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The National Shipbuilding Procurement Strategy: A Five-Year Assessment

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The National Shipbuilding Procurement Strategy: A Five-Year Assessment
(Background Paper)

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THE NATIONAL SHIPBUILDING PROCUREMENT STRATEGY: A FIVE-YEAR ASSESSMENT

1 INTRODUCTION

In June 2010, the federal government unveiled its National Shipbuilding Procurement Strategy (NSPS), a continuous long-term shipbuilding plan to renew the fleets of the Royal Canadian Navy (RCN) and the Canadian Coast Guard (CCG) over the next 20 to 30 years.¹ The NSPS is subdivided into three components:

- a large-ship construction program (ships of more than 1,000 tonnage displacement);
- a small-ship construction program (ships of less than 1,000 tonnage displacement); and
- a ship repair, refit and maintenance program.²

The main purpose of the NSPS is to eliminate “boom and bust” cycles of naval procurement that exist in Canada. Since the Second World War (1939–1945), it has been the policy of the federal government to procure ships in Canada for the RCN, the CCG and other federal fleets.³ As a result, almost all of the ships acquired over the last 70 years have been built domestically.⁴

Over the decades, procurement of federal government ships has been cyclical and irregular, with long periods of inactivity between naval projects. As a case in point, no major warships have been built in Canada since the completion of the Halifax class frigates and Kingston class Maritime Coastal Defence Vessels (MCDV) projects in the 1990s. Before that, no warship had been constructed in Canada since the completion of the Iroquois class destroyer project in the 1970s.⁵

As a result of this cyclical pattern, shipyards have historically geared up for major government contracts, expanded their operations, modernized their facilities, invested in new equipment, and hired and trained large work forces. However, once the contracts have been completed, there has not been enough work to keep the expanded facilities in operation, and the shipyards have had to scale back production and lay off large numbers of employees. Because of these “boom and bust” cycles of production, Canada’s capability to construct warships and other specialized government ships has had to be rebuilt almost from scratch every time a new procurement program has been launched.

The NSPS was introduced to change this shipbuilding dynamic and implement a more strategic procurement process that will also sustain the Canadian shipbuilding industry. The strategy’s main goal is to provide long-term, predictable federal shipbuilding work in Canada. To that end, the NSPS instituted a new governance structure, as well as a new model for undertaking complex naval procurement projects in Canada.⁶

Under the NSPS, the federal government intends to build 38 large ships of more than 1,000 tons and 116 small ships of less than 1,000 tons in Canada for the CCG and RCN over the next 30 years. It also intends to award a number of contracts for the repair, refit and maintenance of the CCG and RCN fleets in that period. According to the federal government, the NSPS “represents a historic and important shift in shipbuilding procurement, moving from a project-by-project basis to a long-term approach” that will help “create and maintain an effective and efficient long-term shipyard capability in Canada.”⁷

The strategy is projected to generate significant economic benefits for Canada’s shipbuilding sector and supporting industries over the coming decades. When the federal government introduced the NSPS in 2010, Canada’s shipbuilding industry employed 6,813 people and generated total annual revenues of \$1.1 billion.⁸ The Canadian Association of Defence and Security Industries (CADSI) estimated that work related to NSPS projects could employ up to 15,000 workers across Canada and yield more than \$2 billion in economic benefits annually over the next 30 years.⁹ Worth an estimated \$60 billion over 30 years,¹⁰ the NSPS represents “the largest procurement sourcing arrangement in Canadian history,” according to Public Works and Government Services Canada (PWGSC).¹¹ A significant expansion of the Canadian shipbuilding industry and its revenues can therefore be expected under the NSPS in the years ahead.

In June 2015, the NSPS celebrated its fifth anniversary. This milestone provides an opportunity to take note of progress made in the implementation of the strategy over the past five years and some of the opportunities and challenges ahead. This paper provides a general overview of the NSPS by category of program and highlights key milestones between June 2010 and June 2015.

2 LARGE-SHIP CONSTRUCTION PROGRAM

The large-ship construction program is the largest and most expensive component of the NSPS. Work related to this component has been ongoing since the NSPS was introduced in June 2010. Up to 38 ships of more than 1,000-ton displacement are to be constructed under the large-ship construction program. More than 60% of those ships will be for the RCN (23 ships). The remaining 40% will be for the CCG (15 ships). The cost of acquiring those large ships is currently estimated at almost \$38 billion.

The large-ship construction program is being implemented in several phases. The first phase consisted in the selection of the shipyards, one for the construction of combat ships and another for the construction of non-combat ships. The second phase pertained to the establishment of a strategic working relationship with the selected shipyards through the signing of umbrella agreements. Preparing the shipyards and finalizing the ship designs was undertaken in the third phase. The large-ship construction program is currently at the start of the fourth and final phase, which is the construction of the ships.¹² This phased approach represents a new way of undertaking naval procurement in Canada.

