES

This next section examines the policy orientations of selected countries towards their defence industries. The countries examined include those that have well articulated defence industry policies/strategies and those that have lesser stated policies in respect to their defence industrial bases. Most countries, whether having a formally stated defence industrial policy or not, employ the specific policy tool of 'Offsets', to gain economic benefits when they procure their defence equipment from foreign contractors (the Offsets policies of several countries are examined later in this paper).

**FIGURE G3.3-1 COUNTRY GROUPINGS BY DEFENCE POLICY ORIENTATION**





## United Kingdom

The U.K. Government's current policy orientation to the development and sustainment of its domestic defence industrial base is articulated in three linked documents:

- **Defence Industrial Policy** released in 2002, jointly by the Minister of Defence and the Minister of State for Employment Relations, Industry and the Regions. The DIP Policy explicitly recognises a 'thriving, innovative and competitive defence industry'<sup>xxi</sup> as being essential for the country's defence. Its stated objective is to enhance the competitiveness and sustainability of the U.K. defence industry, while continuing to provide high quality equipment for its armed forces at best value for money.
- **Defence Industrial Base Strategy** issued in 2005 by Defence Secretary, Trade and Commerce Secretary, Chief Secretary to the Treasury, Minister of Defence Procurement, and the Minister of State for Industry and the Regions. The aim of the DIS is to guide implementation of the DIP and the attainment of its objectives. It provides transparency on the UK's future defence requirements, and importantly, for the first time sets out those industrial capabilities needed 'in-country' to meet the nation's defence equipment and services needs.
- **Defence Technology Strategy** issued in 2006, by the Minister of Defence Procurement. The DTS sets out the Ministry of Defence's (MoD) research and development priorities for providing future military capability.

The issuance over these documents reflects a sustaining (overtime) and broadening (beyond just the MoD) commitment by the UK Government to support the development of its defence industrial base. Indeed, noteworthy in comparison to the *laissez-faire* approach of successive Canadian governments to the nation's defence industrial sector.

### **The UK's DIP**

The issuance of the DIP was stated to be a response to the restructuring of the global defence industry e.g. domination by a few key prime contractors, trend towards international programs, and the implications this has for the future of a 'national' defence industry. It was developed through input from the National Defence Industries Council<sup>xxii</sup> thus reflecting a close cooperation and consultation with the industry. Rather than standing alone, the DIP seeks to build on the U.K. Government's wider manufacturing strategy and its sectoral initiatives such as the Aerospace Innovation and Growth Team (closely resembles Canada's "Future Major Platforms Initiative" setting out a strategy and enabling action plan to promote the growth and competitiveness of its (civil) aerospace industry).

The DIP set out two key considerations to be taken into account in the procurement of defence equipment and services:

- **Operational Effectiveness and Cost:** whole-life cycle not just the immediate acquisitions cost (the DIP is not intended to dilute the primacy of this consideration).
- **Value for Money:** assessed over the longer term and broader than a specific procurement. In respect to the 'Value for Money' consideration, the DIP explicitly recognizes the positive impact that the industry has on: 1) increasing

employment and exports revenues<sup>xxiii</sup> ; and 2) accelerating the 'spin-off' from high levels of R&D to other industrial sectors.

*"We seek to maximize the economic benefit to the UK from our defence expenditure, a healthy and globally competitive defence industry and the development of a high value technologically-skilled industrial base, consistent with the Government's wider manufacturing strategy".*

The DIP Policy is intended to serve as a framework to guide decision-makers in addressing how best to address tensions between meeting its responsibility for providing the Armed Forces with high quality equipment and services and achieving best-value for taxpayers by securing economic and technological benefits to the country.

A cornerstone of the UK's DIB is adherence to the principle of 'program/project performance' - ensuring that quality equipment is developed, delivered and supported within time and price imperatives established for individual projects. It therefore sees not only the magnitude of the nation's defence expenditure as being important but also the efficient use of the available resources. Key factors that are to be taken into account in procurement decisions include:

- The cost and operational effectiveness of project options (including the time to get equipment delivered to the frontline).
- Whole-life costs and the evaluation of 'risk' including judgement of the capability of the supplier to manage both technological and commercial risk.
- Security of supply – ability to independently make equipment modifications in response to urgent operational requirements.
- Enhancing the nation's science base through development of key technologies for both defence and commercial application.
- Increasing defence exports.
- Affordability.
- Long-term value for money.
- Support for developing/retaining in the domestic industrial base those key capabilities deemed important for both national security and for the high value they bring to the economy.

The UK's DIP seeks to have the above factors considered early in the defence/ procurement planning stage by relevant government stakeholders including communicating with the domestic industry.

*"It is a willingness to carry out proper assessments of wider national objectives*

*early in a projects life that allows us to maintain a robust long-term acquisitions programme, to ensure that our approach is coherent, and to deliver both equipment capability for the Armed Forces and long-term economic and wider benefits for the UK".*

Meeting the UK's defence procurement needs through competition is the favoured strategy of the DIP for delivering 'value for money' from defence spending. Importantly however, it also recognizes that competition is not simply acquiring the goods or

equipment at lowest cost from the global marketplace and that competition not be carried on the point beyond which long-term advantage can be gained.

*“Although competition remains the MoD’s principle method of acquisition, there are occasions when this may not be able to deliver the best long-term value for money or sustain key UK defence industrial capabilities”.*

‘Best –value’ is seen to encompass: the performance of the equipment/services; the life-cycle sustainability and support costs; and wider economic and national security factors. Where such wider interests influence the selection of a procurement strategy for an individual project, the DIP calls for these to be declared and explained to industry. For example, whether it will require contractors selected through a non-competitive procurement process to utilize competition in selecting sub-contractors to achieve best value and/or to retain/develop key industrial capabilities in the lower-tier supplier base.

The DIP recognizes that R&D of defence-related technologies can have a profound influence on the development of a wide range of civil capabilities and foster a technological base which can be exploited in the future.

*“The UK defence industrial base has been in the past a productive and innovative stimulator of many civil applications. Defence (industrial sector) is often prepared to take higher risk than the civil sector in new or emerging technologies because of their potential to provide a significant capability advantage. Continued investment by the Government in certain defence technology areas could be necessary to help enable further opportunities in the civil sector. We recognize that this is not always a direct requirement for operational sovereignty, but is an important consideration in ensuring that our policy is consistent with broader Government policy on promoting innovation”.*

It also recognizes however, that that the Government cannot adequately fund R&D across a broad spectrum of technologies<sup>xxiv</sup>. The DIB Policy seeks to develop a consensus between the Government and the industry on where its R&D investments should be targeted to both met critical military requirements, enhance employee skills sets and to help companies compete globally from a position of strength.

Identifying which technologies themes should be the focus of investment is guided by the National Defence and Aerospace Systems Panel (NDASP) that reports to both the MoD (via the National Defence Industries Council) and the Department of Trade and Investment (Aerospace Committee). The NDASP acts as a forum to bring together the voices of government, industry (individual companies/industry associations), academia, and others to debate issues of importance to the defence and aerospace sectors and to evergreen a defence Technology Strategy. The NDASP encompasses two paths: 1) Defence Aerospace and Research Partnerships; and 2) National Advisory Committees. The DARPs are industry-led university-based partnerships that focus on important areas of research e.g., rotorcraft, advanced metallic airframes, analysis and design of composite aerostructures. The NACs bring together U.K. experts and act as the UK’s advisory body in areas that include aerodynamics, materials and structures, systems engineering, and synthetic environments.

The MoD established two programs to support the policy of technology partnering with industry and to facilitate the pull-through of particular technologies into defence equipment.

- Towers of Excellence: at a system or major sub-system level to improve the technical excellence of both the MoD and companies in high priority areas.
- Defence Technology Centres: collaborative arrangements between industrial and academic experts, and jointly funded by the participants and the MoD, to generate and exploit ground-breaking technologies.

### **The UK's Defence Industrial Strategy**

The DIS builds on the DIP by: a) setting out those industrial capabilities required in-country (while recognizing other capabilities will be sought through international collaboration and competition); and b) explaining more clearly, the factors that will influence procurement decisions. Its aim is to retain in the U.K. those industrial capabilities (infrastructure, skills, knowledge (IP and capacity) needed to ensure appropriate sovereignty.

The DIB Strategy has three interlinked components:

- A strategic context of the defence capability requirements going forward e.g. new projects, upgrade and modifications to existing equipment) that it seeks to retain in-country.
- A review of different industrial sectors and cross-cutting capabilities (from the context of future needs, including how mismatches between the two can be filled).
- An outline of how the DIS will be implemented (i.e., the principles and processes that underpin procurement and industrial decisions) and the implications for the MoD and industry as a whole.

Mirroring the DIP, the DIS seeks to achieve long-term value for money from U.K. defence procurement spending. While it states that this is often achieved through open international competition, it recognizes that:

*“The selection of acquisition models may also have significant influence. The traditional approach in the UK has tended towards tight definition of the scope of work, the use of competition to select suppliers, negotiation targeted at reducing our risk and cost, and then a transactional approach to the management of the contract, holding suppliers to account against agreed milestones. More recently, we have recognized that a ‘one-size-fits-all’ approach to engagement with our key suppliers is not optimal and have deployed a wider range of supply models. The principles of partnering are now in general well understood and deployed successfully in some areas to provide mutual benefits to us and our suppliers. In the Defence Procurement Agency, several new contractual models are being deployed on significant programmes including the use of (in-country) alliances and lead systems integrators”.*

By such an explicit statement, the DIS can be seen to run counter to the mantra of that competition is always needed to ensure the attainment of ‘best-value-for-money’ that guided U.K. defence procurement in the 1990s under its Smart Acquisition Initiative and that also appears to remain doctrine in the conduct of Canadian defence procurement.

*“We also recognize the need to improve the earned profit margins available to industry based on good performance if we are to attract global investment capital into the UK defence industry”.*

The DIB Strategy was developed and is implemented through the following process:

- MoD staff, in consultation with other Government departments develop a Defence Strategic Guidance (DSG) document establishing key planning parameters and priorities for resource allocation and ‘capabilities need’ over 15 years) for approval by the Secretary of State for Defence.
- The DSG is considered in bi-annual Government spending reviews that set the MoD’s budget.
- The defence budget then gets translated into a funded Defence Program that comprises two components: a) the Short Term Plan (STP); and b) the Equipment Plan. The STP covers a period of 4 years and sets out the running costs of the MoD and areas of capital investment. In the context of the DIS, the STP sets the budget for Science, Innovation and Technology and for the support of equipment already in service. The EP covers a 10 year period and sets out the MoD’s spending plans for new equipment. The actual procurement of the equipment is carried out by the Defence Procurement Agency. The Defence Program is reviewed every two-years.

The National Defence Industries Council is charged with monitoring joint Government/industry progress in implementing the DIB Strategy.

### ***The UK’s Defence Technology Strategy***

With an annual spend of approximately £2.6 billion (8% of the Defence budget), the MoD is one of the largest Government investors in R&D<sup>xxv</sup>. The aim of the DTS is to encourage innovation in support of the U.K. defence forces. It identifies those technology needs of national interest (both defence-related and national competitiveness) that ideally should be developed in-country; those that can be met through international collaboration; and those that can be met through sourcing in the global market. The DTS was developed in close collaboration with industry<sup>xxvi</sup> and academia and is released as an unclassified document (except for a few classified sections) thus permitting transparency to those outside the Government.

On releasing the DTS, the Minister for Defence Procurement stated:

*“This strategy will help the MoD and Industry plan future investment in research and development. In particular, it allows us to identify clear R&D priorities, including*

*those in areas which we believe it is important to maintain sovereign control, highlight opportunities for collaboration, and provide long-term support to the UK’s science and technology skill base.”*

The DTS is structured into three parts:

- Strategic Context: outlines aspects of Defence policy and strategy where R&D programs are viewed as vital to keep the UK’s military technologically superior to the threats it faces.
- Technology Areas: details and prioritizes individual technology areas that should be developed in the domestic industrial base or where the MoD needs to have an understanding e.g. to understand or defend against threats, to by a smart acquirer of foreign technology).

- Implementation: addresses how the MoD will work with industry, academia and other stakeholders to implement the DTS.

The second section of the DTS is perhaps the most important to U.K. industry and academia as it lays out the science and technology areas that will attract the highest portion of the MoD's investment funding. These are:

- Cross-cutting Technologies;
- Command, Control, Communications; Computers; C4ISTAR;
- Close Combat & Support;
- Chemical, Biological and Radiological & Nuclear;
- Counter Terrorism;
- Complex Weapons;
- General Munitions & Emerging Technologies; and
- Fixed Wing & Unmanned Aerial Vehicles, Maritime; Emerging Technologies.

Beyond, the objective of generating 'state-of-the-art' capabilities for the UK's Armed Forces, the DTS reflects the government's recognition that innovation and technology have been key drivers of national productivity and wealth. From this context, it seeks to:

- Develop an improved approach to technology insertion;
- Identify national sources of innovation;
- Improve the pull-through of technology;
- Improve the science and technology base (within the defence realm);
- Increase investment in systems engineering; and
- Better understand the technologies that the U.K. must have for security and sovereignty reasons.

The DTS also reflects increased sharing of information and engagement between the MoD and industry through the life-cycle management of its major systems.

In February 2009, the U.K. MoD published a *Defence Technology Plan* that relates both currently-funded programs and future projects for which companies can apply for R&D funding support. The DTP identifies five major areas: Capability Visions; Electronics Defeat; Future Protected Vehicle; Novel Air Concept; Reducing Operational Dependency on Fossil Fuels; and, Reducing the Burden on the Dismounted Soldier. Three of these areas relate to land system with a particular stress on the Future Protected Vehicle. Dramatic advances are sought in the ability to suppress enemy forces, lightweight protection (including armour), defensive systems, and adaptive camouflage. The Technology Demonstrator component comprises three sub-projects: the Lethality Study; Prototype Vehicle; and Signature Reduction. The aim of the first is to produce a vehicle that is deployable by air and comprises an unmanned turret with a 360 degree field of view. The second concerns the development of a prototype for an entirely electric vehicle with the same fire power and protection of a main battle tank. The third relates to the vehicle signature in the infrared, radiofrequency, acoustic and optical spectrums, and to camouflage and electronics measures. The DTP includes a general chapter on vehicles for mounted close combat with a steadily increasing R&D budget rising to 21.5

EUR in 2010. The DTS is a good indicator of the MoD playing a lead role in maintaining the domestic technology and industrial base to meet its land vehicle requirements. Importantly, it helps U.K. companies to position on future tenders.

In the mid-1980s, the U.K. Government decided to divest itself from the shipbuilding business and began to privatise its naval shipyards. Coincidentally, this period also corresponded to the time when naval ship orders began to decline. At the start of the privatization, the naval shipyards were, for the most part, profitable. Soon after the privatization was completed in the late 1990's, these shipyards began to struggle for survival. There were too many shipyards chasing too few programs. The intense competition that ensued during this period was driven by the MoD's policy of competing defence work as a matter of policy. It led to very low bids from firms that were desperate to gain work. In fact some have speculated that bids were, on occasion, below cost<sup>xxvii</sup>. Although the situation likely led to better prices for the MoD, it left the shipyards in a vulnerable state. There was little investment, modernization or upgrades in the shipyards during this period.

Despite occasional Government intervention into the competitive process<sup>xxviii</sup>, the Cammel Laird, Appledore, and Swan Hunter shipyards all went into receivership between 1990 and 2004 (Swan Hunter later reopened and became the lead shipyard for the Landing Ship Dock (A) Class project). After decades of consolidation and bankruptcy in the U.K. shipbuilding industry, only three major firms are currently involved in building ships for the MoD: BAE Systems; Swan Hunter; and VT Shipbuilding. In addition, there are three firms primarily involved in the maintenance and repair of warships: Babcock Engineering; Devonport Management; and Fleet Support. This degradation in the UK's shipbuilding capacity reached its peak just as several new naval construction programs were ready to move forward (i.e. Astute Class Submarines, Type 45 Destroyers. Military Afloat Reach and Sustainability (MARS), Future Aircraft Carrier (CVF), Future Surface Combatant (FSC), and Joint Casualty Treatment Ship (JCTS).

