CANADA'S SEMICONDUCTOR COUNCIL

CSC submission to the Standing Committee on Finance Pre-Budget Consultation in Advance of the 2024 federal budget

RECOMMENDATIONS

There is a massive disruptive change underway in the global semiconductor supply chain driven by the current geopolitical winds which results in the huge North America trend for onshoring (or reshoring) of this vital sector. This creates a huge opportunity to strengthen and grow Canada's broad semiconductor industry while securing supply of vital electronic components underpinning a variety of applications and products such as computers, smartphones, electric vehicles, and healthcare and cleantech devices, and many more. To take advantage of the significant economic opportunity, we recommend the following:

- Federal government, in partnership with the industry, **develops and puts in place strategies, policies, incentives and funding**, proportionate to other foreign players, to spur the industry growth and take advantage of the opportunity. This should include incentive frameworks or trade partnerships to advance manufacturing investments, R&D commercialization, FDI, and policies to fast-track semiconductor talent to Canada.

- Create a **Strategic Semiconductor Consortium (SSC)** to support collaboration between Canadian companies and build the human capital to maintain Canada's leadership in R&D, intellectual property (IP) development, and design of microchips. The consortium would commit about $1B in total funding with the 50% split between the private sector and government over the next five years and will be managed jointly by industry leadership with government oversight

- Establish a **Semiconductor Supply Resiliency Fund (SSRF)** with a capital of minimum of $3B to support strategic capital expenditures that help alleviate bottlenecks in North American semiconductor supply chains such as manufacturing, assembly, packaging, testing facilities and plants.

"An industrial policy is most likely to succeed when the goal is narrowly defined and leverages private-sector incentives."

BACKGROUND

Recently, the US CHIPS Act apportioned the USD $53B to bring semiconductor manufacturing back to the US and North America with another $24 billion of tax credits. This subsequently triggered

over $300B investment commitments from semiconductor companies and private capital. Similarly the EU CHIPS Act committed over $43B euro to spur the growth of the semiconductor industry in Europe and secure its supply chains. Even some smaller countries, such as Spain, committed over $10B euro for its domestic semiconductor sector while South Korea committed $230 USD. In this context, Canada is way behind with total sector specific incentives of the order of $250M CAD and practically next to nothing in the 2023 federal budget. **Addressing Canada's gaps in semiconductor funding in the upcoming 2024 Budget is critical to retain Canada's credibility on the world scene**

These investments are essential ensuring semiconductor production is brought back to the western world. In addition to manufacturing, other parts of the semiconductor ecosystem such as R&D, supply chain security, and industry talent development are crucial areas that need investment from both government and industry to secure a robust future for semiconductors in the West.

Canada has a lot to offer in strengthening the North American semiconductor supply chain: strong engineering talent, innovative R&D, lots of land for new facilities, abundant energy sources, water, well developed industrial infrastructure and proximity to our US neighbor. With the renewed geopolitical focus on the critical role of semiconductors in the global economy, stronger national, coordinated effort is badly needed.

Canada's semiconductor industry includes over 100 domestic and multinational companies conducting semiconductor R&D. Our manufacturing base includes several commercial facilities in areas such as compound semiconductors, micro-electro-mechanical systems (MEMS), and advanced packaging. Many global chip companies are conducting R&D and semiconductor chip design across the country. Homegrown Canadian companies are also making their mark. The strong university presence in Ontario, Quebec and BC creates hubs for start-ups in the design space which are poised to add significant value in the sector. Canada is also rich in the minerals critical to manufacturing for the semiconductor industry.

Supply chain resiliency, spanning from essential minerals to end products, necessitates investments and strategies in areas where we hold a competitive edge. This approach is essential to prevent further setbacks and undo the unfavorable patterns that might lead to a continued departure of our finest minds from Canada. It also addresses the potential skill gaps in the upcoming workforce within the contemporary digital economy. Moreover, it positions Canada to avoid substantial disadvantages in attracting future worldwide investments for cutting-edge science, research and development, as well as manufacturing.

Prime Minister Justin Trudeau has stated recently that Canada's role with semiconductors could mimic its contributions to the North American auto industry, as in building parts that are assembled elsewhere. "Our focus is on making sure that Canada and Canadians are a part of the semiconductor ecosystem," he stated in January 2023.

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BENEFITS

Severe disruptions in the global supply chains could have catastrophic effects as recently demonstrated by the COVID-19 pandemic. Similarly the geopolitical tension between China and the West is driving policymakers to find alternatives to the fragmented global manufacturing system. This is especially true for semiconductors, which are essential for cybersecurity, telecommunications, and defense applications.

Semiconductors contribute significantly to global GDP and they power trillions of dollars of goods and processes. Microchips are essential for further development of electric vehicles, AI, and quantum computing which are the most promising areas of growth for the future.

Semiconductor sector is the source of high quality well paid jobs. This includes not only highly skilled electrical engineers but a variety of related skills in chemical engineering, mechanical, and construction engineering in addition to technologists and support staff. According to the Semiconductor Industry Association (SIA), for every semiconductor job created, 5.7 new jobs are created in other parts of the economy.

Canada has to send a strong clear message

The Government of Canada and Canadian companies need to act now to maintain competitiveness within this swiftly evolving environment. We should further enhance Canada's expertise in designing microchips that will be produced in North America. This involves both nurturing and retaining talent and the workforce, ensuring that the intellectual property generated benefits Canada. While the ongoing investments in critical minerals and electric vehicle (EV) battery manufacturing are a promising beginning, similar investments are required in the semiconductor industry, specifically in the design and manufacturing of chips for crucial sectors like automotive and aerospace. This is essential to guarantee the continuous expansion of our GDP, Canadian intellectual property, and overall economic advancement through these future-oriented jobs.

Drawing a parallel to the automotive industry, Canada successfully capitalized on an opportunity and cultivated the expertise to become a crucial participant in the North American automotive sector. Now, as the automotive landscape transforms, semiconductors have become the bedrock of technologies propelling the electrification, self-driving capabilities, and connectivity within the automotive domain.

Canada needs to convey a clear message about its commitment to investing in domestic suppliers and playing pivotal roles in the semiconductor sector, contributing to the growth and security of all Canadians. **This is an unprecedented economic opportunity and we need to act now.**

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ABOUT CSC

Canada's Semiconductor Council (CSC) is a national semiconductor industry association representing a broad ecosystem of Canadian microelectronics companies, microchip manufacturers, R&D organizations, and relevant government labs, agencies, and universities.

The mandate of this Council is to lead a National Semiconductor Strategy and Action Plan that positions Canada to be a global developer, manufacturer and supplier of semiconductor products that are embedded in virtually every industry such as electric vehicles, medical devices, consumer electronics and precision agriculture.

CSC is the voice of Canada's semiconductor industry, dedicated to accelerating the growth and development of Canada's semiconductor sector. The organization's goal is to strengthen our domestic supply chain resiliency and future in the digital economy by establishing Canada as a leader for semiconductor research, design and development, and manufacturing at the forefront of commercialization and innovation for the global semiconductor industry.