2.1 THE 2010–2011 SHIPYARD SELECTION PROCESS

On 20 September 2010, the federal government issued a Solicitation of Interest and Qualifications (SOIQ) whereby shipbuilders interested in participating in the NSPS large-ship construction program were encouraged to submit responses over the subsequent three weeks.¹³ On 8 October 2010, the results of the qualification process were made public. Five Canadian shipyards were shortlisted to partake in the NSPS's Request for Proposal (RFP) process:

- Davie in Quebec;
- Irving Shipbuilding's Halifax Shipyard in Nova Scotia (Halifax Shipyard);
- Seaspan's Vancouver Shipyards in British Columbia (Vancouver Shipyards);
- Kiewit in Ontario; and
- Seaway in Ontario.¹⁴

The NSPS RFP was officially released on 7 February 2011.¹⁵ The RFP closed on 21 July 2011. Of the five qualified shipyards, only three submitted bids for the RFP process: Davie, Halifax Shipyard and Vancouver Shipyards.¹⁶ In October 2011, the federal government announced the results of the RFP process and the selection of two shipyards to deliver the NSPS's large-ship construction program: Halifax Shipyard and Vancouver Shipyards.¹⁷

It should be noted that the selection process was not meant to result in a firm contractual engagement between the federal government and the selected shipyards. According to PWGSC, it was meant only to "establish a strategic relationship with two Canadian shipyards, selected through an open and fair national competition" and to "designate them as sources of supply, one for combat vessels and the other for non-combat vessels."¹⁸ It did not provide a guarantee that any ship design or construction contracts would be awarded to those shipyards.¹⁹

Nonetheless, Halifax Shipyard was selected to deliver the combat package of the NSPS, which consisted of 21 vessels for the RCN:

- Arctic/Offshore Patrol Ships (six ships); and
- Canadian Surface Combatants (15 ships).

Vancouver Shipyards was selected to deliver the non-combat package of the NSPS, which consisted of seven vessels for the CCG and the RCN:

- Joint Support Ships (two ships for the RCN);
- Offshore Fisheries Science Vessels (three ships for the CCG);
- Offshore Oceanographic Science Vessel (one ship for the CCG); and
- Polar Icebreaker (one ship for the CCG).²⁰

At the time, the total value of the combat and non-combat packages was estimated at \$33 billion over 20 to 30 years, with the combat package valued at approximately \$25 billion and the non-combat package about \$8 billion.²¹

The NSPS shipyard selection process introduced a new way for the federal government to do business with the Canadian shipbuilding industry. Never before had the federal government used the RFP process to establish a strategic working relationship with specific shipyards and to designate them as sources of supply for the construction of combat and non-combat ships. In the past, a shipyard would have been selected to undertake a specific ship project, and a contract would normally have been the end result of that process.

2.2 THE UMBRELLA AGREEMENTS OF 2012

In January 2012, umbrella agreements were signed with the two selected shipyards. According to PWGSC, the umbrella agreements are “long-term strategic sourcing arrangements that define the working relationships and administrative arrangements under which the government will negotiate fair and reasonable individual contracts” with the selected shipyards to build ships.²² Although they “are not contracts” in and of themselves and “make no commitments for future work,”²³ the umbrella agreements “highlight the principles and general intent of the relationship between Canada and the designated shipyard. They describe certain preconditions to contract awarding and other specific terms to be included in the contracts.”²⁴

That being said, there is no contractual obligation to allocate all of the NSPS’s large-ship construction program contracts to the selected shipyards under the umbrella agreements. With the present system, the shipyards must still fulfill certain commitments and preconditions defined in the umbrella agreements in order to obtain contracts. These include, among other things, getting their workforces and infrastructures ready for the construction of the CCG and RCN ships.²⁵ Failure to do so could potentially result in the termination of an umbrella agreement with the federal government. As far as is known, the NSPS agreements mark the first time that the federal government has signed umbrella agreements with Canadian shipbuilders.

As a result of these umbrella agreements, both Halifax Shipyard and Vancouver Shipyards have been actively engaged in the process of upgrading, expanding and preparing their shipyards for production. This work is valued at approximately \$300 million at Halifax Shipyard and \$200 million at Vancouver Shipyards. As emphasized by PWGSC, “These upgrades are at no cost to Canada.”²⁶ They are financed by the shipyards themselves, although each shipyard is receiving some financial assistance from its respective provincial government.²⁷ Shipyard modernization work began in the fall of 2012.²⁸ It was completed at Vancouver Shipyards in November 2014²⁹ and is expected to end at Halifax Shipyard by September 2015.³⁰

2.3 THE 2012–2013 PRELIMINARY CONTRACTS

Since the signing of the umbrella agreements, several contracts pertaining to specific ship projects have been negotiated and awarded to the two selected shipyards. Preliminary contracts, for example, were awarded to Halifax Shipyard for the Arctic/Offshore Patrol Ships (\$9.3 million in July 2012 and \$288 million in March 2013)³¹ and to Vancouver Shipyards for the Joint Support Ships (\$1.4 million in August 2012), the Polar Icebreaker (\$3.8 million in August 2012) and the Offshore Fisheries Science Vessels (\$15 million in February 2013).³² These contracts pertained to the ship designs and to pre-production work at the shipyards.³³

2.4 2013 NEW SHIP ANNOUNCEMENT

In October 2013, the federal government expanded the large-ship construction program, announcing its selection of Vancouver Shipyards to construct:

up to 10 additional large non-combat ships for the Canadian Coast Guard fleet at an estimated cost of \$3.3 billion ... in addition to the already announced Offshore Fisheries Science Vessels, Offshore Oceanographic Science Vessel and ... Polar Icebreaker that will be constructed at Vancouver Shipyards for the Canadian Coast Guard.³⁴