The degradation of the UK's shipbuilding capacity and confluence of several new shipbuilding programs raised concern on the MoD's part that the new builds could overburden the industry. Its response was to take a strategic look at the shipbuilding industry over the next 15 years to determine where there might be capacity limitations and if so, what policy options are open to the Government to remedy the situation. The review was limited to the capacity of the U.K. industry to meet the MoD's demands, in line with the Defence Industrial Policy and Defence Industrial Strategy. The review was carried out with the assistance of the RAND Corporation.

The review focused on a number of questions for Government policy-makers:

- Is the MoD shipbuilding plan feasible given the constraints of the industrial base (is the supplier base robust enough to meet the demand)?
- What is the program's effect on the shipbuilders and ship repairers?
- Are there alternative timings for projects that make the program more robust?

To analyse these issues, the review decomposed the capacity evaluation into a 'supply and demand' assessment in three distinct areas: labour, facilities and suppliers. Although each area is, to a certain extent, independent, each area is connected to the overall naval ship construction program. If one area has insufficient capacity, the program becomes problematic with insufficient capacity resulting in delays and cost increases.

The key finding of the review is the importance of having a comprehensive, long-term MoD shipbuilding strategy and plan: to define its future shipbuilding goals and courses of action; to establish a schedule or roadmap to meet its plans; and, to highlight such areas of required future investment (facilities, workforce). Additionally, such a long-term strategy is seen as helping the MoD better understand the financial implications of its acquisition strategy and to anticipate problems by allowing the MoD to independently assess shipyard demand and this in turn will result in reduced cost and schedule risk through greater program certainty. The review recommended that the MoD should:

- **Attempt to smooth or ‘level-load’, the production and design demands it places on the industrial base:** Several factors impact this loading, such as total force size, the duration of design/build, and expected time in service of each class of ship/platform. The benefits include better workforce and facilities use, more stable financial costs, and a greater ability for the industry to make long-term investments decisions.
- **Re-evaluate its Competition Policy:** In order to best use the industrial base, competition should not always be the default option; in some cases, it may be in the MoD’s interest to allocate work for certain types of warships. This however does not negate the need to obtain value for money in procurement, and the MoD needs to work closely with industry to ensure that this is achieved. While competition will be the most remain viable option in most cases, it is only one factor in the long-term value for money consideration.
- **Work more closely with industry than previously, in order to understand factors impacting its plans:** This may require the MoD to supply industry with more information regarding long-range plans, future budgets, and procurement options. In turn, this will reduce risk in the MoD’s shipbuilding plans by providing the Government with a greater understanding and certainty regarding industrial capacity and will encourage shipyards to act in complimentary fashion and give the MoD procurements options which result in greater industrial efficiencies.



## Australia

In the 1960s and 1970s domestic industry participation in Australian defence programs was achieved through a regime of rigid 'local industry' participation targets and offsets provisions that compelled foreign suppliers to direct work locally. Over the past two decades successive Australian Governments have taken a progressively less mechanical approach. By the mid-1990s, a more focussed, yet flexible, *Australian Industry Involvement (All) Program* was adopted. While the All Program continued to set targets for Australian industry participation in the country's defence programs on the basis of individual projects, it also embodied a more qualitative dimension that targeted priority industry areas.

The *1998 Defence and Industry Strategic Policy Statement* issued by the Minister for Defence Industry Science and Personnel laid the foundations of the Government's current defence industrial policy by setting out a vision for a sustainable 'in-country' defence industry that can support a technologically advanced Australian Defence Force (ADF). Inherent in it was a belief (perhaps a weakness that is also evident in respect to the Canadian Government's positioning in regards its defence industrial base) that the domestic defence industry would always be there to meet the country's defence needs. It did not set out any direct Government measures to help the industry confront a number of pressures stemming from the globalization of the defence industry, and in particular the dominant role played by the U.S., and the growing technical complexity and cost of weapons systems. In recognition of this limitation, the Government (Defence Minister) issued a more robust *Defence and Industrial Policy Statement in 2007*.

### **2007 Defence and Industrial Policy Statement**

The primary goal of the 2007 DIPS is to ensure the cost-effective delivery of equipment and support to the ADF in line with Australia's strategic circumstances. This goal is to be achieved through nine strategies:

- A strategic approach to equipping and sustaining the ADF;
- Maintaining priority local industry capabilities;
- Securing value for money through best practice procurement;
- Creating opportunities for Australian firms;
- Encouraging small and medium enterprises;
- Supporting development of skills in the defence industry;
- Facilitating exports;
- Driving innovation in defence technology; and
- The MoD and industry working together.

Implicit in the above goals is a recognition that the Australian Government's policy for its defence industry does not stand in isolation. The 2007 DIPS, like the UK's DIP/DIS, is a key component of the Government's broader approach to Australian industry that seeks sustainable prosperity for the nation.

To a large degree, the 2007 DIPS can be seen as a response by the Australian Government to significant developments impacting on its defence and foreign policy, the ADF, and the Australian defence industry, including:

- The high operational tempo of the ADF (and new demands for industry in supporting it);
- The Government's decision to increase substantially its defence spending and the size of the ADF<sup>xxix</sup>;
- The adoption of innovative approaches to conducting defence procurement (an important element being to engage industry at an earlier stage in the process); and
- The re-shaping of the global defence industry and the changing ways which nations are equipping their armed forces.

It sets out:

- A strategic Government/industry partnership approach to identifying and sustaining the priority areas of industry capability that Australia's particular circumstances demand be accessible in-country;
- The operating environment and 'rules' that are to govern how MoD will procure a full range of goods and services from industry (both domestic and foreign);
- How the MoD will deliver 'value-for-money' through its procurement system; and
- Expectations that prime contractors (both domestic and foreign) receiving Australian defence contracts are to utilize Australian companies (emphasis on SMEs) in their supply chains.

The DIPS directs the MoD to take into account sustaining local industrial capabilities in its Program – the defence procurement program being viewed as the most concrete tool to shape the future of Australia's defence industrial base. It sees this being done by:

- Specifying those particular activities that must be done in-country e.g. the vast bulk of platform and weapons systems maintenance;
- Ensuring that suppliers of foreign-sourced technology deemed essential to Australia's defence transfer appropriate intellectual property to the domestic industry; and
- Rescheduling demand, bundling projects and using restrictive or sole-sourcing where necessary to sustain the priority industrial capability.

The DIPS confirms that competition remains the preferred approach to procuring goods and services, including for the areas identified as a priority local industry capability. However, similar to the UK's DIP/DIS, it acknowledges that it will sometimes be either impractical or inappropriate to procure through competition. It does not however, set generic rules on how and when different contracting methods are to be used.

Importantly, the 2007 DIPS addresses the major weakness of the 1998 DIPS by identifying a series of measures by which the Government will work with the domestic industry to develop and sustain priority capabilities. Individual measures include leveraging defence purchases of foreign equipment to open up export opportunities for Australian companies to participate in global supply chains, assisting local industry to grow skills and capabilities, and encouraging investment in research and development of

innovative technologies. Furthermore, it describes the process for measuring and reporting performance against its broad goals and the success of the individual measures introduced. Major initiatives under the 2007 DISP include:

- **Australian Industry Capabilities Plan:** bidders on major Australian defence contracts are now required provide a proposed AIC Plan detailing how they examined, assessed and are proposing cost-effective Australian industry, participation.
- **Defence Industry Self-Reliance Plan:** will be developed every two years in support of the 'Defence Capability Plan' (the ADF's long-term capital investment plan). The DISP will identify those industrial capabilities that confer an essential national security and strategic advantage by being developed and accessible in-country. A public version of the DISP is to be developed to inform industry and other stakeholders on future individual projects as well as support demands of existing ADF capabilities and where necessary make adjustments to the structure and timing of its purchases of equipment and sustainment activities e.g. rescheduling demand, sole-sourcing/directing contracts to sustain a baseline level of the required industrial capabilities. The MoD is required to report to the Government on the health and sustainability of the priority in-country industrial capabilities every year through a 'Priority Local Industry Capabilities Report'.
- **Improved Communications with Industry:** initiation of an annual program of Defence and industry roundtables and a re-constituted ministerial-level Defence Industry Advisory Council that is to meet annually.
- **Procurement Improvement Program (PIP):** the aim is to bring Defence procurement and contracting policy and procedures into line with commercial best practices.
- **Joint Defence Research Venture:** modelled after the Government's Cooperative Research Centres and Flagship Collaboration Fund, the program will be run for 5-years on a competitive basis to leverage the expertise of MoD's Defence Science and Technology Organization, other government research entities, industry and universities.

Other supporting measures adopted include creating a Defence Export Unit within the MoD to reinforce a 'whole of-government' approach to facilitating defence exports from Australia and the 'Skilling Australia Defence Industry (SADI) Program' to ensure that the defence industry has access to a sufficient pool of highly trained workers (0.5% of planned spending on defence capital projects is to be allocated to the SADI amounting to \$215 million over 10 years).

The Naval Shipbuilding and Repair (NSR) sector is a key element of Australia's defence industry base in relation to the construction, maintenance, repair and upgrade of its surface ships and submarines. The Government has indicated that a continued in-country capability to perform these functions is critical to achieving the country's self-reliance imperative. The Defence Material Organization (DMO) noted in its NSR Sector Plan released in 2004<sup>xxx</sup> that the Australian naval shipbuilding and repair sector is of strategic importance, as self-reliance cannot be assured unless the capabilities exist in Australian industry to maintain, modify, upgrade and repair the country's warships.

*"as the facilities, equipment and skills needed to build new warships could be vitally important if our strategic circumstances were to deteriorate, these are important long-term assets".*

The NSR Sector Plan was developed to help sustain an industry base at best overall value at a level that can deliver the required capabilities to the ADF.

While not the case in every situation, the construction of major warships in Australia is generally accepted as being more expensive than procuring from foreign shipyards due to the restricted economies of producing a few ships for domestic use. The NSR Sector Plan, in its holistic approach, recognizes however that the cost of construction is only one factor in making appropriate decisions on where to build Australia's warships.

*“Options of future major naval ships need to be considered in terms of their relative merits in delivering capability, as well as leveraging the maximum benefits for the investment made. This may be measured in terms of sustaining critical skills and capabilities, reducing the cost of through life-support and achieving best value for money”.*

One factor cited for in-country construction is that it lowers the cost of repairing, maintaining and refitting warships throughout their life-cycles. Another factor is the indirect economic impacts of building warships in-country. Modelling on the ANZAC frigate program suggests that the A\$5.6 billion construction program generated between \$3 and \$7.5 billion in additional GDP. Perceived benefits not captured by the modelling include the contribution to innovation and technology advancement and improved productivity throughout the NSR sector and its supply chain that draws from several other sectors.

To maximize the involvement of Australian industry in future naval projects such as large amphibious ships and a frigate replacement programs, the NSR Sector plan addresses two critical pressures touching on the sustainment of in-country construction, maintenance, repair and refit capabilities: 1) smoothing the MoD's demand on industry; and 2) consolidating expertise within the industry.

*“The NSR Sector more than any other Defence industry sector exemplifies the problems associated with Defence's project-by-project approach to acquisition and the ineffective application of Defence's industry policy framework. Over the past 15 years, Navy's six major projects have been awarded to five different companies at five different locations. Consequently, key capabilities and skills sets created within these companies, which are critical to the effective whole-of-life-support of Navy's ships and submarines are not being sustained once the projects come to an end. The \$12 billion invested in the sector over that period and the resultant stimulation by these major naval construction projects, has energised and created a number of key industry capabilities. However, as major projects wind down and Defence's demand decreases, the lack of any long-term planning and/or strategic sustainment strategy has resulted in a situation where Australia is at serious risk of losing critical industry capabilities”.*

The NSR Sector Plan indicates that there is substantial scope for reducing the industry's (and hence the MoD's) costs through modest modification to the MoD's pattern of demand. The current project-by-project tendering approach is seen as leaving the industry in a fragile state and struggling to respond to changing strategic circumstances. While tenders for individual projects seek to identify the most efficient option for that particular project, the range of options is limited to the capability at the time, and gives no weight to how potential for greater efficiency might be achieved over a longer period. A project-by-project approach is viewed in the NSR Sector Plan as likely resulting in

unused capacity eroding in the short term; only to be needed again in the future should demand increase. This shrinking/expansion approach is seen to compromise the ability to lock in capability, capacity and productivity on an ongoing basis. The DMO has written that:

*“Navy’s future construction demand would ideally be managed in such as a way that it contributes to sustainable NSR Sector. Changes could be made to the capability planning process, construction strategies and financing arrangements that would help to smooth demand, and give the NSR Sector improved prospects of sustaining its capabilities and skills”.*

Varying the length of ships’ in-service lives is also discussed in the NSR Sector Plan. The DMO’s analysis indicates the current strategy of replacing naval ships only after their designed hull lives have expired (about 30 years) delivers the worst annualized value and that replacement after 20 years would achieve optimal annuity value – largely dispensing with the need for expensive mid-life upgrades, and imposing a more regular regime of systems upgrades<sup>xxxi</sup>. Moving to shorter in-service life is seen to allow for more continuous build and replacement cycles and a net cost/capability benefit for the ADF.

In the past, Australia’s open domestic competition philosophy has allowed any competent firm to bid for naval shipbuilding work and precluded the MoD from putting significant weight on long-term industry development factors in awarding individual contracts. Project-by-project tendering is aimed at achieving allocative efficiency only, which is getting best value from the resources available at the time. It gives no weight to dynamic efficiency, which is about how the industry develops over time to provide better value in the long term. The NSR Sector Plan recognizes that piecemeal competition can be harmful if it fragments industry capability. It called for creating one single shipyard that would have a monopoly over all future work, but with a high level of subcontracting to engage competitive pressure. The premise was simple - there wasn’t enough work to support more than one prime contractor, so the Government needed to intervene and rationalize the industry to protect its national security interests. The Government however chose not to accept and act on this particular recommendation of the NSR Sector Plan (it having potentially significant political opposition from those States (and their stakeholders and populations) have significant shipbuilding and repair entities.

## Netherlands

In the mid-2000 period, the Dutch Government concluded that consolidation of the global defence industry coupled with the cautious evolution towards a more open international defence market called for changes in its policy towards its defence industry.

### **2007 Defence Industry Strategy**

In late 2007, the Ministers of Economic Affairs and Defence jointly issued a *Defence Industry Strategy* setting out a strategic vision for the country's defence-related industry and the Government's role in its sustainment and development. The DIS is linked to the Government's overall national policy in respect to the objectives of Pillar II – 'An Innovative, Competitive and Enterprising Economy' and Pillar V – 'Security, Stability and Respect'.

*"the DIS is a response to...Parliamentary Paper 30 800 X 32, requesting integration between the technological policy of the Ministry of Defence and the innovation policy of the Ministry of Economic Affairs".*

Similar to the defence industrial policies of the U.K. and Australia, the DIS is premised on a recognition of the importance to the nation of having a capable domestic defence industry.

*"A healthy, innovative Dutch Defence Technology and Industrial Base (DTIB) is of great value in achieving the ambition and fulfilling the consequent requirement of the Ministry of Defence. Furthermore, the participation of Dutch industry in the development, production, and maintenance of defence equipment is an activity that fits with a high value, knowledge-based economy, partly due to the spin-offs for the commercial market".*

The DIS assigns responsibility to the two-lead Ministries to work in a coordinated manner to position the Dutch defence industry, given that an outstanding national industry is an important base for both the MoD as a smart buyer, smart user and smart maintainer of equipment and for an innovative national economy. To this end, the Ministry of Economic Affairs is to develop and apply tools (investments) to promote innovation while the MoD is to involve industry throughout the procurement process.

