

**Written Submission to the House of  
Commons Standing Committee on Finance  
for the Pre-Budget Consultations in Advance  
of the 2019 Budget**

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**Recommendation:**

That the government implement a 25% refundable tax credit/grant for capital costs pertaining to building the first 15,000 tonnes per year of land-based salmon farm production facilities to grow salmon to market size using recirculating aquaculture system technology to catalyze the establishment of this industry in Canada before U.S. jurisdictions take the dominant position in this emerging high-growth sector.

LBCC = Land-based Closed Containment  
RAS = Recirculating Aquaculture System  
mt = tonnes per year

The federal Advisory Council on Economic Growth (Barton Council):

- Identifies aquaculture as a high potential growth sector;
- Identifies that Canada does a poor job of scaling up new companies;
- Sees government's role as one that removes obstacles to galvanize and attract private investment and spur the adoption of innovative new technologies.

British Columbia has an established ocean-based Atlantic salmon farming industry that generates \$700 million in annual revenues. Globally, salmon farming companies have been making record profits due to high salmon prices. A July 2018 report by the UN Food and Agriculture Organization predicts that farmed fish prices will continue to rise, on average, by 19% over the next decade due to increased demand and supply constraints.

However, supply growth is capped in BC due to environmental concerns and First Nations protests. Similarly, sealice epidemics in Norway and the UK, and disease issues in Chile have severely limited growth in those regions. Innovative technologies to address these environmental concerns and limitations are being trialed, particularly in Norway, the world's largest producer of farmed Atlantic salmon.

In February 2017 Norwegian DNB Markets published a comprehensive analysis of the economic potential of new technologies for growing Atlantic salmon to market size (3-5kg). They concluded that: "LBCC (land-based closed containment) farming had the largest potential to impact the future of the salmon farming industry." LBCC farming that uses RAS (recirculating aquaculture system) technology addresses all of the environmental concerns raised about ocean-based salmon farming (pathogen and parasite spread to wild Pacific salmon and antibiotic and pesticide environmental contamination) and produces fish that are antibiotic and pesticide free, traceable and increasingly sought by consumers. For these and other reasons, globally more than two dozen LBCC Atlantic salmon facilities are currently operating, under construction, or being planned and permitted (see attached table and associated map).

The US currently imports more than 350,000mt of Atlantic salmon annually, mainly from Norway and Chile. Transportation costs from those countries are high (>\$2/kg) and the carbon footprint is large. This creates a big opportunity for North American producers. As a result, four large LBCC facilities representing more than \$3.5 billion in investment and 200,000 mt of annual production are under development on the US Eastern seaboard. Large LBCC projects have not yet

been announced for Canada or the US West Coast.

British Columbia is a particularly attractive and competitive location for large LBCC projects because of its existing aquaculture industry ecosystem, including:

- Existing RAS expertise to full growout, described below
- Hatcheries using RAS
- A base of trained RAS workers
- Low cost hydro power
- Aquaculture equipment supply companies
- Feed mills
- Fish health scientists
- Fish processors
- Established seafood distribution system
- Proximity to high value US and Pacific Rim markets

BC has developed expertise through five LBCC RAS facilities that produce Atlantic salmon, coho salmon, tilapia, steelhead and sturgeon, and RAS hatcheries that produce millions of Atlantic salmon smolts. BC based KUTERRA, North America's first commercial pilot scale (300mt) LBCC farm growing Atlantic salmon to market size, was a world leader in proving out RAS technology. Scale is key to profitability in this industry. Building LBCC farms at scale (>2000mt/yr) is the next step to developing this new industry in BC.

Scaled up LBCC farms are being designed and built outside Canada. It can take five years to get a site permitted, to design and construct the facility, stock it and grow the fish to market size. In order to make the risk return ratio attractive to early investors in LBCC in BC, we recommend that the government offer a refundable tax credit of 25% of the cost of building the first 15,000mt of LBCC production of market sized salmonids in Canada, with a minimum size threshold to ensure that these facilities are built at a scale that will produce fish on a cost competitive basis. We believe this will support the launch of this new industry at a large scale in BC, creating an industry cluster for Canada.

Assuming a capital cost per kilogram of production of between \$15-\$20/kg (\$Cdn), the grant will total approximately \$55 - \$75 million, likely over a five-year period. This tax grant will:

- Attract private investment to Canada;
- Share early adopter risk between the private sector and government; and
- Catalyze the development of the LBCC salmon farming industry in Canada at scale.

Once these first facilities are operating and profitable, investment will flow into the sector and the catalyst will no longer be needed. The key consideration is to build these first LBCC farms at commercial scale in BC to create the LBCC cluster

before LBCC matures in the US, leaving Canada at best trying to play catch-up, and most likely, closing Canada out of this new and emerging industry after having lost first-mover advantage to a much larger economy. We need to leverage BC's competitive advantages to secure a major portion of the western US and Asian market for LBCC raised salmon.

Environmental and First Nation considerations are leading toward the likely reduction of ocean-based Atlantic salmon farming in BC. LBCC salmon farming removes interactions between farmed salmon with the marine environment, which better protects the ocean and wild Pacific salmon, thereby addressing these concerns and facilitating the growth of the salmon farming industry to meet the growing demand. Canadian policy makers have the opportunity to decide whether this emerging clean-tech industry – sustainable land-based closed containment aquaculture – will be a Canadian-led industry or whether we will see other countries seize this growth opportunity while Canada is left behind.

## LAND-BASED ATLANTIC SALMON FARM DEVELOPMENTS

Company	Country	Planned + Operating Production	Status		
			Planning	Under Construction	Operating
Atlantic Sapphire	USA (Flor.)	90,000	x	x	
Whole Oceans/Emergent Holdings	USA (ME)	50,000	x		
Nordic aquafarms	USA (ME)	33,000	x		
Salmon Evolution	Norway	28,800	x		
Aquamaof	USA (VA)	20,000			
Nekst	Norway	20,000	x		
Akvafarm Rjukan AS	Norway	10,000	x		
Aquabanq	USA	10,000	x		
Havlandet Havbruk	Norway	10,000	x		
FishFrom	Scotland	3,600	x		
Vikings Label	Dubai	2,500	x		
Nordic Aquafarms	Norway	2,400		x	
Confidential	USA	2,400	x		
Atlantic Sapphire/ Langsand Laks	Denmark	2,000		x	x
Danish Salmon	Denmark	2,000			x
Atlantic Salmon South Africa	South Africa	1,500	x		
Jurassic Salmon	Poland	1,000			x
Yantai Salmon Farm	China	1,000			x
Xinjiang E'he Construction and Invest. Co.	China	1,000			x
SmögenLax Aquaculture AB	Sweden	1,000	x		
Swiss Alpine	Switzerland	600		x	x
Sustainable Blue	Canada (NS)	500	x		x
Kuterra	Canada (BC)	300			x
Superior Fresh (plus aquaponics)	USA (WI)	100	x		x
CanAqua Seafoods	Canada (NS)	100	x		x
BDV	France	100			x
<b>Total Production (mt/year)</b>		<b>293,900</b>	<b>287,100</b>		<b>6,800</b>

# GLOBAL GROWTH



BC & Canada are losing ground.  
**Decisive action needed!**