This raised the total estimated acquisition cost of the NSPS large-ship construction program to over \$36 billion. The new types of ships to be built for the CCG included:

- Medium Endurance Multi-Tasked Vessels (up to five ships); and
- Offshore Patrol Vessels (up to five ships).³⁵

2.5 THE 2014–2015 CONSTRUCTION CONTRACTS

The first ship construction contracts were issued:

- in October 2014 to Vancouver Shipyards for the Offshore Fisheries Science Vessels (\$5 million for two “initial block” modules to be built and fitted in the first ship),³⁶ and
- in January 2015 to Halifax Shipyard for the Arctic/Offshore Patrol Ships (\$2.3 billion).³⁷

Construction of the initial block modules for the first Offshore Fisheries Science Vessel commenced in October 2014.³⁸ The construction of the Arctic/Offshore Patrol Ships is expected to start in September 2015.³⁹

In June 2015, the federal government announced that it had reached an “agreement in principle” with Vancouver Shipyards for the “construction and delivery of three Offshore Fisheries Science Vessels” at a “\$400 million target cost,” but with a “ceiling price of \$514 million.” It also announced that “full production” of the Offshore Fisheries Science Vessels was “expected to begin shortly.”⁴⁰

3 SMALL-SHIP CONSTRUCTION PROGRAM

In addition to the large-ship construction program, the NSPS includes a small-ship construction program. Worth an estimated \$2 billion, this program is open “for competitive procurement amongst Canadian shipyards other than the yards selected to build large vessels.”⁴¹ The small-ship construction program entails the construction of 116 vessels of less than 1,000-tons displacement.⁴² It includes:

- Large Tugs for the RCN;
- Small Tugs for the RCN;
- Search and Rescue (SAR) Lifeboats for the CCG;
- Mid-Shore Science Vessels for the CCG;
- Channel Survey and Sounding Vessels for the CCG;
- Near-Shore Fishery Research Vessels for the CCG;
- Specialty Vessels for the CCG; and
- Special Navigation-Aid Vessels for the CCG.⁴³

In June 2013, the federal government made its first NSPS small-ship construction program announcement. It announced funding of up to \$488 million to procure 18 to 21 new vessels of six different classes (see list below) for the CCG, to be designed and constructed over seven years starting in 2014.⁴⁴ According to the CCG, this includes:

- up to ten SAR lifeboats;
- three Specialty Vessels;
- two Mid-Shore Science Vessels;
- two Channel Survey and Sounding Vessels;
- two Near-Shore Fishery Research Vessels; and
- two Special Navigation-Aid Vessels.⁴⁵

The federal government noted that contracts would be awarded through competitive bidding to Canadian shipyards other than Vancouver Shipyards and Halifax Shipyard, which had already been selected for the large-ship construction program of the NSPS.⁴⁶

To date, no construction contracts have been announced with regard to the small-ship CCG projects. The federal government launched the RFP process for the SAR lifeboats project – the first of the six classes of CCG small ships to be delivered – in November 2014.⁴⁷

No announcements have yet been made with regard to small vessels for the RCN. However, the Department of National Defence indicated in its *Defence Acquisition Guide 2015* that it plans to acquire a few small ships in the coming years, including four large naval tugs and a few multi-role boats and naval mine warfare countermeasures support crafts.⁴⁸

4 SHIP REPAIR, REFIT AND MAINTENANCE PROGRAM

The ship repair, refit and maintenance program is valued at \$500 million to \$600 million annually⁴⁹ and is “open to all shipyards through normal procurement processes.”⁵⁰ The federal government made its first NSPS repair, refit and maintenance program announcement in February 2013. At the time, it announced a “\$360 [million] investment to extend the life of the Canadian Coast Guard fleet.”⁵¹ This includes the life extension of 16 CCG ships and the mid-life modernization of two CCG hovercrafts over the next 10 years, including:

- Medium Icebreakers (four ships);
- High Endurance Multi-Tasked Vessels (six ships);
- Medium Endurance Multi-Tasked Vessels (one ship);
- Offshore Oceanographic Science Vessel (one ship);
- Offshore Patrol Vessels (two ships);
- Special Navigation-Aid Vessels (two ships); and
- Hovercrafts (two hovercrafts).⁵²

Several CCG contracts have since been awarded to a number of Canadian companies for the refit and life extension of:

- two Special Navigation-Aid Vessels (CCGS *Dumit* and CCGS *Eckaloo*);
- two Offshore Patrol Vessels (CCGS *Cygnus* and CCGS *Leonard J. Cowley*);
- one Medium Icebreaker (CCGS *Des Groseilliers*);
- one Heavy Icebreaker (CCGS *Louis S. St. Laurent*); and
- one Medium Endurance Multi-Tasked Vessel (CCGS *Earl Grey*).⁵³

5 SHIP PROJECTS NOT INCLUDED IN THE STRATEGY

It should be noted that a few pre-existing RCN and CCG shipbuilding and ship repair projects exist outside the NSPS framework. All of these projects were launched before the introduction of the NSPS in 2010.