*"The Defence Industry Strategy makes clear that the existing policy instruments of the Ministries of Defence and Economic Affairs can reinforce each other in improving the position of the Dutch DRI (Defence-Related Industry). Moreover, improved communication and exchange of information make it more attractive for the Dutch DRI to invest in the requirement of the MoD. In turn, this offers opportunities for integration with the instruments available to the Ministry of Economic Affairs".*

The DIS was developed with direct industry input. It recognizes that to achieve and maintain a position in the international defence market is primarily the industry's own responsibility but it underscores that the Government will play an active role in shaping its future. It is predicated on the assumption that its defence industry can only be successful if companies form part of international networks focussing on the development, production and maintenance of equipment – supply chains.

The DIS seeks to harness international opportunities and to promote synergy between the needs of the Dutch Armed Forces and those in the civil market due to the relatively small size of the Dutch defence industry. From this context, the DIS proposes fields of technology where it is considered that the Dutch industry has the capability to excel and consolidate its position in the global (primarily European) defence market. The six priority technology areas in the Dutch DIS are:

- C4I (command, control, communications, computers and intelligence);
- Sensor systems;
- Integrated platform design, development and production;
- Electronics and ‘mechatronics’;
- Advanced Materials; and
- Simulation, training and synthetic environments.

*“It is in these fields that the Netherlands defence-related industry has a strong position and the best opportunities on the international market. The industry should capitalize on these strong points and opportunities (supply chains) for the development, production and sustainment of defence equipment that will be leading in the future”.*

The DIS confirms the intent of the Dutch Government to play an active supporting role in these fields of technology.

*“Research and technology fall outside the scope of the EDA (European Defence Agency) code of conduct. This means that, in principle, financial instruments for the promotion of innovation can be used to reinforce national positions. If the government subsequently places an order for production, this can be viewed in certain cases as a “follow-up contract”.*

The most important financial instrument is the ‘National Technology Project (NTP) under which proposals can be submitted by one or more research institutes, by industry, or by both. In principle, the NTP covers 100% of the cost incurred to carry out the technology development. The most important criteria for evaluating proposals are compatibility with defence requirements and the degree of innovation.

The DIS also accords the MoD an important role in acting as ‘lead customer’ for specific new technologies. In doing so, it recognizes the need for it to take part in multinational development and production programs from their earliest start phase as is the case of participation in the Joint Strike Fighter Program. Through the DIS, the Dutch Government has also confirmed that it will look to play an active role in promoting a ‘level playing field’ in the international defence market.

In the requirements conception and definition stage, the DIS calls on strengthening the existing cooperation between the military, research institutions and industry. Specific defence R&D-related projects are carried out by the National Defence Research Organization and its three laboratories: 1) Physics and Electronics laboratory specializes in operations research, information technology, radar and communications and acoustic; 2) The Prins Maurits Laboratory specializes in technology research such as propulsion, ammunition functioning and explosives; 3) Institute for Perception conducts research in vision/thermal physiological, hearing and speech, experimental psychology and human engineering. The Dutch Navy has established the Marine Elektronisch en Optisch Bedrijf to keep abreast of the high technology necessary for modern navies. In 2007,

the Ministry of Economic Affairs announced a research, development and innovation subsidy for the shipbuilding sector – allocating 20M EUR annually over 3-years.

In December 2007, the Netherlands' Defence Materiel Organisation (DMO) and Schelde Naval Shipbuilding signed a contract for the supply of four Patrol Vessels. The contract has a value of 240 million EUR. The four Patrol Vessels will be built for the Royal Netherlands Navy, and are to be delivered in a time-frame between November 2010 and November 2012. The first two vessels will be built at Schelde's premises in Vlissingen, whereas the construction of the third and fourth vessel will largely take place at Damen Shipyard Galatz under supervision of Schelde Naval Shipbuilding. The contract marks the ongoing, intensive relation between the Royal Netherlands Navy and Schelde Naval Shipbuilding over many decades. It positions Schelde Naval Shipbuilding in the export market for naval patrol vessels, fast-attack craft and corvettes; it winning a follow-on order with Indonesia.

A program was launched by the Ministries of Economic, Affairs, Defence, Justice and Interior to promote the development of security-related technologies that have very good potential of further improving the technological and market capabilities of the Netherlands defence and security industry.

The DIS technology orientation reflects the Government's view that while the Dutch industry may lack the range and depth of industrial resources necessary to develop and produce major weapons systems other than naval ships, it possesses the requisite skills and expertise to be a strong participant in a wide variety of international programs from their development to their life-cycle maintenance. In some cases this includes final assembly and testing of major weapons systems that it procures. An example is the F-16 co-production program where Fokker does the final assembly and testing of the F-16 A/B and sub-assemblies and components and produces the centre section of the F 16 C/D for shipment to the U.S.



## Turkey

In the 1980s, the Turkish Government set out to modernize its Armed Forces and to establish a national defence industry that possesses contemporary technology. *Law 3238* enacted in 1985, established the principles of its defence industry policy.

- To make maximum use of Turkey's existing industrial capabilities and potential in meeting the modern defence equipment requirements of the country's Armed Forces (to the extent technologically feasible and economic);
- To provide direction and assistance for new technology-related investments;
- To incorporate foreign technologies and encourage foreign capital investment capital into the domestic industry; and
- To encourage indigenous research and development.

The Undersecretariat of Defence Industries (SSM) has responsibility for promoting the use of domestic suppliers in meeting Turkey's defence equipment needs to the extent determined to be technically and economically feasible. Administrative mechanisms established to support the SSM's role include:

- **Defence Industry Executive Committee:** the main decision-making body, the DIEC is headed by the Prime Minister with participation by the Minister of Defence and the Chief of the General Staff and is tasked with critical decisions relating to defence industrial issues and specific major defence procurement projects.
- **Undersecretariat for Defence Industries (SSM):** is tasked with giving effect to the decisions of the DIEC. To accomplish this, it was made a special legal entity with its own budgetary resources. Its role is to:
  - o Reorganize Turkey's defence industry in line with the prerequisites of a domestic defence industry able to support the nation's Armed Forces;
  - o Plan and issue defence procurement contracts;
  - o Support industry R&D through the financing of prototypes, making advance payments and determining other financial and economic supports; and
  - o Coordinate the export of Turkish defence equipment and manage the 'offsets' program related to defence equipment procured from foreign suppliers.
- **The Defence Industry Support Fund:** a purpose built financial instrument to aid the defence industry's restructuring.

Law 3238 was built upon by the Council of Ministers Decree on 'Defence Industry Policy and Strategy Principles' issued in 1998. The Policy envisages the formulation of a defence industry infrastructure which:

- Is open to both domestic and foreign companies;
- Has export potential and is competitive in international defence markets;
- Can produce new technology and has a dynamic structure;
- Has dual-use design and manufacture capabilities; and

- Has established mutually beneficial government/industry cooperation.

Turkey's DIP, like those of Australia and the Netherlands, attaches importance to international cooperation as a means to support its domestic defence industry; its participation in the European A400M program and the US-led JSF program being recent illustrations. It is though building independent national capability in areas such as armoured vehicles e.g., the Altay main battle tank.

## Sweden

Sweden does not have a formally stated policy related to the sustainment and development of its defence industrial base. Successive parliamentary spending Bills on Defence and Security however have referenced the importance of maintaining industrial capability in support of foreign, defence and trade policy.

To a large extent, Sweden's policy orientation in respect to its defence industry is subsumed in its overall innovation policy, and a more tailored policy specific to its aerospace industry for which defence products are the major output.

*“The importance of the Gripen system cannot be underestimated. It will be the backbone of the Swedish air force for many years to come. Due to its size, advanced technology and continuing export potential, the Gripen is currently the main driving force of the aviation industry.”<sup>xxxii</sup>*

In 2004, the Swedish Government appointed a working group to develop a vision and strategy for the long term future growth of the Swedish aerospace (defence) industry. This initiative was linked to Sweden's overall innovation strategy<sup>xxxiii</sup> that was launched jointly by the Minister for Trade and Industry and the Minister for Education and Research. The working group developed a consensus on the future challenges and opportunities facing the aerospace industry sector.

*“The group addressed aviation and space issues in a single context, An approach seldom adopted in Sweden, but is much more common at the international level”.*

The working group included representative of the Ministries of Trade and Industry, Employment and Communications, Foreign Affairs, Defence (Defence Material Administration, Defence Research Agency, and the Armed Forces), the Swedish Government agency for innovation systems (Vinnova), and the National Space Board. It closely consulted with representatives of the domestic aerospace industry and institutions of higher education. It presented to the Government a vision for the Swedish aerospace (defence) industry and a strategic program of enabling actions by companies, research institutions and the Government to realize the vision.

*“Sweden's internationally competitive aerospace industry is one of the driving forces for Sweden's growth and its position as a high technology sector and the industry exploits synergies between civil and military applications in interaction with research and government”.*

In response to the working group's submission, the Swedish Government adopted a comprehensive strategy to guide actions directed at the technological leadership and international competitiveness of its aerospace industry – *‘The Aerospace Industry – an Integral part of Innovation’*. The strategy issued by the Minister of Industry and Trade particularly recognized the important link between research and development and industry competitiveness and performance.

*“Implementation of the strategy programme is crucial to the future of the Swedish aerospace industry. If the efforts to create favourable conditions strength-enhancing projects are insufficient, the scope and breath of industrial activities will be reduced and it will not be possible to maintain*

*the innovation systems, leading to both short and long term decline in research and export opportunities”.*

The enabling strategy consists of six areas, several in which the defence industry sector is highlighted.

- **Measures to Develop a Nationally Integrated Approach to the Aerospace Sector:** regular meetings between relevant Ministries and industry representatives to monitor the implementation of the action plan and *to assess the impact on industrial policy of the Armed Forces’ equipment, research and technology planning.*
- **Measures to Develop the Interaction between Government, the Industry and Research:** development of a strategy and action plan for increased Swedish participation in civil aviation, space and security research in the European Union.
  - o The Swedish Armed Forces is to coordinate its research and technology procurement with the industry and the Swedish Defence Research Agency in order to broaden the utilization of results and make better use of research capacity to support development activities.
- **Measures to Develop International Cooperation and Create a Competitive Environment:** establishment of a Government financial framework for the purpose of achieving the vision:
  - o More collaboration with industry will take place in connection with the procurement of defence equipment from abroad in order to enhance the strengths of the Swedish defence industry.
  - o The Government and industry will work to develop a strategy for improving Sweden’s relations with the United States with the aim of identifying niches to increase Sweden’s presence in the U.S. market for military and civil aerospace products and to ensure access to American research and technological advancement to provide opportunities for Swedish companies to participate as suppliers in future systems.
  - o The cooperation that is provided for in terms of the sale and leasing the Gripen to other countries, for example in the form of joint maintenance, adaptation, and development of systems, will be used to strengthen the ongoing development of the Swedish (defence) aviation industry.
- **Measures to Develop the Capacity to Deal with Changes and Security Threats:** develop Sweden’s international position in security by developing Swedish strengths to meet the new threats to society by utilizing capacities of industry and institutions of higher learning.
  - o In order to fulfil the potential of Swedish industry, the competent authorities will collaborate and agree on high priority areas in the field of security.
  - o Specific measures will be identified to ensure that Swedish industry gains access to the US market for security solutions.
- **Measures to Develop the Industrial Structure at the National and Regional Levels:** development of Government and industry (Saab, Ericsson, Volvo, etc) initiatives to build SME capacity in various areas.

- **Measures to Develop Synergies between Civil and Military Applications and between Aviation and Space Programs:** development of a critical mass of research activity. Specifically for military aviation programmes:
  - o Funds will be set aside in the Armed Forces' plans for R&D, procurement, and equipment maintenance to further the participation of domestic industry in international programs.
  - o A Government/industry consensus will be developed on future programs/projects e.g. Unmanned Combat Aerial Vehicles (UCAVs), unmanned reconnaissance and surveillance systems, sensors.
  - o Government and industry will jointly carryout export promotion efforts.

For those in Canada, the path taken by Sweden is similar to the Canadian Aerospace Partnership formed in 2006 that led to the Government issuing its National Aerospace & Defence Strategic Framework (NADSF) and the Future Major Platforms (FMP) Initiative in 2007/08, focussed on the development of the country's commercial aviation sector.

## France

Successive French Governments have taken a broad view of national defence as covering military forces, civil defence and their economic and industrial underpinnings, and have integrated defence policy with economic and industrial policies. The French Government has consistently viewed its defence industrial base as important for both national security and for the country's overall economic well-being due its close links to 'strategic civil sectors' (aerospace, space, telecommunications, information technology). This gave rise to defence/civil focussed 'national industrial champions'. The policy of having national autonomy in defence equipment has resulted in nearly all French weapons in the past having been procured from these national champions (Dassault for fighter aircraft, Nexter (formerly GIAT) for main battle tanks, EADS (formerly Aerospatiale) for helicopters, SNECMA for military aero-engines). These national champions are expected to compete much of their activities to lower tier suppliers.

France has pursued a consistent, yet evolving relationship to its defence industry over the last several decades. To a very large extent, it took a 'go it alone' posture in meeting its defence equipment needs with only occasional access to US and other foreign technology and equipment. More recently, in response to a convergence of economic, political, and military factors, it has favoured the creation of a European defence industrial base of which it views itself as the main contributor (supplier) in meeting the equipment needs of other countries. One of its tactics has been the intelligent exploitation of dual-use technologies.

France's defence strategy is built on three pillars:

- Developing and maintaining its nuclear capability;
- Maintaining an autonomous defence industrial base possessing strategic capabilities necessary for its national security and defence; and
- Procuring military systems at affordable costs.

The most recent *Defence White Paper (2008)*, notes that:

*"The mastery of all technological capabilities at the national level is no longer possible. France however must maintain the national capability required to ensure the strategic and political autonomy of the Nation in a limited number of sectors. France believes that as regards other technologies and capabilities that might be required, the European framework should be privileged".*

Based on this recognition, the Defence White Paper articulates the industrial and technology priorities for a fifteen year period ((22025). These are:

- **Nuclear Systems:** capabilities to design develop and product nuclear weapons will be retained as a fully sovereign prerogative.
- **Space Systems:** capabilities to develop ballistic missiles, specifically high performance inertial guidance and solid state propulsion technology and know high will be maintain as a core national competency. For all other requirements, particularly satellites for intelligence gathering, navigation and communications, France will seek to develop and produce these in collaboration with European partners.

- **Naval Systems:** a national design and production capacity for nuclear submarines will be retained. All other sea power requirements such as conventional submarines and surface ships will be open to European collaboration.
- **Aeronautics Systems:** a national capability to develop fighter aircraft for the nuclear role will be maintain. France will however support the inception of a European military aircraft manufacturer for the design and production of future manned and unmanned combat systems.
- **Land Systems:** France will support the emergence of an integrated European industrial capability for land equipment, including the production of ammunition.
- **Missile Systems:** France will continue to support European capabilities in this domain based on Franco-British cooperation, with the proviso that core national competencies will be maintained pertaining the nuclear role.
- **Security of Information:** France will launch and support an industrial strategy to increase national capabilities in the design and production of information security products (*seen to be insufficient in scope and excessively fragmented*).
- **Defence Electronics:** France will support the emergence of a European industry base for defence electronics products (*partly to preclude US export controls (ITAR) that restrain the ability of French firms to export freely*).

State-supported military shipbuilding has been and is French national policy and practice. The Direction des Constructions Navales (DCN) reports directly to the Ministry of Defence. The DCN d'Indret is the state-owned naval shipyard. The Pays de la Loire region is the centre for naval engineering. The state-sponsored Institute for Shipbuilding Research (ISR), the Ecole Centrale de Nantes, shipyards and electronics and telecommunication manufactures have created a strategic centre of excellence, underscoring the continuing state support for shipbuilding as a priority of France's national security strategy.

### ***France's Defence Procurement System***

The procurement of defence equipment is undertaken the General Delegation for Armaments (DGA). Administrative guidelines assign the DGA responsibility for the domestic defence industry. The DGA consists of 5 functional directorates of which the Central Service for Industrial Affairs is responsible for defence industrial policy. Its role is to monitor the health of defence firms and undertakes actions aimed at improving the competitiveness and profitability of the French defence industry.

The DGA pursues its defence industrial responsibilities around two axes. The first seeks to preserve and promote technological competencies of the defence industry by encouraging defence firms to invest in R&D and in doing so, concentrates on areas of excellence to improve their competitive advantage. The second axis is promoting European development and production programs and technology collaboration.

The French Government draws on independent R&D by its defence companies. A portion of their costs are reimbursed as overhead on defence contracts similar to the US Independent Research and Development Program (IR&D). The reimbursement rate varies from 2% to 6% of contract amounts, depending on the industrial sector and other criteria. The DGA's Directorate for Research, Studies and Techniques (DRET) coordinates all defence-related R&D in the public and private sectors and monitors

defence-related development outside France. It also awards research contracts to industry and universities.

DRET defines the nation's defence technology priorities on an annual basis. Its priorities reflect the needs of the Armed Forces to operate in the current international defence and security environment i.e. those capabilities set out in the Defence White Paper. Emphasis has begun to shift away from major weapon platforms to towards command & control, communication technologies, surveillance from space and the battle field awareness and precision weapons.

The DGA has traditionally relied on administrative measures to control the cost and quality of equipment procured from national suppliers rather market mechanisms such as competition. It has viewed competition at the prime contractor level as resulting in unrealistically low bids leading to cost overruns that must be absorbed by the government. In contrast, it views that if single source firms are assured a regular flow of business they can engage in long term planning that reduces overhead costs. The DGA has used fixed price contracts successfully by working closely with industry to ensure an equitable sharing of costs based on a system's technical specifications and export potential (international competition is seen as creating incentives for quality and price discipline). Contracts are re-negotiated if export prospects change or the MoD's performance specifications become more demanding.

DGA officials seeks bilateral and multilateral European industry alliances in which both partners benefit synergistically from complementary technologies and know-how. In this way, it assists the French defence industry to gain access to European defence markets, while persevering national defence industrial strengths.

Overall, France has managed to preserve a broad-based defence industry to meet its future requirements. This has been achieved through pursuing a coherent, if not formally stated, defence industrial strategy. Despite France's new emphasis on collaborating with other European nations in the development and production of defence equipment, it appears to be a policy of collaboration 'a la carte', allowing it to maintain a foothold in all major defence industrial sectors, particularly at the systems level.



## Germany

Germany does not have a formally-stated defence industrial policy. This is in large part of consequence of West Germany's defence policy in the post-World War II period and the role assigned to Armed Forces. Until the late 1970's tight restrictions were maintained on the development and production of defence equipment.

When Germany began to build up its Armed Forces, there was virtually no domestic defence industry in existence. As a result, it adopted a two-track defence procurement strategy of procuring much of its defence equipment from foreign contractors and where existing capacities in the civil sector could be used or adapted having its defence equipment needs produced in-country. Companies producing defence equipment were characterized by their having considerable commercial operations, particularly in contrast to those of France. The defence sector became and remains heavily embedded into the German (civil) economy.

Without a robust defence industrial base, Germany faced a considerable gap in defence technology in comparison with other Western countries. In recent years, it has placed priority on technology acquisition and development to ensure Germany can source from its industry the advance military systems that its Armed Forces requires. This has been pursued through the provision of substantial R&D subsidies to the aerospace sector and partnering in cooperative European defence programs.

Recent defence policy statements reflect the principles which now shape the Government/Defence Industry relationship:

- Self-sufficiency in meeting its all defence equipment needs is not realistic and industrial and technological capacity will be developed through collaboration with European partners;
- Priority placed on building defence capacity in the aerospace sector (somewhat similar to the industrial strategy pursued by Sweden); and
- Development (investment) projects involving defence technology should benefit the national economy as a whole.

As a result, Germany's defence procurement reflects very high levels of international collaboration. Germany continues to be one of the strongest supporters of the movement towards an integrated European defence industry. It is the largest financial contributor to the European Defence Agency (EDA).

One area that remains subject to national procurement preference is naval shipbuilding. Contracts for building military ships are not internationally competed, but given almost directly to national shipyards without consideration of costs and production prices. The German Navy accounts for 25% of total marine shipbuilding production. The Navy purchases, almost exclusively, their goods from the German shipbuilding and defense industry, apart from products where the American expertise is of essence, for example, navigation systems or precision weapons. There is some movement however to partnering between German and U.S. shipbuilders in the military field driven by a German desire for increased exports and a U.S. want to access German expertise in the field of coast guard shipbuilding in support of its Homeland Security requirements.

Two separate bodies, the Directorate General of Armaments and the Federal Office of Military Technology and Procurement (BWB) are responsible for German defence

procurement. The BWB is a separate civilian organization that acts as the interface between the Ministry of Defence and German industry. It has responsibility for procuring the needs of the Armed Forces (the Basic Law stipulates that German defence procurement must be done by civilian officials). Administrative regulations also require that in principle public sector contracts (including defence) be awarded competitively. They do however allow exceptions for special circumstances such as the consolidation and preservation of key industrial capability. The BWB also has responsibility to oversee R&D to meet Germany's future defence needs.

Another entity that impacts on defence procurement and the domestic industrial base is the Institute for Development, Procurement and management (GEEB). It assists in the application of commercial practices to the procurement of defence equipment and services.

Unlike other European countries, Germany does not apply offsets to defence equipment contracts awarded to foreign contractors.

While Germany does not have a formal policy for the development of its defence industry there do exist a well functioning processes for the articulation of defence industrial interests in a consensual decision-making process.

## Japan

There exists no single Japanese defence industrial policy. In Japan, its defence industrial policy is manifest in the form of legislation, through the publication of regulations and guidelines from various Ministries, and through conferences held by defence policy making Ministries. Ministries routinely commission research studies and adopted the recommendations that come forward. One example is a report published by Tokai University that set out the fundamental direction towards the development of a defence industry and technology base for the 21<sup>st</sup> century. The report stressed the imperatives of:

- Maintaining the defence industrial base;
- Having a domestic capability for the maintenance, repair and upgrade of the assets of the Japanese Defence Force;
- Clarifying the defence procurement methodology to better nurture the domestic technology base;
- Developing an indigenous systems integration capability;
- Promoting effective defence R&D; and
- Clarifying the priority technology fields.

As a result, the Japanese defence industry has an understanding of the issues of concern to the Government – a form of tacit policy making unique to Japan's political culture.

*Defense Japan 2007* states that to contribute to enhancing the defence industry and technology base, Japan will articulate those elements of the defence industrial technology base that should be developed for national security. This policy statement along with the 'National Defence Program Guidelines' and 'The Mid-term Defense Acquisition Programs' compose the fundamentals of Japan's defence industrial policy. The later document is important to the domestic defence industry as it set out the Japanese Defence Forces' equipment procurement plans.

Both the Japanese Ministry of Defence and the Ministry of Economy, Trade and Investment (METI) play an important role in charting the future development of Japan's defence industry. Somewhat akin to the approach taken by Sweden, METI promotes the development of its aerospace industry for both civil and military production. Its Aerospace and Defence Industry Division published in 2007, 'METI's Aerospace Industry Policy'.

METI uses secondments to assign defence industry officials to its Aerospace and Defence Industry Division with the aim of developing the defence industry. METI has in some cases commissioned third party organizations to conduct research on defence industry developments which has included making recommendation for Japan's defence industrial policy development.

Defence procurement has been a significant driver of Japan's defence industrial policy. The government has sought to maintain an indigenous defence production base by initiating (through direct and indirect subsidy) projects such as the PX (Maritime Patrol) and CX (Cargo) aircraft program. More recently, it has shifted its focus to strengthening sovereign control of the maintenance of equipment over its life-cycles and more

indigenous R&D. It is also evolving from a policy of maintaining and relying on indigenous defence production to maximize national sovereignty to greater international collaboration – a balance of semi-autonomous capability and greater reliance on global industry alliances, in part to compensate the industry for limited domestic demand and to lessen dependence on U.S. technology.

While Japan's overall spending on science and technology is the largest in the world in terms of GDP and second to the U.S. in actual dollars spent, spending on defence R&D is less than 5% of the total government outlay. In an effort to increase defence R&D activity, the Government launched its 'Fundamental Project for Defence Science and Technology Development', now in its third phase, 2006-2010. One of the goals is to promote advances in dual-use and security-related technologies. Capability areas that are the focus of the Project are:

- Shipborne air defence radar;
- Tactical combat command systems research;
- Advanced materials;
- Portable chemical agent detection;
- Gyro and image application applied technology; and
- Ballistic missile technology.

While in the past, Japan's export control policy limited collaboration to the U.S., Japan is now seeking to work with the U.K., France and Sweden in these technology domains.

### **G3.4 A EUROPEAN DEFENCE INDUSTRIAL BASE?**

In 2005, European Union members spent about 14% of their combined defence budgets on weapons procurement. To maintain their domestic defence-related industries, larger countries spend close to the average – the UK 15%, Germany 11%, and Italy 8%. Smaller members spend a proportionately larger share – Sweden 27%, Spain 21%, the Netherlands 16%.

Traditionally, the larger European defence power (e.g. the UK, France) and some smaller countries (e.g. Sweden) have insisted on a high degree of self-sufficiency in their defence procurement. Some EU member states led by France however are now calling for a move away from a focus on national defence industries towards creating a single, integrated European defence industrial base. To further this concept, the European Defence Agency was established in 2004, and is tasked with:

- Developing defence capabilities in support of a European Defence and Security Policy, the harmonization of defence requirements, and the initiation of collaborative initiatives;
- Promoting and enhancing European armaments cooperation including project/program management;
- Working to strengthen the European defence technology and industry base for creation of an internationally competitive defence equipment market; and
- Enhancing and increasing the effectiveness of European defence research and technology.

To-date, most of the EDA's initiatives have focused on the 'demand side' i.e. standardizing defence procurement practices and encouraging member states to coordinate their R&D investments. It is unclear whether 'supply-side' initiatives aimed at creating a single integrated European defence industrial base will meet with enthusiasm by member states and be successful.

Over the last two years, transnational restructuring of defence industries has been high on the agenda of European nations. Public debate on this issue, however, has often been characterised by a certain misunderstanding. Indeed, many analysts use the term "defence industry" when what they really mean is aerospace and, at the most, defence electronics. Only in these two areas has real cross-border consolidation taken place, leading not only to the formation of sector-specific transnational companies, but also to the creation of a truly European champion, EADS.

The European military land systems industry is very 'national' in its make-up. In 2009, there are nine major European firms from six countries plus General Dynamics (U.S.) which has subsidiaries in four European countries (Austria; Germany, Spain and Sweden): Krauss-Maffei Wegmann and Rheinmetall (Germany); Nexter, Renault Truck Defence and Panhard General Defense (France); Patia (Finland); Oto Melara-Iveco (Finmeccanica Group) (Italy); BAE Land Systems and BAE Haggblunds (United Kingdom, Sweden); General Dynamics-Steyr (Austria); General Dynamics-MOWAG (Switzerland); and General Dynamics-Santa Barbara (Spain). Alongside these established firms, a considerable number of European states have the separate capacity to produce wheeled or tracked armoured vehicles, systems and subsystems. Examples include: the Turkish

firm Otokar (the Altay main battle tank); the Greek firm Hellenic Vehicle Industry-ELBO (tracked vehicles); and, Wojskowe Zaklady (Poland).

Among the firm above, most are both the preferred supplier in their home market and several have considerable government shareholding that protects them from competition. At a national level, the military land systems sector is seen as guaranteeing jobs and maintaining know-how not only for the automotive industry but other priority sectors such as metallurgy, composites material, sensors, and communications.

In 2005, the European Defence Agency estimated that there were 23 separate national programs to acquire land vehicle systems (from heavy tanks to light wheeled armoured vehicles). While calling for increased cooperation among states, it concluded in a press release in 2009 that the situation had barely changed and that European cooperation in this field –which is limited to subsystems, research into interoperability and sharing logistic chains – can go no further. If there is to be any rationalization of the land vehicle systems sector in Europe it will likely take place at the national level before national government consider forming European alliances. The creation of a big transnational prime contractor for land armaments however, is rather unlikely, since there are no common commercial activities that could promote transnational integration and very few intergovernmental programmes that could structure cross-border consolidation. Moreover, the lack of harmonisation of military requirements is even more pronounced in land systems than in aerospace.

Naval construction is a classic example of European governments maintaining sovereign defence industrial capacity. Typically, the European warship industry is structured around a 'national leader' which forms a domestic monopoly. These include BAE Systems in the U.K.; DCN (state-owned in France); Fincantieri in Italy; New IZAR in Spain; TKMS in Germany; Kochums in Sweden; and De Schelde in the Netherlands. Chart 3 presents an overview of Europe's naval shipbuilders and their range of warships production. Four nations have the capacity to build aircraft carriers, 7 for frigates/corvettes, 6 for submarines (only 2 for nuclear: U.K, and France) and 6 to 9 for speciality and auxiliary ships.

**FIGURE G3.4-1 MAIN NAVAL SHIPYARDS IN EUROPE**

**The main military shipyards in the European Union**

Country	Aircraft carriers	Frigates	Corvettes	Submarines	Mine-sweepers	Motor torpedo	Auxiliary vessels
Denmark					Aalborg Vaerft	Aalborg Vaerft	
Finland					Aker Finnyards	Aker Finnyards	
France	DCN ALSTOM	DCN ALSTOM	DCN	DCN	DCN	CMN ALSTOM	DCN ALSTOM CMN
Germany		TKMS Lürssen Gruppe	TKMS Lürssen Gruppe Peene-Werft Abeking& Rasmussen	TKMS	Lürssen Gruppe Peene-Werft Abeking& Rasmussen	Lürssen Gruppe Abeking& Rasmussen	TKMS Lürssen Gruppe Peenewerft Abeking& Rasmussen
Greece		Hellenic Shipyards				Hellenic Shipyards	
United Kingdom	Swan Hunter	Swan Hunter BAE Systems Ships. Vosper Thornycroft	Vosper Thornycroft	BAE Systems Submarines	Vosper Thornycroft		BAE Systems Ships.
Italy	CNI/ Fincantieri	Fincantieri RivaTrigoso	CNI/Fincan- tieri RivaTri- goso	Fincantieri Muggiano	Intermarine	Fincantieri Riva Trigoso	Fincantieri
Netherlands		De Schelde/ Damen	De Schelde/ Damen		Merwede	De Schelde/ Damen	Merwede
Sweden			Kockums	Kockums	Karlskrona- varvet	Karlskrona- varvet	
Spain	NEW IZAR	NEW IZAR	NEW IZAR	NEW IZAR		NEW IZAR	NEW IZAR

*Quelle: Voß 1993, Heseler 1999, ALPHA 2000, Smit u. a. 2000 (ISA CONSULT, June 2002), updated by EMF, February 2005*

European collaboration in naval ship construction generally has not been successful. Perhaps, the most noteworthy failure was the Common New Generation Frigate based on the requirements of France, Italy and the U.K. There were two components to the program; the warship construction (Horizon); and the Principle Anti-Air Missile System (PAAMS). The International Joint Venture Company which was created to manage the Horizon project consisted of three companies nominated by each participating government i.e. GEC Marconi from the U.K. (chosen through domestic completion), DCN of France, and Orizzone of Italy, both state-owned and government-selected

companies. The IJVC was unable to emerge as a strong prime contractor with a robust supporting industrial structure. The program was affected by significant delays and the U.K. withdrew from Horizon in 1999, after a five year delay. Different national requirements impacted the project and further problems arose from differences in procurement policies, especially between the UK's competitive policy and the 'work-share' focus of the other partner nations.<sup>xxxiv</sup> The project was eventually terminated due to unfocused management and the high price of the ships.