5.1 CANADIAN COAST GUARD

Not included in the NSPS is the construction of nine Hero class Mid-Shore Patrol Vessels for the CCG. The project received preliminary approval from Treasury Board Secretariat in August 2005, and Halifax Shipyard was awarded the \$194 million contract in August 2009. The ships were delivered between 2012 and 2014.⁵⁴

A few CCG small-ship construction projects launched prior to 2010 also were not included in the NSPS:

- one Kelso class Specialty Vessel delivered in 2010;
- one Cape Light class Speciality Vessel delivered in 2013;
- five Cape class SAR Lifeboats delivered in 2011; and
- three Vladykov class Near-Shore Fishery Research Vessels delivered in 2012.⁵⁵

5.2 ROYAL CANADIAN NAVY

The modernization and life-extension of the RCN's existing fleet of 12 Halifax class frigates is not included in the NSPS. Worth an estimated \$4.3 billion, the Halifax Class Modernization/Frigate Life Extension (HCM/FELEX) project received preliminary approval from Treasury Board in February 2007. The modernization and life extension of the Halifax class frigates was contracted in March 2008 to Halifax Shipyard and Seaspan's Victoria Shipyards in British Columbia. The first modernized frigate was completed in 2014, and the last one is expected to be delivered in 2018.⁵⁶

Work related to the modernization, life extension and in-service support of the RCN's four Victoria class submarines, which has been ongoing for more than a decade, is also not included in the NSPS.⁵⁷

6 GOVERNANCE AND OVERSIGHT OF THE STRATEGY

As noted previously, a completely new management and governance structure was created under the NSPS to implement and oversee naval procurement projects. This included the establishment of a multi-departmental NSPS Secretariat as well as several interdepartmental governance bodies at the ministerial, deputy ministerial and assistant deputy ministerial levels, all of which operate under the leadership of PWGSC. The introduction of this new management and governance structure marked a departure from traditional defence procurement practices in Canada.

6.1 NATIONAL SHIPBUILDING PROCUREMENT STRATEGY SECRETARIAT AND PROJECT MANAGEMENT OFFICES

An NSPS Secretariat was set up in 2010 to implement and manage the NSPS and to support the governance structure. The Secretariat is composed of representatives from the Department of National Defence (DND), Fisheries and Oceans Canada, Industry Canada, and PWGSC. It is led by PWGSC.⁵⁸ Responsibility for the management and implementation of the individual ship projects, in turn, rests with "integrated project teams" known as Project Management Offices, which are led by either DND or the CCG.⁵⁹

6.2 GOVERNANCE STRUCTURE

The NSPS governance structure consists of a Ministers' Working Group, a Deputy Ministers (DM) Governance Committee and an Assistant Deputy Ministers (ADM) Interdepartmental Steering Committee.

The Ministers' Working Group was established in December 2012 to provide "oversight to ensure timely advancement of [the] NSPS." Its membership includes the ministers of National Defence, Finance, Fisheries and Oceans, Industry, and PWGSC as well as the President of the Treasury Board. The Ministers' Working Group is chaired by the minister of PWGSC.⁶⁰

The DM Governance Committee is the body that makes key decisions related to the implementation of the NSPS. It consists of deputy ministers from DND, Fisheries and Oceans Canada (Canadian Coast Guard), Industry Canada and PWGSC. Ex-officio members include senior representatives from the Treasury Board Secretariat, the Department of Finance, the Privy Council Office and Aboriginal Affairs and Northern Development Canada. The DM Governance Committee is chaired by the deputy minister of PWGSC.⁶¹

The ADM Interdepartmental Steering Committee provides "ongoing oversight of implementation of the decisions of the Governance Committee." Its membership consists of assistant deputy ministers from the same federal government departments and agencies represented in the DM Governance Committee.⁶²

6.3 A MODEL FOR GOVERNANCE AND OVERSIGHT

The new governance and oversight structure introduced with the NSPS has been generally regarded as a success model for complex defence procurement. As a result, in recent years, the federal government has extended this structure to other defence procurement sectors.

In 2012, for example, the federal government set up a similar governance and oversight structure to manage and oversee the future fighter aircraft and fixed-wing search and rescue aircraft (FWSAR) projects of the Royal Canadian Air Force. This included the creation of a PWGSC-led multi-departmental National Fighter Procurement Secretariat and a FWSAR Secretariat, as well as several project-specific interdepartmental governance bodies at the DM and ADM levels.⁶³ Then, in 2014, the federal government established a similar governance and oversight structure to implement its Defence Procurement Strategy. A multi-departmental Defence Procurement Secretariat was created within PWGSC, along with interdepartmental governance bodies at the ministerial and deputy ministerial levels.⁶⁴

7 ESTIMATED COST OF THE STRATEGY

The most expensive component of the NSPS is its large-ship construction program. The current estimated cost of that program is provided in Table 1. It is estimated that the cost of acquiring those CCG and RCN ships will come to almost \$38 billion over the next 30 years. If estimated personnel, operations, in-service support and maintenance

costs over 25 years are added, the total estimated cost of the large-ship construction program increases to more than \$111 billion.