As evident in the case of the U.K. Sweden, the Netherlands and Turkey, and perhaps to a lesser extent, France and Germany (their 'public' endorsement for the creation of an EITB), they are committed to sustaining and developing their domestic defence industrial bases and will likely continue to invoke Article 296 of the EU Framework in the imperative of protecting defence industrial capabilities.



### G3.5 CONCLUSION

For those nations with a formal defence industrial policy, their policies share some common attributes:

- **Explicit recognition of inter-relationship between the country's economic prosperity and its national defence:** a 'healthy' defence industrial sector (overall and at the firm level) is seen as important for securing the nation's security and contributing to its economic performance. Defence R&D is accorded high importance.
- **Whole of Government Approach:** recognize the interconnection between a nation's overall industrial and technology priorities and the objectives of its defence industrial policy i.e., at a strategic level the defence industrial policy must support broad government objective and therefore be developed with input from across the governments e.g., Industry, Trade, Foreign Policy, Innovation and Research.
- **Clear accountability for Implementation:** responsibility for development and implementation of the policy is usually assigned to the Minister of Defence whilst supported by other Ministers. This includes reporting the performance of the defence industrial policy at the government as a whole level e.g. to Parliament, Cabinet.
- **Clear articulation of those capabilities deemed essential to be maintained in the domestic industry.** while recognizing that limited government resources are not sufficient for a nation to be to be totally self-sufficient and that some of its defence equipment and services needs will need to be acquired from foreign sources or through international collaboration and development, the polices identify key domestic industrial and technology capabilities for guiding government policy makers and implementers and industry business strategies.
- **Formal and Active Government/Industry Consolutions:** accept industry as having important insights on defence industrial base and defence procurement issues and accords it avenues to bring these forward to government policy makers.
- **Recognition the Unique Nature of Defence Procurement:** that defence procurement has to be conducted in a way that supports to the country's overall defence industrial objective and that this often needs to vary from the 'rules' and processes for other types of public procurement.

**Appendix 1** summarizes the main elements of the policy orientation of each of the reviewed countries in respect to their defence industrial bases.

## G4 OFFSETS/INDUSTRIAL PARTICIPATION POLICIES

Quality and price are generally not the sole criteria when deciding on the defence procurement outcomes that nations seek. The global defence industry has certain features that have led most industrialized nations to adopt measures to enable their national economies to benefit when they award major defence contracts to foreign contractors. Beginning in the 1970s, the increased cost of defence procurements began to pressure governments to show to their taxpayers that their defence spending was indeed providing benefits to the national economy. As a consequence, defence companies facing strong competition for a lesser number of, albeit higher value, defence procurements, sought to make their bid offerings more attractive to the procuring nations. These twined-conditions became impetus for the concept of 'Offsets'.

### G4.1 OVERVIEW

Offsets in its simplest form can be defined as a formal trade arrangement wherein a country requires foreign contractors selected to supply its defence needs to 'compensate' for the expenditure through undertaking activities that benefit its economy. This research found reference to over 100 countries having some form of offsets policy. The US Commerce Department (which opposes offsets in defence trade) in its 2007 Report to Congress recognized:

*"This is a common practice among more advanced economies. Offsets can make good political sense by redirecting what would otherwise be large international outflows back into the domestic economy. In so doing, they may also promote technology transfer, supplement defence infrastructure or provide commercial opportunity. Almost all European (and other) countries have adopted formalized offset policies."<sup>xxxv</sup>*

The offsets approaches of nations should reflect and be supportive of its overall economic and industrial priorities e.g., such as set out in a defence industrial strategy. Management of the offset process entails five stages:

- **Policy Stage:** the initial and perhaps the most important stage. a national offset policy needs to be formulated with the objectives to be achieved, clearly articulated.
- **Planning Stage:** considers the nature of what is being procured and the capabilities that likely bidders possess that can then be match to domestic capability and technology priorities.
- **Negotiation:** starts at the receipt of bids or the beginning of sole-source negotiations.
- **Implementation, Monitoring and Reporting:** measuring the achievement of a contractor's obligations and taking corrective action in the case on non-fulfilment.
- **Review Stage:** a thorough review of the whole offsets policy to ascertain the degree to which stated objectives are being achieved and improvements made if required.

Offsets agreements between a procuring nation and the selected contractor generally include a range of activities that fall into two categories:

- **Direct:** activities tied directly to the defence equipment being procured e.g. involving companies of the procuring country in the manufacture (e.g. co-production, sub-system suppliers) or in-service support, maintenance and modernization of the equipment.
- **Indirect:** activities directed beyond defence equipment being procured e.g. placing activities into wider defence industrial base, and in some cases, other sectors.

Common types of offsets benefits include: the direct purchase of goods and services from the domestic supplier base, co-production at the system or sub-system level, technology and know-how transfer, R&D collaboration, direct inward investment, training and skills development, and marketing and trade assistance.

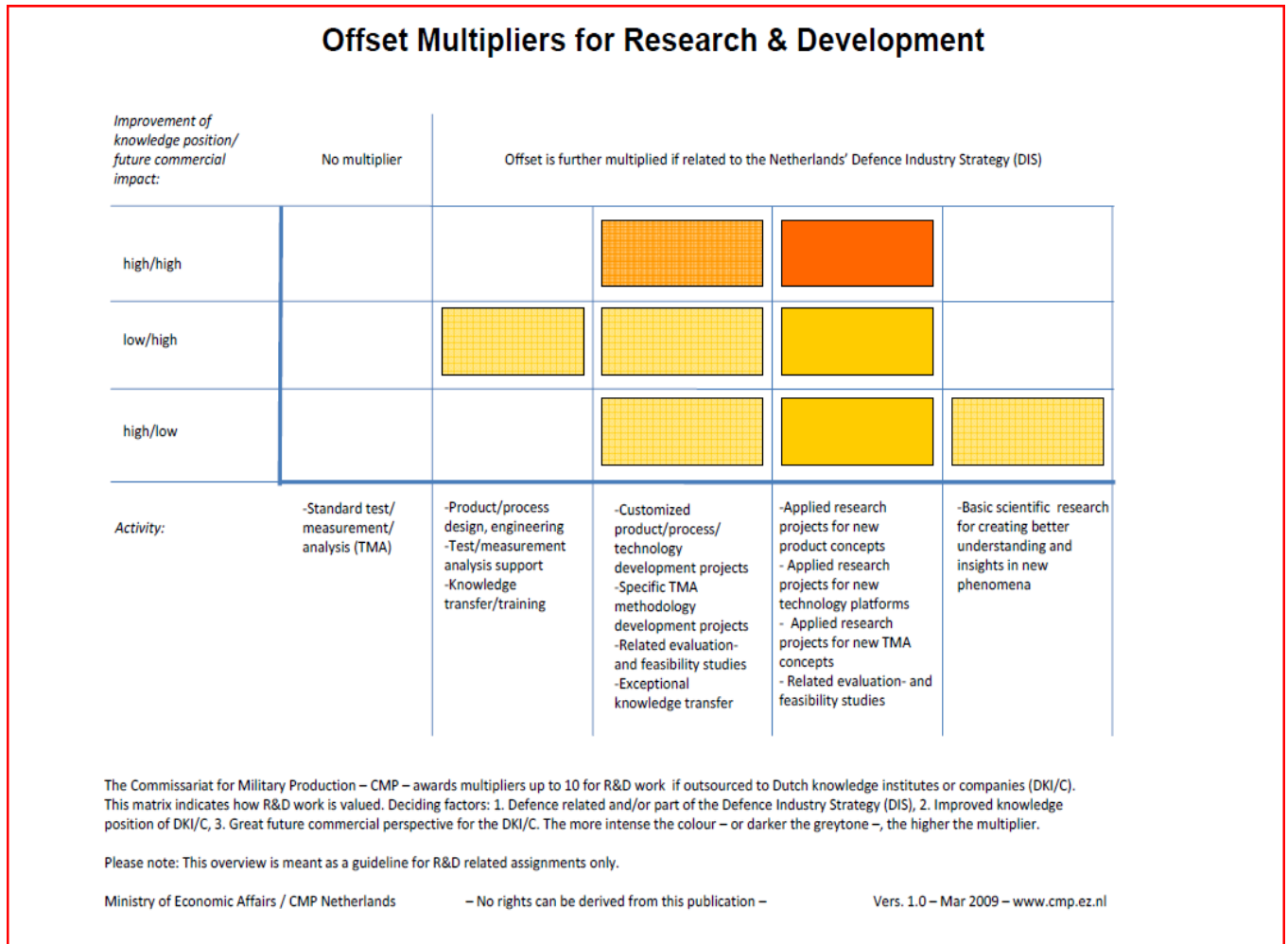
The majority of nations restrict the placement of offset activities into the defence sector while others allow the benefits to go beyond to other industry sectors – those generally depicted as being high technology in nature.

Nations tailor their offset policies to meet their specific circumstances and as such they differ in scope, complexity and implementation.

- **Thresholds at which offsets are required:** a pre-set dollar value at which offsets are required on specific procurements.
- **Offset Requirement:** typically offsets must equal 100% of contract value though some nations seek more and others accept less.
- **Percentage of Direct to Indirect:** some nations favour directs whereas others accept both direct and indirect and in some cases set specific ratios for direct and indirect benefits for each procurement.
- **Multipliers:** assign a higher economic value to certain types of offset activities e.g. technology transfer, long-term supply arrangements to incentivize contractors to place benefits in priority areas. Chart 4 provides an illustration of how the Netherlands assigns a multiplier to technology transfer
- **Banking:** some jurisdictions only allow contractors to gain credit of economic activity placed into the domestic economy after launch of the procurement, while other allow contractors to 'bank' such activities for application to offsets commitments they may take on from being awarded future contracts.
- **Swapping:** some countries engage in country-to-country' abatement of obligations owed by their suppliers to the other country.
- **Penalties:** countries employ several approaches to hold contractors accountable for meeting their offsets commitments e.g., a pre-determined amount of the unrealized commitment, bank guarantees.

FIGURE G4.1-1

NETHERLANDS OFFSETS POLICY & TECHNOLOGY MULTIPLIERS



Some countries assign a weighted factor to offsets proposals in the evaluation of bids along with technical and price factors, while others award the main procurement contract based only on the technical and price evaluation with a condition that the offset proposal must be deemed acceptable. Additionally, some countries embed offsets arrangements into the main procurement contract, while others manage the arrangements outside the contract; e.g. Memorandum of Understanding.

## G4.2 Country-Specific Policies

**Appendix 2** reviews the main elements of the offsets (industrial benefits, industrial participation, industrial cooperation) policies of a number of countries. A summary matrix (**Appendix 3**) is provided for ease of reference in comparing the common/unique elements of each country's offsets approach.

### European Union Offsets

Most European countries and those who are Canada's major defence trading partners have some form of an offsets policy. As Europe looks to articulate a European Defence and Security Policy and to create a single, integrated defence industrial base, the European Defence Agency has been working to bring more transparency and consistency to how member states employ their offsets policies to support the development of their domestic defence industrial bases.

On July 1, 2009, the EDA issued a voluntary, non-binding 'Code of Conduct on Offsets' that requires member states to publish information on their national offset policies and practices, including national regulations and guidelines, offset requirements criteria and modalities. The Code explicitly recognizes, however, the continuing intent of member states to apply their offsets policies to develop their national defence industrial bases.

*"The PMS (participating member states) share the ultimate aim to create the market conditions, and develop a European DTIB in which offsets may no longer be needed. Nonetheless, the present structure of the European DTIB and our early open market efforts require in the short term, evolving offsets, compatible with EU law, whilst mitigating any impact they may have on cross-border competition".<sup>xxxvi</sup>*

The Code also provides for the evolving use of offsets to help develop industrial capabilities fully consistent with the objectives of the European Technology and Industrial Base Strategy; namely an industrial base that is capability driven, competent and competitive. As a result, the Code is designed to help shape Europe's DTIB, by facilitating the development of globally competitive Centres of Excellence and avoiding unnecessary duplication. Importantly, the Code introduces an offsets cap of 100% of contract value. Consequently, subscribing governments can neither request nor accept offsets exceeding the value of the relevant procurement contract. The Code has provision for mutual abatements (swapping) to waive reciprocal offset obligations. The Agency's Code is supported by a Reporting and Monitoring system to ensure mutual transparency and accountability among subscribing member states. The Code covers all offsets agreements signed EDA participating member states (except Romania) and Norway.

## United States Offsets and Foreign Military Sales

According to the 2007 Commerce Department Report to Congress, during the 14 year period from 1993 to 2006, the U.S. defence companies signed 582 offset agreements with 42 countries, with total value (of all offset agreements) amounting more than \$60 billion, or over 71 per cent of agreed export value. In terms of actual transactions, the U.S. companies reported nearly \$42 billion of actual offset transactions with 42 countries during the above time period.

Unlike most other defence trading nations, the U.S. Government does not apply an offsets policy when awarding defence contracts to contractors of other nations (it does employ an array of other measures in support of its defence industrial base from national procurement preferences to funding R&D). It views the practice of 'offsets' causing economic distortions in international defence trade and undermining fairness and competitiveness. The 'Presidential Policy on Offset of 1990' legislated that:

*"No agency of the United States Government shall encourage, enter directly into, or commit United States firms to any offset arrangement in connection with the sale of defense service to foreign governments".*

## Foreign Military Sales Program and Offsets

The Foreign Military Sales (FMS) program is the U.S. Government's vehicle for transferring defence articles, services and training to other sovereign nations and international organizations. Under FMS, the US Government procures the defence articles or services on behalf of the foreign customer e.g. Canada's acquisition of C-17 strategic airlifter was handled through FMS. Countries approved to participate in the program may obtain defence articles and services by paying with their own national funds or with funds provided through U.S. Government-sponsored assistance programs. The Defense Security Cooperation Agency administers the FMS Program with the Department of Defense.

Many nations that purchases defence equipment under FMS seek to secure as they do in direct dealing with foreign firms, offsets commitments from the contractor selected by the U.S. DoD. In accordance with the Presidential Policy Statement of 1990, DoD does not 'officially support' the tying offsets to FMS arrangements. It however, has taken the position that the decision whether to engage in offsets, and the responsibility for negotiating and implementing the offsets arrangement, resides with the companies involved.

The Defence Federal Acquisition Regulations System (DFARS)<sup>xxxvii</sup> states that the US Government assumes no obligation to satisfy or administer the offset requirement or to bear any of the associated costs. This "hands off" approach also extends to a policy of providing no involvement with the negotiation of the offset agreement between the company and the FMS customer, and no role in judging the merits of these agreements. In addition, the Letter of Offer and Acceptance (LOA) between the U.S. Government and the FMS customer and the contract associated with that LOA (between the U.S. Government and the contractor) do not include any of the terms of the offset agreement (such as the delivery schedule, acceptance criteria, etc.) even though the LOA and the contract may include costs associated with the offset. If the FMS customer and the

contractor have signed a separate agreement, it remains distinct and independent of the LOA and the contract. This holds true regardless of whether the FMS requirement is purchased on a competitive or sole source basis.

Notwithstanding the official U.S. Government position on offsets in FMS arrangements, some recognition and practicality in supporting the sale of U.S. defence equipment is provided for. On 31 May 1995, the Director of Defense Procurement and Acquisition Policy issued a Memorandum clarifying that U.S. contractors may recover the full cost necessary to implement an offset agreement in connection with FMS purchases. Prior to this, the DFAR language had limited recovery by a U.S. contractor to the costs to administer specific requirements of its offset agreement. The 1995 policy change was deemed necessary because defence companies doing business with FMS countries had the choice of either absorbing the costs for offsets demanded by the countries in return for buying U.S. defence systems, or passing them on to all customers, including DoD, in the form of indirect costs. The U.S. Government's position is that the U.S. taxpayer should not pay any offset costs in connection with a foreign military sale. The new guidance attempted to clarify and broaden what offset costs the contractor can recover from the FMS customer under our foreign military sales contracts, and proposes them as direct costs to the FMS customer.

On 13 July 1999, the Director of Defense Procurement and Acquisition Policy signed a subsequent Memorandum which clarified the treatment of offset costs. This memo replaced the term 'offset implementation costs' with the term 'offset cost'. The language of the DFARS was changed as follows:

- A U.S. defense contractor may recover all costs incurred for offset agreements with a foreign government or international organization if the LOA is financed wholly with customer cash or repayable foreign military finance credits.
- The U.S. Government assumes no obligation to satisfy or administer the offset requirement or to bear any of the associated costs.<sup>xxxviii</sup>

While maintaining an official policy position against the use of offsets in international defence trade, a practical compromise is shown under FMS to support the sale of defence equipment by U.S. companies.

## **G5 CONCLUSION**

The findings of research effort undertaken confirm that:

- Defence spending has a positive impact on national economies e.g. on GDP, the technological level and innovation capacity of industry, and employment.
- National governments accord high priority to the sustainment and development of their defence industries both for national security and defence and for economic growth and prosperity (manifest in many countries through their articulation of formal defence industrial policies and enabling strategies).
- Governments treat defence procurement differently from other types of public procurement e.g. national procurement preferences, offsets).

This review of how other nations approach their defence industrial bases may help Canadian decision-makers in their consideration as to the most optimal policy orientation in respect to Canada's defence industrial base.



## Appendix 1

## Appendix 2

### Summaries of the Offsets Policies of Selected Countries

Austria  
Belgium  
Canada  
Denmark  
Czech Republic  
Greece  
Hungary  
Italy  
Netherlands  
Norway  
Poland  
Portugal  
Spain  
Sweden  
Turkey  
United Kingdom

# AUSTRIA

## **Legal Basis of Policy or Government Regulations**

Minister Council

Special regulations for military procurement are stipulated in the “Bindevergabegesetz” (laws relating to public procurement).

## **Responsible Authority**

Federal Ministry of Economy, Family and Youth (Offsets Office)

## **Policy Objectives**

To enhance the technological and innovative aspects of the national economy and create employment

## **Threshold at which Offsets are Required**

Set by the Ministry of Defence: 726K EUR

## **Offset Requirement**

Minimum 100% of contract value.

Regional distribution is important.

Causality must be shown.

## **Direct/Indirect Ratio**

No preference is specified. Both categories accepted.

## **Qualifying Transactions (eligible activities)**

High local content on the purchased military equipment, technology transfer and collaboration, direct foreign investment, long-term business relationships, skills development and supplier qualification, access to new markets.

## **Qualifying Industrial Sectors**

Defence and aerospace, auto, information technology and other ‘high technology’ sectors (not defined) including life sciences (biotechnology, genetics, and medicine), environmental technologies, micro and nanotechnologies, new materials technology.

## **Offset Procedure (role in evaluation and selection of contractor)**

Tenders ‘propose’ the amount of the offset requirement and the penalty for non-fulfilment, and these are open for negotiation.

The results of the evaluation of bidder offset proposals by the Ministry of Economy, Family and Youth are passed to the Ministry of Defence and Sports but are not a criterion for the award of contracts.

On contractor selection by the MoD, the Offset Agreement is signed-off between the Ministry of Economy, Family and Youth and the selected contractor. Agreement contains ‘confidentiality clauses’ to protect commercial nature of the offset undertaking of the contractor.

## Implementation Modalities

**Fulfilment Period:** normally the same as the delivery period of the contract. Can be extended if the offset commitment is substantial.

**Multipliers:** Yes (since 2004), for technology transfer, supplier education, skills development and qualification measures. No 'official table' but generally are in the range of 3% to 9% for technology-related activities.

**Banking:** normally no credit is given to transactions that occurred prior to the commencement of the procurement. In some cases activities undertaken before the signing of the contract will be accepted (normally 5-year limit).

**Swapping:** not allowed.

**Penalty (Guarantee) for Non-fulfilment:** the level of penalty is negotiated – normally between 3% and 7% of the unfulfilled value.

## Government Role in Contractor Selection of Offset Recipients

Contractors choose offset receivers based on market forces.

## Monitoring

By the Ministry of Economy, Family and Youth

Source: <http://www.bmwfj.gv.at>

# **BELGIUM**

## **Legal Basis of Policy**

Royal Decree (1997, modified 2001) on defence procurement.

## **Responsible Authority**

Federal Ministry of Economy = "Federal Public Service Economy (FPS Economy)"

## **Policy Objectives**

Support national security and defence.

Maintain and develop the technological base of the Belgium industry.

## **Threshold at which Offsets are Required**

If negotiated by MoD - 2.7M EUR

If competed by MoD – 11M EUR

## **Offset Requirement**

No specific requirement set e.g. % of contract, different categories, types of transactions.

Bidders free to determine amount of the propose offset and its make-up.

Causality must be proven.

## **Direct/Indirect**

Both allowed. No ratio specified.

## **Qualifying Transactions (eligible activities)**

Must be high technology in nature e.g. technology transfer, Youth Internships.

Direct investments do not qualify.

Contractor can be assisted by other companies.

## **Qualifying Industrial Sectors**

Preference is given to military use or application, security, law enforcement and protection.

## **Offset Procedures (role in evaluation and selection of contractors)**

While no percentage requirement is specified in tender documents, the relative weight of the economic criterion in the evaluation process compared to the technical and price criteria is specified (maximum 15% and determined by the Ministry of the Economy based on an assessment of the potential for Belgium industry to be involved in the procurement). The economic criterion (weighting) only comes in play if the MoD evaluation results in offset with a comparable response to the military requirement.

The offset part of the main contract is negotiated by the Ministry of the Economy independent from the MoD and become binding on the part of the contractor. Agreement contains 'confidentiality clauses' to protect commercial nature of the offset undertaking of the contractor.

## **Selection of the Offset Receivers**

Bidders are free to decide which domestic companies/entities to work with.

## Implementation Modalities

**Fulfilment Period:** linked to the main contract but can be extended up to 2-years in order to give the contractor opportunity to build long-term relationships with domestic companies

**Multipliers:** yes, in specific cases; e.g. technology transfer, Youth Internships, from 2% to 5%.

**Banking:** no.

**Swapping:** yes on a case-by-case basis if an agreement can be reached by the 4 parties concerned (companies, authorities of both countries).

**Penalty (Guarantee for Non-fulfilment):** yes, generally 10% of non-fulfilled part of obligation and exercised through bank guarantee.

## Monitoring and Reporting

Auditing Agency (Ministry of Economy) assesses fulfilment of contractors offset obligation and reports to senior Ministry officials for approval or the taking of corrective measures.

Source: [http://www.economie.fgov.be/organization\\_market/compensations/home\\_en.htm](http://www.economie.fgov.be/organization_market/compensations/home_en.htm)

## **CANADA**

### **Legal Basis of Policy or Government Regulations**

Industrial and Regional Benefits Policy for Major Crown Projects (1986). Guidelines published

### **Responsible Authority**

Ministry of Industry (Industry Canada) in conjunction with regional development agencies.

### **Policy Objectives**

Long-term industrial development

Regional Development

Small Business Development

### **Threshold at which Offsets (IRBs) are Required**

Mandatory on purchases of \$100M CAD (72M EUR).

Discretionary on purchases between \$2M and \$100M CAD (1.5M and 72M EUR)

### **Offset Requirement**

Normally 100% of contract value.

Only value of Canadian content of transaction is counted.

Must be new economic activity (incrementality restrictions)

Regional distribution of benefit is important

Causality must be proven

Recently, 60% of the offset transactions must be identified prior to contract sign-off.

### **Direct/Indirect**

Both categories are acceptable, with some preference for direct offsets (easier to quantify and demonstrate). Ratios are normally set for specific contracts depending on the nature of the equipment being bought and the business areas of the likely bidders.

### **Qualifying Transactions (eligible activities)**

Direct participation of Canadian companies in the production and sustainment of the equipment being procured, other direct purchasing across industrial sectors, technology transfer and collaboration, marketing and export assistance.

### **Qualifying Sectors**

Can be directed to all high technology sectors: defence, aerospace, automotive, information technologies.

### **Offset Procedure (role in evaluation and selection of contractor)**

Industry Canada sets offset (IRB) requirements (value, direct/indirect ratios, regional distribution targets, small business participation targets) for specific procurement projects that are then reflected along applicable terms and conditions in tender documents (Request for Proposals).

Bidders are required to submit their offset proposals along with their technical and price proposals. The overall evaluation criteria in descending order are: meeting operational requirements; achieving long-term industrial and regional benefits and contribution to other national objective. Evaluations of the three components are evaluated separately: Offsets – Industry Canada and regional development agencies; Technical: Department of National

Defence; Price – Department of Public Works and Government Services. Offset proposals are rate a Pass or Fail based on an assessment of their quality, quantity and risk of non-fulfilment. Contracts (generally) are awarded to the contractor scoring highest on the technical and price evaluations if it has received a Pass on the offset evaluation.

The offset agreement concluded with the selected contractor is embedded into the main contract.

### **Implementation Modalities**

**Fulfilment Period:** normally ties to the period of the contract (specified in the tender). Can be extended when both equipment and related in-service support is procurement at the same time.

**Multipliers:** generally only used in relation to offset activity involving Canadian universities or research organizations and to a maximum of 5%.

**Banking:** Not generally allowed. Some flexibility if the period between the release of the tender documents and the signing of the contract becomes extended.

**Swapping:** will at times be considered.

**Penalty (Guarantee) for Non-fulfilment:** generally 10% of the non-fulfilled commitment.

**Selection of Offset Recipients:** Industry Canada and regional development agencies will work with bidders to indent potential Canadian companies but contractors are free to choose base on market and business imperative.

### **Monitoring**

Annual review conducted by Industry Canada officials of contracts having active offset (IRB) commitments



## **DENMARK**

### **Legal Basis of Policy or Government Regulations**

Executive Order No 264 on Industrial Cooperation in connection with Procurement of Defence Equipment (2005), and Circular on Industrial Cooperation in connection with Procurement of Defence Equipment (2005).

### **Responsible Authority**

Ministry of Economic and Business Affairs (Danish Enterprise and Construction Authority).

### **Policy Objectives**

Enhance the technological level and market access of Danish defence-related companies and their relationships with foreign suppliers of defence equipment.

### **Threshold at which Offsets are Required**

Type 1 - Industrial Cooperation Contracts: set at 25M DKK (3.3M EUR) to 100M DKK (13.2M EUR).

Type 2 - Industrial Cooperation Contracts: set at 100M DKK (13.2M EUR) and above.

Type 3 – Industrial Cooperation Contracts: for contracts between 5M DKK (670K EUR) and 3.3M EUR) the foreign supplier is required to enter into an ICC if the total procurement from that supplier will exceed 25M DKK over a five-year period.

### **Offset Requirement**

Generally 100% of contract value.

Total of 30% of offsets must be delivered in first 4 years (and if achieved or over-achieved, the contractor will be awarded by a discount on the 100% offset requirement.

Products purchased in fulfilment of ICCs must be of Danish origin i.e. not more than 40% foreign content)

### **Direct/Indirect**

Both categories are acceptable.

### **Qualifying Transactions**

New and additional business from a foreign contractor in compensation for receiving the defence contract, technology transfer.

### **Qualifying Industrial Sectors**

Only activities related to defence products, technologies or services.

### **Offset Procedure (role in evaluation and selection of contractor)**

International Cooperation Contract is concluded in the initial bidding period and a formal contract signed 30 days prior to the signing of the main contract by the MoD (Danish Material Command).

## Implementation Modalities

**Fulfilment Period:** negotiated and set out in the ICC.

**Multipliers:** may be approved for activities that contribute to technology transfer and R&D cooperation and investment that enhance the prospects of Danish defence companies with regard to technological development or growth. Multipliers cannot be used to meet the offset requirement of 30% of the contract value being achieved within the first 4 years.

**Banking:** a foreign contractor may request a Banking Arrangement for activities to be applied to an envisaged future ICC. Offset transactions can be placed during a two-year period prior to the signature of the main contract.

**Swapping:** may be entered on condition that the agreement is agreed in writing by both the Danish company and the foreign supplier and authorities of both governments.

**Penalty (Guarantee) for Non Fulfilment:** a bank guarantee must be provided with the MoD for any anticipated shortfall with respect to the 30% obligation. If the penalty is invoked the funds are spent on initiatives to support R&D that can meet future Danish defence needs. Contractors with non-fulfilled commitments may be excluded from future procurement opportunities.

### **Contractor Selection of Offset Recipients:**

Contractors are free to select Danish offset partners based on their business needs.

### **Monitoring and Reporting**

The foreign contractor is required to submit an annual report showing the status of the fulfilled offset commitment (e.g. contracts/invoices) for verification by the MoD.

Source: Danish Embassy in Canada

# CZECH REPUBLIC

## **Legal Basis for Policy or Government Regulations**

Directive for the Implementation of Industrial Cooperation Programmes (2005)

## **Responsible Authority**

Ministry of Industry and Trade supported by an interdepartmental Offset Commission (Ministry of Industry & Trade; Ministry of Defence, Ministry of the Interior; other Ministries as required). Commission coordinates the preparations, negotiations, evaluation, approval and audit of offset arrangements.

## **Policy Objectives**

Transfer of advanced technology and know-how to Czech industry.  
Opening new export opportunities or increases in existing exports.  
Developing small and medium-sized businesses.  
Transfer of foreign capital into the domestic economy.  
Creating employment.  
Supporting new research and development.

## **Threshold Value at which Offsets are Required**

Foreign main contracts: 500M CZK (17M EUR).  
Foreign sub-contractors of domestic primes: 250M CZK (8.5M EUR)

## **Offset Requirement**

Minimum 100%

## **Direct/Indirect**

Both categories are acceptable.  
At least 20% of the contract value must be performed as direct.

## **Qualifying Transactions (eligible activities)**

Technology transfer and know-how.  
Support for R&D and international collaboration.  
Enhancing worker skills.  
Foreign direct investment.  
Export promotion.

## **Qualifying Sectors**

Defence and 'non-traditional sectors' e.g. information technology, bio-sciences, environmental technologies.

## **Procurement Procedure (role in evaluation and selection of contractor)**

Tender documents (Letters of Intent, Request for Proposals) stipulate that a contractor subject to being awarded the contract must enter into an Industrial Cooperation Program. The makeup and assessed value of the ICP is not a criterion in the contractor selection process as negotiations take place after the contractor has been selected. If the contract is awarded to a Czech company, it is required to that commits its foreign subcontractors to enter into an ICP (if the value is over (25M CZK).

## **Modalities of Implementation**

**Fulfilment Period:** not to exceed 10 years from the date of contract sign-off.

**Multipliers:** no

**Banking:** bidders are encouraged to undertake offset qualifying activities prior to the contract sign-off. If a bidder is not awarded the contract, a credit for banked activities can be used against offset commitments on a future contract within 10 years.

**Swapping:** not specified in policy.

**Penalty (Guarantee) for Non-fulfilment:** penalties can vary between 5% and 10% of the non-fulfilled commitment. Payments made against the main contract are tied to the performance of the ICP.

## **Government Role in Contractor Selection of Offset Recipients**

Contractor is free to choose Czech companies based on its business interests.

## **Monitoring and Reporting**

The contractor must submit an annual report to the Offsets Commission for comment and approval.