The three RCN ship projects alone (Arctic/Offshore Patrol Ships, Canadian Surface Combatants, and Joint Support Ships) account for more than 85% of the estimated acquisition costs of the NSPS large-ship construction program (\$32.3 billion of the estimated \$37.7 billion). This is not only due to the larger number of ships to be built for the RCN (23 as opposed to 15 for the CCG), but also the fact that combat ships are significantly more sophisticated and more complex to build than non-combat ones.⁶⁵ Efforts and costs invested in warships are typically 70% systems and 30% hull construction and outfitting. In contrast, the figures for non-combat ships are usually fixed at 20% systems and 80% hull construction.⁶⁶

Table 1 – Estimated Through-Life Costs of the National Shipbuilding Procurement Strategy Large-Ship Construction Program

	Number of Ships	Estimated Acquisition Costs	Estimated Personnel, Operations, In-Service Support and Maintenance Costs (25 Years)	Estimated Total Costs
Combat package	21	\$29.7 billion	\$69.5 billion	\$99.2 billion
Arctic/Offshore Patrol Ships	6	\$3.5 billion	\$5.5 billion	\$9.0 billion
Canadian Surface Combatants	15	\$26.2 billion	\$64.0 billion	\$90.2 billion
Non-combat package	Up to 17	\$8.0 billion	Over \$4.5 billion	Over \$12.5 billion
Joint Support Ships	2	\$2.6 billion	\$4.5 billion	\$7.1 billion
Offshore Fisheries Science Vessels	3	\$687.0 million	Not Available	Over \$687.0 million
Offshore Oceanographic Science Vessel	1	\$144.4 million	Not Available	Over \$144.4 million
Polar Icebreaker	1	\$1.3 billion	Not Available	Over \$1.3 billion
Offshore Patrol Vessels	Up to 5	\$1.9 billion	Not Available	Over \$1.9 billion
Medium Endurance Multi-Tasked Vessels	Up to 5	\$1.4 billion	Not Available	Over \$1.4 billion
Grand total	Up to 38	\$37.7 billion	Over \$74.0 billion	Over \$111.7 billion

Sources: Public Works and Government Services Canada [PWGSC], [Backgrounder on the National Shipbuilding Procurement Strategy \(NSPS\) – Year 2: A Status Update](#), November 2013. On the estimated acquisition costs of the Arctic/Offshore Patrol Ships, see PWGSC, [“National Shipbuilding Procurement Strategy Technical Briefing \(January 16, 2015\).”](#) *National Shipbuilding Procurement Strategy (NSPS)*, 16 January 2015. On the estimated acquisition costs of the Offshore Fisheries Science Vessels, see PWGSC, [“National Shipbuilding Procurement Strategy Technical Briefing on Offshore Fisheries Science Vessel,”](#) 12 June 2015.

At the moment, the NSPS large-ship construction program entails the production of up to 38 vessels. However, according to PWGSC, this has the “potential to grow as it is anticipated the government will need to replace other large ships over the next 20–30 years.”⁶⁷ For example, in its *Defence Acquisition Guide 2015* released in May 2015, DND expressed a requirement for a Canadian Defence Research Vessel. The department is planning to acquire this ship between 2019 and 2025 at an estimated cost of \$500 million to \$1.5 billion.⁶⁸

Current estimated costs associated with each NSPS large-ship project are expected to fluctuate over time. As PWGSC explains, “these cost estimates [for each ship project] are informed, refined and adjusted as the design matures, equipment is

selected, and the ships are constructed.”⁶⁹ This view is shared by the Auditor General of Canada, who, in his fall 2013 report on the NSPS, remarked on the current estimated costs:

The initial budget for each class of military ship was set years before construction will begin. As such, the estimates were very imprecise and should be regarded as, at most, placeholders. As the military ships are complex developmental projects, their design will be defined more precisely over time, which will result in greater certainty on the cost of the vessels. It is not realistic to expect that the original budget cap will remain the same from a project’s conception to completion. ... While budgets are a useful control, Canada may not get the military ships it needs if budgets are not subject to change.⁷⁰

In addition to the estimated costs associated, in the above table, with the NSPS’s large-ship construction program, over the next 30 years the value of the NSPS’s small-ship construction program is estimated at a total of \$2 billion, and the NSPS’s repair, refit and maintenance program is estimated at \$500 million to \$600 million annually.⁷¹ In other words, repair, refit and maintenance contracts alone could amount to a total of \$15 billion to \$18 billion over those three decades. Altogether, PWGSC estimates that total costs related to the acquisition of large and small ships as well as to ship repair, refit and maintenance work under the NSPS could amount to around \$60 billion over 30 years.⁷²

8 PRODUCTION SCHEDULE

Not all of the ships will be constructed at the same time. Halifax Shipyard will first produce the Arctic/Offshore Patrol Ships and then move on to the Canadian Surface Combatants. Vancouver Shipyards will start production with the Offshore Fisheries Science Vessels and then move on to the Offshore Oceanographic Science Vessel, the Joint Support Ships, the Polar Icebreaker, the Offshore Patrol Vessels and the Medium Endurance Multi-Tasked Vessels. Tables 2 and 3 provide the latest production schedule.