Source: various commentary

# GREECE

## **Legal Basis for Policy or Government Regulation**

Defence Procurement Law 433 (2006)

Ministerial Decision 248298 (Regarding guidelines for Offset Benefits)

Ministerial Decision 246883 (Regarding the method of evaluation of tenders with award criterion for the most economically advantageous tender)

## **Responsible Authority**

Ministry of Defence is responsible for setting offset requirements and approving and monitoring individual arrangements.

## **Policy Objectives**

Gaining technology, training, technical support for the enhancement of the technological and productive capabilities of the domestic defence industry.

Increase the operational/functional capabilities of the Hellenic Armed Forces

## **Threshold at which Offsets are Required**

Generally 10M EUR for the defence material contract or 10M EUR for the follow-on support contract.

## **Offset Requirement**

Generally 100% of contract value but is set by for each procurement by the MoD.

Greek value-added of activities must be a minimum 35%.

## **Direct/Indirect**

Both categories are acceptable

## **Qualifying Transactions (eligible activities)**

Development and manufacture of products by the domestic defence industry.

Purchases of the products of the domestic defence industry

Transfer of technology and know-how

Provision of technical infrastructure and services to the MoD.

Activities that support the social role of the MoD

## **Qualifying Sectors**

Defence

## **Offset Procedure (role in evaluation and selection of contractors)**

Tender document describes offset requirements.

MoD evaluates bidder proposals: offset percentage (value), content (quality), period of delivery.

Offset arrangement forms part of the main contract.

## Implementation Modalities

**Fulfilment Period:** generally the same as the contract period. A minimum of 60% of the offset commitment must be fulfilled at the mid-point. An extension may be granted if the fulfilment exceeds 80% at the end of the original term.

### Multipliers:

- Product development by domestic industry: 10
- Single/sole source (direct/indirect): 10/5
- Exploitation of licenses (direct/indirect): 6/3
  - o software transfer: 2
  - o provision of technical infrastructure: 4-8
  - o marketing assistance: 6
  - o social benefits: 8

**Banking:** yes; Transfer of offset over-achievement on previous programs can be transferred.

**Swapping:** not specified in policy.

**Penalty (Guarantee) for Non-fulfilment:** 1.5% per month for late implementation; 10% on the non-fulfilled portion.

## Government Role in Contractor Selection of Offset Recipients

Contractor is free to choose Czech companies based on its business interests.

## Monitoring & Reporting

Responsibility assigned to Ministry of Defence

Source: <http://www.mod.mil.gr>

# HUNGARY

## **Legal Basis for Policy or Government Regulations**

Government Degree on the Specific Rules of Acquisition of Goods and Services for Military, Public Order and Surveillance Use, related to basic Defence and Security Interests (2004). Directive 23 (2008) of the Ministry for National Development and Economy and General Rules for Offsets

## **Policy Objectives**

Development of the economy and national defence industry capabilities and the competitiveness and integration of defence companies into the European defence supply chains.

## **Responsible Organization**

Ministry for National Development and Economy (Offsets Committee)

## **Threshold at which Offsets are Required**

1B HUF (4M EUR)

## **Offset Requirement**

100% of imported value of the equipment being purchased.  
20% to be purchases  
40% related to the procurement  
20% to be investments  
Marketing and trade development activities not to exceed 20%

## **Direct/Indirects**

Both categories accepted.

## **Eligible Activities**

Enhancement of the aerospace, defence and security sectors  
R&D and technology transfer & incubation (spin-offs to SMEs)  
Regional development projects  
Training and development  
Marketing assistance

## **Qualifying Industrial Sectors**

Defence, aerospace and security, information technology, environmental, bio and life science.

## **Offset Procedure (role in the evaluation and selection of contractors)**

Offset proposals although separate are submitted with the technical and price quotation. Offset commitments are negotiated with the Ministry of National Development and Economy and set out in a separate agreement from the main contract,

## Implementation Modalities

**Fulfilment Period:** generally 12 months after completion of the main contract.

**Multipliers:**

- Priority areas of investment: 5
- Sale of priority products: 5

**Banking:** credit may be given to offset activities in advance of the contract.

**Swapping:** is allowable.

**Penalty (Guarantee) for Non-fulfilment:** performance bonds at least 6% of the total value of the offset commitment with the draw down rate for non-fulfilment set out in the offset agreement.

## Government Role in the Selection of Offset Receivers

No designation, bases on market and contractors business interest.

## Monitoring

Responsibility of the Offsets Committee (Ministry of National Development and Economy).  
Contractors are required to submit annual status reports

Source: [www.nfgm.gov.hu/feladataink/kulgazd/ellentetelezes](http://www.nfgm.gov.hu/feladataink/kulgazd/ellentetelezes)



# ITALY

## **Legal Basis or Government Regulation**

No formal offset policy. General Secretariat of Defence internal Directive. Offsets applied to each procurement on a case-to-case basis.

## **Responsible Authority**

Ministry of Defence (National Armaments Director)

## **Policy Objectives**

Maintain and strengthen the expertise, capacity and export potential of Italy's defence industrial base.

## **Threshold at which Offset are Required**

5M EUR (if applied)

## **Offset Requirement**

Set by negotiation from 75% to 100% of contract value.

## **Direct/Indirect**

Both categories are accepted. Direct offset preferred. Strong emphasis on Italian defence industry being able provide integrated logistics management and support and maintain foreign purchases equipment through its life-cycle.

## **Eligible Activities**

Involvement in the development, production and support of the equipment being purchases.  
Transfer of technology of interest to the MoD

## **Qualifying Industry Sectors**

Defence

## **Procurement Procedure (role of offsets in evaluation and selection of contractors)**

Offset arrangement negotiated with contractors on a contract specific basis. Agreement must be reached prior to approval of main procurement contract. Offset commitment and terms and conditions are embedded into the main contract.

## **Implementation Modalities**

**Fulfilment Period:** negotiated on a case-by-case basis.

**Multipliers:** range from 1 to 3:

- Technology already possessed by domestic industry: 1
- Technology partially possessed by the domestic industry: 2
- Technology is totally new: 3

**Banking:** No. But transfer of over realized commitment on one project to another running concurrently is allowed.

**Swaps:** considered if in the interest of the domestic defence industry.

**Penalty (Guarantee) for Non-fulfilment:** maximum 10% of the non-fulfilled commitment.

## **Selection of Offset Receivers**

Contractors are free to select partners within the domestic defence industry.

## **Monitoring and Reporting**

Contractors are required to submit bi-annual progress reports to the MoD.

Source: various commentary

# NETHERLANDS

## **Legal Basis for Policy or Government Regulation**

Protocol between Ministry of Economic Affairs and Ministry of Defence  
Offset Guidelines (2005)

## **Responsible Authority**

Ministry of Economic Affairs (Enterprise & Innovation) and Ministry of Defence (Commissariat  
Military Production)

## **Policy Objectives**

Contribute to the industrial base through technological advancement and R&D  
Improving capabilities and production.  
Expanding markets.  
Increasing employment

## **Threshold at which Offset are Required**

5M EUR

## **Offset Requirement**

100% of contract value (or some pre-determined percentage)  
10% related to the involvement of Netherlands industry and public institutes in R&D and  
technology cooperation programs.  
20% (requested, not mandatory) involvement of Netherlands SMEs.  
Causality must be shown

## **Direct/Indirect**

Both categories are acceptable but preference for direct.

## **Qualifying Transactions (eligible activities)**

Activities with high involvement of Netherlands defence industry (co-development, integration,  
production and support of equipment.  
Technology and knowledge transfer  
Activities involving SMEs.  
Skills development and training

## **Qualifying Sectors**

Both defence and civil.

## **Offset Procedure**

Offset requirements are set out in tender documents (Request for Proposal).  
Offset agreement is signed on achieving 40% firm commitments (transactions).  
Offset agreement is concluded prior to the main procurement contract.

## **Implementation Modalities**

**Fulfilment Period:** varies based on value of the offset agreement and the duration of the contract, to a maximum of 10 years.

**Multipliers:** can be applied (since 2004):

- Technology transfer, R&D: 10 for defence sector and 3 for civil sector
- Involvement of Netherlands firms early in international programs: 5
- Marketing assistance: 5
- Investments in venture capital funds: 10

**Banking:** possible for defence activities and to be used within 3 years.

**Swapping:** favourable to concept.

**Penalty (Guarantee) for Non-fulfilment:** if commitment at mid-point milestone is not met, the commitment is increased by 15% of the non-fulfilled part. If commitment is not met at termination date, the obligation is increased by 30% of the unfulfilled part. No bank guarantee is required.

## **Government Role in Contractor Selection of Offset Recipients**

Contractor is free to choose Netherlands companies based on its business interests.

## **Monitoring & Reporting**

Contractors are required to send progress reports to Ministry of Economic Affairs twice a year. Ministry reports annually to Parliament.

Source: <http://www.cmp.ez.nl>

# NORWAY

## **Legal Basis of Policy or Government Regulation**

Acquisition Regulations for the Defence Sector (modified in 2007)

## **Responsible Authority**

Ministry of Defence (Advisory Group reporting to the Minister, and comprising representatives from the Ministry of Industry and Trade, Norwegian Defence Research Establishment, and the Norwegian defence industry).

## **Policy Objectives**

Contribute to the development of a competitive industry within areas of importance for the Norwegian Armed Forces.

## **Thresholds at which Offsets are Required**

50M NOK (6.7M EUR)

## **Offset Requirement**

100% of contract value (if Norwegian content on a transaction is higher than 80%, its total value will be counted). Transactions with less than 20% Norwegian content are not counted. Normally the offset activities must be technologically equal or higher than the equipment or system being procured.

## **Direct/Indirect**

Normally not required level of direct offsets.

Category I: strategic offsets important to the armed forces and national security (typically 50% of offset arrangement must be in this category).

Category II: non-strategic defence or security offsets

Category III: 'dual-use' defence or non-defence offsets (generally to be restricted to 25% of the offset arrangement)

## **Qualifying Transactions (eligible activities)**

Activities that target technology competencies important to the Norwegian Armed Forces: information and communication, systems integration, weapons and missile propulsion, autonomous weapons systems, underwater sensors, simulation, materials, and naval.

Activities involving:

Technology transfer and R&D cooperation.

Purchase of defence and security-related and dual-use products.

Market development assistance.

## **Qualifying Industrial Sectors**

Defence and security related and dual-use.

## **Offset Procedure (role in evaluation of contractor)**

Offset requirement stated in tender documents.

While technical performance, cost and time to delivery are the essential evaluation criteria, the offset proposal of bidders given 'considerable' weight.

The Industrial Cooperation Agreement is concluded with contractor.

## Implementation Modalities

**Fulfilment Period:** is negotiated with contractor.

**Multipliers:** value of activities may be awarded multiplier:

- Technology collaboration: 1 to 5
- Technology/know-how transfer: 1 to 2.5
- Cooperation related to R&D: 1 to 5
- Direct Investments: 1 to 5
- Market assistance: 1 to 2
- Involvement of SMEs: 1.3 to 1.5

**Banking:** Once commitment is met on a project, MoD will decide on granting a 'banking facility' to be applied against commitments on future contracts (maximum 40%, valid for 5 years).

**Swapping:** 'clean' sweeps' between countries on a bilateral basis will be positively considered.

### **Penalty (Guarantee) for Non-fulfilment).**

## Government Role in Contractor Selection of Offset Recipients

Contractor is free to choose Czech companies based on its business interests.

## Monitoring & Reporting

MoD (Norwegian Defence Logistics Agency) is responsible for monitoring offset (IC) arrangement. Contractors are required to submit annual status report.

Source:

[http://www.regjeringen.no/upload/FD/Reglement/Gjenkjoepsbestemmelser\\_14mars2008\\_engelsk.pdf](http://www.regjeringen.no/upload/FD/Reglement/Gjenkjoepsbestemmelser_14mars2008_engelsk.pdf)

## **POLAND**

### **Legal Basis or Government Regulations**

Act (1999) on Certain Compensation Agreements Concluded in Connection with Contracts for Deliveries for the Purposes of Defence and Security of the State.

Regulations of the Council of Ministers (2007) Concerning Specific Rules of Counting the Offset obligations of a Foreign Supplier of Armament or Military Equipment Towards the Value of the Offset Agreement.

### **Responsible Authority**

Ministry of the Economy (Offsets Committee)

### **Policy Objectives**

Development of Polish knowledge-based industry, especially the defence industry.

Transfer of new technologies to domestic industry.

Supporting R&D within industry and institutions of higher education and research

Opening new export markets for Polish goods and services.

Creation of new enterprises in the regions.

### **Threshold at which Offsets are Required**

5M EUR

### **Offset Requirement**

Minimum 100% of contract value.

Activities of a complexity and technology level that are equivalent to the nature of the specific procurement.

### **Direct/Indirect**

Both categories accepted.

### **Eligible Activities**

Transfer of technology that: assist the offset receiver to manufacture on the basis of the transferred technology; allows the offset receiver to modify or further develop the purchased products; grants the offset receiver the rights to sell products in foreign markets; opens new export opportunities and increases the sales of the offset receiver.

Participation of domestic firms in the support, maintenance and modernization of the foreign equipment being purchased.

Direct purchases of Polish products and services.

Financial support granted to an offset receiver.

Capital investments into the domestic defence industry.

### **Qualifying Industry Sectors**

Defence, Space, information technology, telecommunications, optoelectronics, bio-technology, nanotechnology, renewable power generation, environmental protection.

### **Procurement Procedure (role of offsets in evaluation and selection of contractors)**

Offset requirements (e.g. amount, evaluation criteria) are set out in the tender document.

Contractors submit offset proposals along with technical and price offer. Proposals are

evaluated and the results sent to the warding entity to integrate them into the selection process. Negotiations are held with selected contractor to finalize the offset agreement but the initial offer cannot be reduced.

### **Implementation Modalities**

**Fulfilment Period:** determined on a case-by-case basis but not to exceed 10 years.

**Multipliers:**

- Directs: 1 to 2
- Indirects: 0.5 to 1.5
- Activities of high interest (economy, defence): 2 to 5

**Banking:** for activities placed into the domestic industry 36 months prior to the commencement of the procurement.

**Swaps:** not specified.

**Penalty (Guarantee) for Non-Fulfilment:** set on a case-by-case basis (generally are very high). Bank guarantee may be required.

### **Selection of the Offset Recipients**

Contractor free to make selection based on market and business interests. Ministry of Economy (Offsets Commission keeps a catalogue of capability and other needs of entities in the defence industry and makes available to foreign companies.

### **Monitoring and Reporting**

Contractors are required to submit bi-annual progress reports.

Source: <http://www.mg.gov.pl/English/ECONOMY/Offset+Programmes/Basic+information/>



# PORTUGAL

## **Legal Basis or Government Regulation**

Law on Military Procurement and Degree 154 (2006)

## **Responsible Authority**

Ministry of Defence (Permanent Offset Commission (CPC). The (CPC) is responsible for formulating and implementing the Offset Policy and for evaluating and approving offset proposals. The CPC has representatives from the MoD, the Ministry of Economy and Innovation, the Ministry of Science and Technology, and the Ministry of Finance and Public Administration. It is supported by a consultative council comprising representative of the armed forces and industry.

## **Policy Objectives**

Contribute to the development of Portuguese economy and the defence industry's capabilities, in order to enhance its competitiveness and integration with the European defence industry value chains.

## **Threshold at which Offsets are Required**

10M EUR

## **Offset Requirements**

100% of contract value

Offsets must be relevant to country's technology priorities and have the potential for a significant impact on the innovation capacity of the domestic industry.

30% of the offset proposal must be firmly defined.

## **Direct/Indirect**

Both categories are acceptable, no ratios specified.

Domestic firms that are recipients of offsets above 10M EUR must have a subcontracting for 15% of the value.

## **Eligible Activities**

Foreign direct investment

Technology transfer

Establishment of long-term supply partnerships

Subcontracting/purchases

Technical support and training in new capabilities.