Table 2 – National Shipbuilding Procurement Strategy Large-Ship Construction Program 2015–2016 Schedule for Royal Canadian Navy Ships

Deliverables	Arctic/ Offshore Patrol Ships	Joint Support Ships	Canadian Surface Combatants
Number of ships	6	2	15
Preliminary project approval	May 2007	June 2010	June 2012
Award of construction contract	January 2015	2016	2020
Delivery of first ship	2018	2019	2025
Initial operating capability	2019	2019	2026
Final operating capability	2023	2020	2042
Project closed	2024	2020	2043

Sources: Department of National Defence, “[Status Report on Transformational and Major Crown Projects](#),” *Report on Plans and Priorities 2015–16*; Public Works and Government Services Canada, “[Backgrounder on the National Shipbuilding Procurement Strategy \(NSPS\) – Year 2: A Status Update](#),” November 2013.

**Table 3 – National Shipbuilding Procurement Strategy
Large-Ship Construction Program 2015–2016 Schedule
for Canadian Coast Guard Ships**

Deliverables	Offshore Fisheries Science Vessels	Offshore Oceanographic Science Vessel	Polar Icebreaker	Offshore Patrol Vessels	Medium Endurance Multi-Tasked Vessels
Number of ships	3	1	1	Up to 5	Up to 5
Preliminary project approval	October 2005	July 2008	June 2009	Fall 2013	Fall 2013
Award of construction contract	October 2014	2016–2017	2018–2019	To be determined	To be determined
Delivery of first ship	2017–2018	2017–2018	2021–2022	To be determined	To be determined
Final delivery	2017–2018	2017–2018	2021–2022	To be determined	To be determined

Sources: Fisheries and Oceans Canada, "[Status Report on Transformational and Major Crown Projects](#)," *Report on Plans and Priorities 2015–16*; Government of Canada, "[Vancouver Shipyards to build Medium Endurance Multi-Tasked Vessels and Offshore Patrol Vessels for the Canadian Coast Guard](#)," News release, 7 October 2013; and Public Works and Government Services Canada [PWGSC], "[Backgrounder on the National Shipbuilding Procurement Strategy \(NSPS\) – Year 2: A Status Update](#)," November 2013. On the delivery dates of the Offshore Fisheries Science Vessels, see PWGSC, "[National Shipbuilding Procurement Strategy Technical Briefing on Offshore Fisheries Science Vessel](#)," 12 June 2015.

Work related to the design of the Arctic/Offshore Patrol Ships, the Joint Support Ships, the Offshore Fisheries Science Vessels, the Offshore Oceanographic Science Vessel and the Polar Icebreaker has been under way for several years and now appears, in most cases, to be completed.⁷³ The Joint Support Ships will be known as the Queenston class and the Arctic/Offshore Patrol Ships as the Harry DeWolf class.⁷⁴ The Polar Icebreaker will be christened the CCGS *John G. Diefenbaker*.⁷⁵ The names of the Offshore Fisheries Science Vessels and the Offshore Oceanographic Science Vessel are not yet officially known.

However, there is still much uncertainty about the Canadian Surface Combatants, the NSPS's biggest and most expensive project, whose design is still in an embryonic stage. The overall characteristics, capabilities, performance, level of complexity and sophistication of these warships, not to mention their propulsion units, electronic, communication, sensor and weapon systems, and other items of equipment, still remain to be determined. It is important to note that the Canadian Surface Combatants project alone accounts for more than 80% of the total through-life estimated value of the NSPS large-ship construction program over the next 25 years, as shown in Table 1 (\$90.2 billion of more than \$111.7 billion).

That being said, the design of the Canadian Surface Combatants is expected to be defined within the next few years. In January 2015, the federal government announced the selection of Halifax Shipyard as the "prime contractor" to build the Canadian Surface Combatants.⁷⁶ It further indicated in May of that year that it will also require the "expertise of a Warship Designer as well as a Combat Systems Integrator" for the project. Their respective roles will be to design the warship and to design its combat system, which includes the weapons (for example, guns and

missiles), sensors (for example, radars and sonars) and communication systems. The federal government intends to have selected a Warship Designer and a Combat Systems Integrator by early 2017.⁷⁷

The status of the Offshore Patrol Vessels and the Medium Endurance Multi-Tasked Vessels remains to be determined.

9 OPPORTUNITIES AND CHALLENGES

The NSPS has generated positive reviews since it was introduced in 2010. CADSI and the Shipbuilding Association of Canada, for example, have both repeatedly expressed their support for the strategy. Both believe that the NSPS will strengthen Canada's shipbuilding industry, will help sustain and keep shipyards operational for years to come and will provide work for decades to workers and communities across the country. These two organizations expect spinoffs from the NSPS contracts to impact all regions of Canada.⁷⁸ A number of academics and other experts familiar with defence policy have echoed this positive assessment of the NSPS as an industrial development strategy that will eliminate the "boom and bust" cycles of government ship procurement and generate employment and economic benefits across Canada.⁷⁹

However, the NSPS has also been the subject of mounting public criticism from various experts in recent years, including the Auditor General of Canada and the Parliamentary Budget Officer. These experts have argued, among other things, that the estimated costs for the NSPS provided by the federal government are now several years old and in need of refinement. They argue that the sums required to build many of the ships already announced will likely increase over time due to a number of factors, including inflation, rising material and labour costs, the advent of new technologies, possible changes to operational requirements in response to a constantly evolving international threat environment and various other unexpected issues. Commentators have also warned against possible delays with certain ship projects. Others have expressed concerns about the risks associated with the limited human resources available to implement the NSPS. Several commentators also believe that the federal government should be moving faster with the delivery of the NSPS and the award of construction contracts.⁸⁰

It should be noted that there have been cost overruns and delays with individual NSPS ship projects in recent years. In fiscal year 2014–2015, for example, the estimated acquisition cost of the Arctic/Offshore Patrol Ships was increased from \$3.1 billion to \$3.5 billion and the Offshore Fisheries Science Vessels from \$244 million to \$594 million.⁸¹ In June 2015, PWGSC announced that the estimated acquisition cost of the Offshore Fisheries Science Vessels had further increased to \$687 million.⁸² Overall, the estimated acquisition cost of the 38 vessels to be built under the NSPS large-ship construction program actually increased by close to \$5 billion over the past five years, from \$33 billion⁸³ to almost \$38 billion (Table 1). Moreover, in recent years, the delivery schedules of nearly all NSPS ship projects have been postponed for various reasons. Between fiscal years 2010–2011 and 2015–2016, the delivery of the first Arctic/Offshore Patrol Ship was delayed four years (2014 to 2018), the first Joint

Support Ship two years (2017 to 2019), the first Offshore Fisheries Science Vessel four years (2013 to 2017–2018), the Offshore Oceanographic Science Vessel four years (2013 to 2017–2018), and the Polar Icebreaker four years (2017 to 2021–2022).⁸⁴

Moreover, aside from delays encountered with certain ship projects, there have been growing concerns about the risks of reduced fleet capability in coming years as the CCG and RCN recapitalize their aging fleets.⁸⁵ A case in point, in September 2014, DND announced that it would be retiring prematurely four of its warships, starting in 2015 – the destroyers HMCS *Iroquois* and *Algonquin* and the support ships HMCS *Protecteur* and *Preserver*. DND admitted that “the retirements of these ships will generate some loss in both capacity and capability for the RCN,” but noted that “[t]hese losses ... will be mitigated in the short-to-medium term as the RCN builds toward the future fleet.”⁸⁶ The RCN is considering a range of options.

10 CONCLUSION

The NSPS was introduced in 2010 as a continuous long-term shipbuilding plan to renew the fleets of the RCN and CCG within the next 20 to 30 years. Over the last five years, the strategy has achieved several milestones, notably with its large-ship construction program. This has included selecting the shipyards (June 2010–October 2011), establishing a relationship with the shipyards through umbrella agreements (October 2011–January 2012), preparing the shipyards and finalizing the ship designs (January 2012 to present). The NSPS large-ship construction program has now started the ship construction phase with the Offshore Fisheries Science Vessels and Arctic/Offshore Patrol Ships projects.⁸⁷ Some progress has also been made with the small-ship construction program and the ship repair, refit and maintenance program.

If current production schedules are maintained, the next five years should see Halifax Shipyard and Vancouver Shipyards construct and deliver about half of the Arctic/Offshore Patrol Ships,⁸⁸ as well as all of the Joint Support Ships, Offshore Fisheries Science Vessels and Offshore Oceanographic Science Vessel.⁸⁹ In other words, by 2020, almost a quarter of the ships ordered under the NSPS large-ship construction program should be in the hands of the CCG and RCN. The shipyards’ attention should by then focus on the construction of the Canadian Surface Combatants and the Polar Icebreaker.

However, challenges have been encountered along the way. There have been cost fluctuations and delays with several of the ship projects and there continues to be growing public concerns with the possibility of reduced CCG and RCN fleet capabilities in coming years.

It is clear that the NSPS is still in its early stages and that a considerable amount of work remains to be done before the majority of its ships are delivered to the CCG and RCN over the next 25 to 30 years. While it may be too soon to determine whether the NSPS will change the landscape of shipbuilding in Canada, the results of the past five years demonstrate significant changes in the approach and implementation of processes for naval procurement.