## **Qualifying Industrial Sectors**

Defence and non-defence. Non-defence priority sectors are: aerospace, automotive, communications and information systems, renewable energy. The CPC may set a minimum percentage of defence offsets.

## **Procurement Procedure (role of offsets in evaluation and selection of contractors)**

The offset requirement and eligibility and evaluation criteria are stipulated in the tender documents. Proposals from bidders are evaluated based on a weighted sum of the proposed offsets (value, direct/indirect, technological and innovation impact, execution period, and degree

of firmness of commitments). Negotiations are held with the contractors having the most attractive proposals and they may be revised. The results of the offset evaluation are integrated into the overall procurement decision and an agreement finalized with the selected contractor.

### **Implementation Modalities**

**Fulfilment Period:** negotiated (usually 6 years).

**Multipliers:** 1 to 5, in consideration of the economic impact and strategic and technological alignment to national priorities. For projects related to the defence industry not less than 2, and for the life-cycle support off the equipment at least 2.5.

**Banking:** accepted activities may be banked for 5 years.

**Swapping:** not specified.

**Penalty (Guarantee) for Non-fulfilment:** bank guarantee of 15% of the total offset commitment.

### **Selection of the Offset Receivers**

Contractors are free to select Portuguese firms based on market and business interests.

### **Monitoring and Reporting**

Contractors must make periodic status reports to the CPC.

Source: various commentary

# SPAIN

## **Legal Basis or Government Regulation**

Secretary of State for Defence Directive

## **Responsible Authority**

MoD (National Armaments Director) supported by the Industrial Cooperation Agency (a Public company, chaired by the Secretary of State for Defence and having representation from the Ministry of Science and Technology).

## **Policy Objectives**

Develop a competitive defence industrial base.

Foster and consolidate national security of supply and the whole life cycle logistical support and maintenance of major military systems.

Develop the strategic defence industrial sectors.

## **Threshold at which Offset are Required**

1M EUR for new acquisitions and any value of logistics and support contracts flowing from equipment acquisition contracts.

## **Offset Requirement**

Generally 100% of contract value; can be negotiated lower.

Offsets applied to foreign contractors of equipment in government-to-government arrangements.

## **Direct/Indirect**

Both categories acceptable but directs favoured (generally needs to be 60% of offset commitment). Required ratio varies from contract to contract.

## **Eligible Activities**

Co-production (licenses and patents)

Purchase of domestic goods and services

Transfer of technology and know-how

R&D collaboration

Provision of equipment, tools, and software

Technical management related to production and integrated logistic support.

## **Qualifying Industry Sectors**

Preference for defence or civil with a suitable dual-use technology content.

## **Procurement Procedure (role of offsets in evaluation and selection of contractor)**

Contractors bidding on procurements (over the specified value thresholds) must sign a letter committing to enter into an Industrial Cooperation Agreement. The ICC is negotiated between the MoD and the contractor at the same time and integral to the price negotiations (seen to optimize the procurement outcome).

## **Implementation Modalities**

**Fulfilment Periods:** generally the period of the contract.

**Multipliers:** generally not used.

**Banking:** not specified.

**Swapping:** may be considered.

### **Penalty (Guarantee) for Non-fulfilment:**

- at specified milestones, 20% increase in the total offset commitment; and
- at the end of the ICC, 10% of the value the unrealized commitment.

## **Contractor Selection of Offset Recipients**

Contractors have full freedom to choose national partners/suppliers.

## **Monitoring and Reporting**

Periodic meeting between contractor and the Industrial Cooperation Agency.

Source: [www.mde.es](http://www.mde.es)

# SWEDEN

## **Legal Basis or Government Regulation**

Act of Public Procurement; Industrial Participation Programme (1999).

## **Responsible Authority**

Ministry of Defence (FMV). The FMV must consult the Armed Forces in deciding the application of offset (IP) to specific defence procurements.

## **Policy Objectives**

Support the long-term protection of essential Swedish defence and security interests.  
Secure the participation of the domestic defence industry manufacturing.  
Promote the transfer of advanced technology to the defence industry  
Increase the export of Swedish defence-related products, systems, and advanced technology

## **Threshold at which Offsets are Required**

100M SEK (10M EUR)

## **Offset Requirement**

Minimum of 100% of the contract value.  
Offsets are not required from companies of countries that do not have offset policies.

## **Direct/Indirect**

Both categories are acceptable.

## **Eligible Activities**

Technology and know-how transfer.  
Technology and R&D cooperation/collaboration.  
Purchase of defence goods and services.  
Investments that enhance the defence industry's competitiveness.  
Activities that contribute to global market access by Swedish companies.

## **Qualifying Industrial Sectors**

Only defence (since 2004)

## **Procurement Procedure (role of offsets in evaluation and selection of contractors)**

Offset (IP) requirement specified in the tender documents (Request for Proposal). Contractors' offset proposals are evaluated and must be approved prior to the award of the main contract.

## **Implementation Modalities**

**Fulfilment Period:** generally tied to the duration of the contract.

**Multipliers:** not normally applied. May be considered for R&D not tied to contract and that is performed in Sweden, for the participation of SMEs, and in support of key priorities of the Armed Forces.

**Banking:** activities from the issuance of the tender documents to the approval of the contract can form part of a contractors offset commitment. Over-achievement of the offset commitment can be banked up to 3 years to be applied to commitments on future contracts.

**Swapping:** will be considered where Swedish industry will benefit; normally limited to 15\$ of the total IP commitment.

**Penalty (Guarantee) for Non-fulfilment:** set out in contract; normally 5% of the unrealized commitment at each milestone.

**Selection of Offset Receivers**

Contractors are expected to select the most cost-effective option in choosing Swedish partners/suppliers.

**Monitoring and Reporting**

Contractors are required to submit annual progress reports.

Source: <http://www.dso.uktradeinvest.gov.uk/ip.htm>

# TURKEY

## **Legal Basis or Government Regulation**

Industrial Participation/Offset Directive (2007)

## **Responsible Authority**

Ministry of Defence, Undersecretariat for Defence Industries (SSM).

## **Policy Objectives**

Create a defence industry capable of meeting the countries defence needs (goal is to increase portion of defence systems produced in-country from 25% (2007) to 50% by 2010)

Secure high technology and know-how.

Attract new investment in the defence industry and other industrial sectors.

Increase exports of defence products and services (goal is to increase from 300K USD to 1M USD annually by 2011).

Establish long-term relationships between Turkish companies and foreign defence firms.

## **Threshold Value at which Offsets are Required**

10M USD (7M EUR)

## **Offset Requirement**

Minimum of 50% of the contract value.

Only Turkish value-added is credited; if TVA is above 50%, the total value of the activity is credited.

Causality must be shown.

## **Direct/Indirect**

Only direct offsets are accepted (definition of 'direct' though is broad to include all activities directed at the defence sector.

## **Eligible Activities**

New foreign direct investment into domestic defence industry

Technology and know-how transfer

Suppliers providing offsets will be expected to select the most cost-effective alternative for the offset fulfilment in Sweden.

Purchases of defence products and services

Marketing and trade promotion assistance

## **Qualifying Industry Sectors**

Defence

## **Procurement Procedure (role of offsets in the evaluation and selection of contractors)**

Offset requirement are set out in main tender document. Proposals are submitted by contractors separate from the technical and price offers. Evaluations assign different weights: a factor of 1 for Local Content and Exports; and up to 4 for technology and R&D. Offset agreement is signed at same time as main contract.

## **Implementation Modalities**

**Fulfilment Period:** tied to the duration of the main contract.

### **Multipliers:**

- Complex Systems: 3
- Software: 3
- Sub-systems: 2
- Parts and components: 1

**Banking:** If the activity was placed in Turkey during the bidding phase of the main contract. Over-achievement of offset commitment on one project can be banked for 5 years for credit against commitments on future procurements.

**Swapping:** not specified.

**Penalty (Guarantee) for Non-fulfilment:** a bank guarantee of 6% of the total offset commitment

## **Selection of the Offset Recipient**

Contractors can select those Turkish partners/suppliers that best meet their market and business interests.

## **Monitoring and Reporting**

Contractors must submit periodic reports to the SSM)

Source: MoD contact



## United Kingdom

### Legal Basis or Government Regulation

Industry Participation Policy (2003) and revised to accord to Defence Industrial Strategy (2007).

### Responsible Authority

Ministry of Defence for Policy overall and for implementation the Department of Trade and Investment (Defence and Security Group) since 2008; formerly the Ministry of Defence (Defence Export Services Agency (DESO)).

### Policy Objectives

Stimulate work and business opportunities for UK companies and secure their access to overseas markets by generating long-term partnerships with foreign companies.

### Threshold at which Offsets are Required

12M EUR

### Offset Requirement

No set percentage of the contract value but up to a maximum of 100%. Bidders propose level and actual amount negotiated.

Must be high quality defence work.

### Direct/Indirect

Direct benefits as well as indirect intellectual property are acceptable.

### Eligible Activities

Contracts for the development or production of defence equipment.

Contracts related to defence R&D.

Technology transfer.

Marketing assistance

### Qualifying Industry Sectors

Defence only.

### Procurement Procedure (role of offset in evaluation and selection of contractors)

Foreign contractors invited to annex offset (IP) proposals to their overall bids. During the bidding phase offset (IP) are negotiated with the bidders and set out in a Letter of Agreement. Proposals are evaluated in terms of quality, quantity and risk and contractors past performance on previous offset commitments. Result of the evaluation from a criterion of the contractor selection process. Once the main contract is concluded, the LoA is activated.

### Implementation Modalities

**Fulfilment Period:** generally the duration of the contract.

**Multipliers:** None

#### **Banking:**

**Swaps:** actively supports swaps/abatement

**Penalties (Guarantee) for Non-fulfilment:** none

**Selection of Offsets Recipients**

Contractors are free to choose UK companies with who they wish to place offset activities.

**Monitoring and Review**

Contractors must submit semi-annual progress reports.

Source:

<http://www.dso.uktradeinvest.gov.uk/ip.htm>

## Appendix 3

## Endnotes

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- <sup>i</sup> Also referred to as Industrial Benefits, Industrial Participation and Industrial Cooperation Programs.
- <sup>ii</sup> Saal, D.S., 'The Impact of Procurement-Driven Technological Change on U.S. Manufacturing Productivity Growth', *Defence Economics*, 2001, 12.
- <sup>iii</sup> Benoit, E., 'Defence Spending and Economic Growth', *DC Health*, 1973.
- <sup>iv</sup> Ram, R., 'Conceptual Linkages between Defence Spending, Technological Change, and Economic Growth', Westview 1993.
- <sup>v</sup> Hartley, K., Sandler, T. 'The Economic of Defence Spending: An International Survey, Routledge, 1990.
- <sup>vi</sup> Hooker, M., Knetter, M. 'The Effects of Military Spending on Economic Activity, *Journal of Money, Credit and Banking*, 29, 1997.
- <sup>vii</sup> Brumm, H. 'Military Spending and Economic Growth', *Defence Economic*, 2, 1997.
- <sup>viii</sup> Atesoglu, S., Mueller, M. 'Defence Spending and Economic Growth', *Defence Economics*, 1990
- <sup>ix</sup> Atesoglu, S., 'Defense Spending Promotes Aggregate Output in the United States', *Defence and Peace Economics*, 13, 2002
- <sup>x</sup> Ahmed, S. 'Temporary and Permanent Government Spending in an Open Economy', *Economic Development*, 13 2202
- <sup>xi</sup> Nigel Wilkins, 'Defence Expenditures and Economic Growth: Evidence from a Panel of 85 Countries, School of Finance and Economic, University of Technology, Sydney, Australia.
- <sup>xii</sup> Bremmer, D, Kesslering, R., 'The Impact of Defence Spending on the Economy', *Arkansas State University*, 2007.
- <sup>xiii</sup> Solomon, B., *Canadian Department of National Defence*, Ottawa, 1999.
- <sup>xiv</sup> 'Assessment of the Economic Benefits Resulting from the Operations of the NATO Flying Training in Canada Program at Moose Jaw (Saskatchewan)', *Western Economic Diversification Canada*, 2002.
- <sup>xv</sup> Government budget appropriations or outlays on R&D (GBAORD) are all appropriations allocated to R&D in federal budgets and therefore refer to budget provisions, not to actual expenditure. Provincial or state government appropriations are included where their contribution is significant. Unless otherwise stated, data include both current and capital expenditure and cover not only government-financed R&D performed in government establishments, but also government-financed R&D in the business enterprise, private non-profit and higher education sectors, as well as abroad.
- <sup>xvi</sup> Defining 'national security interests' rests with individual member states. It cannot however just be economic in nature.
- <sup>xvii</sup> While not all WTO member countries are signatories to the GPA, they include: Canada, the United States, the EU and its 27 member states, Norway and Japan.

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<sup>xviii</sup> Article 296 of the EU Treat allows member states to exempt defence and security contracts if this is necessary for the protection of their essential security interests. This exemption has recently carried over to Directive 2009/81 that is the foundation for creating a single European defence equipment market.

<sup>xix</sup> Kelly, G., Mulgan, G., Muero, S., 'Creating Value: An Analytical Framework for Public Sector reform', UK Cabinet Office, 2005.

<sup>xx</sup> Victorian Government Submission to the Senate Foreign Affairs, Defence & Trade Committee, 'Inquiry into Naval Shipbuilding in Australia', 2006

<sup>xxi</sup> The UK defence industry is a core component of the manufacturing sector with a turn-over of 15 billion per annum and employing directly and indirectly 350,000 people. It accounts for 3% of the UK's manufacturing output.

<sup>xxii</sup> The National Defence Industries Council normally meets four times a year and is the forum in which industry meets the MoD, Department of Business Enterprise and Regulatory Reform, U.K .Trade and Investment and HM Treasury, alongside Trade Union representatives. It is normally chaired by the Defence Secretary or the Minister of State for Defence Equipment and Support (in MoD).

<sup>xxiii</sup> The U.K. has a 21% of the defence export market, 2<sup>nd</sup> only to the US defence industry.

<sup>xxiv</sup> The UK MoD invests approximately £2 billion per annum in defence-related R&D of which 450 million is for early stage research.

<sup>xxv</sup> The UK Government has a national target to increase (combined government and industry) R&D investment to 2.5% of GDP by 2014 from its 2005 level of 1.9%.

<sup>xxvi</sup> Industry input was through the National Defence Industries Council's Research and technology sub-group and sectoral workshops.

<sup>xxvii</sup> Johnman' L ., Murphy, H., 'A Triumph of Failure: the British Shipbuilding Industry and the Offshore Structures Market', 2002

<sup>xxviii</sup> The U.K. Government did exercise its 'buying power' when it awarded the design of Future Aircraft Carrier project to Thales but then appointed BAE Systems as the prime contractor.

<sup>xxix</sup> Defence spending is set to increase by 3% annually in real terms until 2016 (a total of \$39 billion extra for new capital investment programs.

<sup>xxx</sup> Naval Shipbuilding and Repair Sector Plan, Australian Ministry of Defence, Defence Material Organization, 2004.

<sup>xxxi</sup> Ships taken out of service in the 15 to 20-year period would be sold on the second-hand market for which there is a forecast growing demand in the Region.

<sup>xxxii</sup> The Aerospace Industry – an Integral part of Innovation Sweden 2005

<sup>xxxiii</sup> Innovation Sweden 2004

<sup>xxxiv</sup> 'The Common New Generation Frigate Programme', Defence Committee, House of Commons, Stationary Office, London, 1999.

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<sup>xxxv</sup> Offsets in Defense Trade Eleventh Report to Congress, January 2007, U.S. Department of Commerce's Bureau of Industry and Security Office of Strategic Industries and Economic Security

<sup>xxxvi</sup> European Union, Code of Conduct on Offsets, Brussels, October 24, 2008

<sup>xxxvii</sup> DFARS 225.7303-2(3)(ii)

<sup>xxxviii</sup> Acquisitions for Foreign Military Sales, December 9, 2005.