NOTES

1. Department of National Defence [DND], "[The Department of National Defence and the Government of Canada's National Shipbuilding Procurement Strategy](#)," News release, 3 June 2010; and Public Works and Government Services Canada [PWGSC], "[Government of Canada announces National Shipbuilding Procurement Strategy](#)," News release, 3 June 2010.
2. DND, "[The Department of National Defence and the Government of Canada's National Shipbuilding Procurement Strategy](#)" (3 June 2010); PWGSC, "[Background on National Shipbuilding Procurement Strategy](#)," *National Shipbuilding Procurement Strategy (NSPS)*.
3. This policy has been pursued under different forms and names over the decades. It is officially known today as the Federal Shipbuilding, Repair, Refit and Modernization Policy. This policy states, among other things, that federal government contracts for new ships worth more than \$25,000 must be awarded in Canada on a national competitive basis, as long as "[t]he statement of requirement is sufficiently defined to permit assessment of competing bids by common standards," that "[a]vailable shipyards, both in Eastern Canada and in Western Canada, have the technical capability to perform the work," and that "[t]he vessel being procured is of a type that can be transferred and for which contingency costs ... are not unrealistic in relation to the total price." See PWGSC, "[3.170. Shipbuilding, Repair, Refit and Modernization](#)," *Supply Manual*.
4. With the exception of a handful of specialized vessels that were purchased from foreign sources of supply – types of vessels that the Canadian shipbuilding industry did not traditionally produce, notably aircraft carriers and submarines for the Royal Canadian Navy (RCN) and hovercrafts for the Canadian Coast Guard (CCG) – all CCG and RCN ships acquired since the Second World War have been built in Canada. For more information on the vessels used by the CCG and RCN since the Second World War, see Ken Macpherson, *The Ships of Canada's Naval Forces*, Vanwell Publishing, St. Catharines, Ont., 2002; and Charles D. Maginley and Bernard Collin, *The Ships of Canada's Marine Services*, Vanwell Publishing, St. Catharines, Ont., 2001.
5. Peter Cairns, "Shipbuilding and Industrial Preparedness," *Canadian Naval Review*, Vol. 2, No. 3, Fall 2006, pp. 16–23.
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9. Canadian Association of Defence and Security Industries [CADSI], "[Statement from CADSI on One-Year Anniversary of National Shipbuilding Procurement Strategy Agreements](#)," News release, 28 February 2013; and CADSI, *Sovereignty, Security and Prosperity – Government Ships – Designed, Built and Supported by Canadian Industry*, May 2009, p. 30.
10. PWGSC, "[Speaking Notes for NSPS Technical Briefing](#)," *National Shipbuilding Procurement Strategy (NSPS)*, 28 June 2013.
11. PWGSC, "[Backgrounder: Background on National Shipbuilding Procurement Strategy](#)," *National Shipbuilding Procurement Strategy (NSPS)*.
12. PWGSC, "[Backgrounder on the National Shipbuilding Procurement Strategy \(NSPS\) – Year 2: A Status Update](#)," *National Shipbuilding Procurement Strategy (NSPS)*, November 2013.

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13. PWGSC, "[Chronology of Events and Milestones](#)," *National Shipbuilding Procurement Strategy (NSPS)*.
14. Government of Canada, "[Results of Shipbuilding Qualification Process](#)," News release, 8 October 2010.
15. PWGSC, "[National Shipbuilding Procurement Strategy: Release of the Request for Proposal to build large vessels for Canada](#)," *National Shipbuilding Procurement Strategy (NSPS)*, 7 February 2011.
16. Ken Bowering, "[National Shipbuilding: Where We Are and Where We're Headed](#)," *Canadian Naval Review*, Vol. 8, No. 2, Summer 2012, p. 20.
17. PWGSC, "[Results of the National Shipbuilding Procurement Strategy](#)," News release, 19 October 2011.

PWGSC has described the process in this way:

Five proposals were received from three bidders: two for the combat work package and three for the non-combat package. An independent evaluation organization composed of public servants and Canadian Forces members from the departments involved [NSPS Secretariat] evaluated the proposals. ... The shipyards were evaluated on a combination of mandatory and rated requirements.

In the end, one bidder was selected for the combat package (Halifax Shipyard) and another one for the non-combat package (Vancouver Shipyards). See PWGSC, "[National Shipbuilding Procurement Strategy \(NSPS\)](#)," *Frequently Asked Questions*.

18. PWGSC, [National Shipbuilding Procurement Strategy \(NSPS\)](#).
19. OAG, "[National Shipbuilding Procurement Strategy](#)" (2013), p. 13.
20. PWGSC, "[Results of the National Shipbuilding Procurement Strategy](#)" (19 October 2011); PWGSC, "[Backgrounder: The Ships to be Built](#)," *National Shipbuilding Procurement Strategy (NSPS)*; and PWGSC, "[Construction of Large Vessels](#)," *National Shipbuilding Procurement Strategy (NSPS)*.
21. PWGSC, "[Results of the National Shipbuilding Procurement Strategy](#)" (19 October 2011).
22. Government of Canada, "[Canada Signs Long-term Agreements with NSPS Selected Shipyards](#)," News release, 15 February 2012. See also PWGSC, "[Chronology of Events and Milestones](#)."
23. National Shipbuilding Procurement Strategy [NSPS] Secretariat, "[NSPS – Charting the Course](#)," Presentation at Dalhousie University, 6 June 2014, p. 7.
24. PWGSC, "[Backgrounder: A Unique Process](#)," *National Shipbuilding Procurement Strategy (NSPS)*.
25. OAG, "[National Shipbuilding Procurement Strategy](#)" (2013), p. 14.
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34. Government of Canada, "[Vancouver Shipyards to build Medium Endurance Multi-Tasked Vessels and Offshore Patrol Vessels for the Canadian Coast Guard](#)," News release, 7 October 2013.
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38. Seaspan, "[Seaspan's Vancouver Shipyards Starts Construction on Initial Production Blocks for First NSPS Vessel](#)," News release, 27 October 2014.
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48. DND is planning to have the Multi-Role Boats delivered between 2017 and 2020, the Naval Large Tugs between 2019 and 2025, and the Naval Mine Warfare Countermeasures Support Crafts between 2021 and 2025. The *Defence Acquisition Guide 2015* made no mention of any plans to acquire small naval tugs for the RCN. See DND, "[Naval Systems](#)," *Defence Acquisition Guide 2015*.
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