

**Written Submission for the Pre-Budget Consultations in
Advance of the Upcoming Federal Budget**

By Armstrong Fluid Technology

DRAFT

Recommendation 1:

Create a sustainable capital plan to facilitate the decarbonization of commercial, residential, government, and MUSH sector infrastructure

- *Policy framework for energy efficiency in the built environment*
- *Capital forecast*

Recommendation 2:

Creating Canada's clean technology market advantage and financing strategy by fast-tracking regulatory approval for cleantech and efficiency technologies.

Recommendation 3:

Cultivate a private retrofit market.

Recommendation 4:

Bring industry, design and engineering to the policy table.

SUBMISSION

Building Better: Healthier Buildings, Sustainable Communities

Even before the pandemic shut down supply chains, disrupted global trade, and drastically limited our planetary greenhouse gas emissions, the IEA had targeted efficiency measures for the built environment as a necessity for meeting the goals of the Paris Agreement.

Technologies to decrease greenhouse gas emissions and increase the efficiency of our buildings are widely available and increasingly recommended for deep retrofits by groups like the Urban Land Institute. The pandemic has also increased the scrutiny on systems to improve and protect internal air quality. The requirements to meet both the health goals and the sustainability goals for our built environment will mean that industry and government will need to work together to ensure that deep retrofits and new builds have access to leading-edge technologies that can be continuously upgraded.

Healthier Buildings, Sustainable Communities:

According to several health and industry experts, minimizing the spread of COVID-19 inside buildings may be connected to improvement of interior air quality. This includes introducing higher volumes of fresh air, requiring systems to work harder to heat and cool the building.

The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) has released a preparedness resource website to help address COVID-19 concerns around air quality through ventilation, heating and air conditioning systems. Additionally, ASHRAE recommends health-care intake and waiting areas, crowded areas and similar, go beyond the minimum requirements of sanitizing and physical distancing. They suggest that these facilities employ technologies to better prepare to control airborne infectious diseases, including future pandemics caused by new agents.

The goal of Net-Zero cities:

These past months of reduced air travel and traffic have given cities a glimpse of what is possible on both air quality and greenhouse gas emissions. Globally, we have seen that meeting the goals of the Paris Agreement are possible, but will require drastic change. As we move forward, cities want to hold onto the gains they have made in sustainability during the shutdown, and upgrading our understanding of how to limit emissions from the built environment is critical.

Net-zero cities will require net-zero buildings. Net-zero buildings will require including the best and most efficient air circulation, heating, and cooling systems in both new builds and retrofits. The adoption of technologies that support healthier and more sustainable buildings must be supported through access to financing and regulatory reform.

Recommendation 1:

Create a sustainable capital plan.

Canada's long-term path to a low-emissions, climate-smart economy, sector by sector, will require an associated capital plan. The policy framework needs review, and a capital forecast should be developed that establishes Canada as a global leader in saving energy and decarbonizing commercial, residential, government, and MUSH sector infrastructure.

Identifying the capital needs is exactly what Armstrong and the rest of the private sector can do for the Government of Canada. We have a clear picture of what the needs are from engaging with potential customers who in the end, often do not have the capital to support the level of investment that next-generation energy-efficient buildings require.

Recommendation 2:

Creating Canada's clean technology market advantage and financing strategy by fast-tracking regulatory approval for cleantech and efficiency technologies.

Federal regulation relating to permitting and procurement needs to be more agile in order to foster innovation. Priority solutions that demonstrate Canada's cleantech competitiveness will require agile regulation or regulatory processes. **The quick integration of advanced technologies demands a regulatory approval fast-track and a responsive, agile system.** This can then enable government technology criteria reviews to be undertaken in a fashion that meets the demands of the construction environment and ensures that technology criteria in procurement documents does not unintentionally discourage adoption of the most efficient technologies currently available. In addition, procurement constraints create a barrier to early adoption of next-generation technologies by government. Pilot programs and solution-focused procurement may foster the R&D aspects of innovation, but **efficient procurement processes that are able to contend with the newest technologies are the necessary next steps.** Creating a merit-based regulatory pre-application process which prioritizes technologies based on proven emission reduction capability and energy savings would be one possible method to support reaching the eventual goal.

Armstrong has found success engaging in jurisdictions from the United Kingdom to the United Arab Emirates and has been the witness and beneficiary of rapid acceptance of the newest technology that Armstrong can deliver. That Canada's own processes are keeping it from the forefront of the adoption of net-zero technologies is a constant challenge for businesses focused on efficiency that are striving to move forward.

Recommendation 3:

Cultivate a private retrofit market.

Armstrong has experienced a specific challenge to the Canadian building stock within the context of retrofits. A concentrated group of large, institutionally-owned real estate operators with robust operational capacity and access to capital manage the majority of Canada's large office and commercial building stock. Traditionally, these operators of institutionally-owned stock have little incentive to pursue next-level efficiency retrofits. Battling COVID-19 has demonstrated the importance of these retrofits for both the health of those inside the building

and the sustainability of our urban environments. **There must be incentives and accountability infrastructure (carrots and sticks) to ensure that retrofits to the existing building stock meet the level of efficiency available.**

Armstrong has found that **the challenge to taking advantage of federal building plans is the limited capacity of government to accommodate technology that has not yet become commercially available.** The short-lived BCIP program attempted to deal with this challenge, but fell short as government was not able to fund the selected projects, or manage the projects at the pace of private industry product development cycles. Government contractors struggled to fit the technology into their planning and were limited by the boundaries of their contractual responsibilities and performance metrics.

Ideas such as *developing a regional green bank network to facilitate an 'on the ground' retrofit market* must be accompanied by an emphasis on identifying and utilizing the best-in-class technologies. Centres of expertise must maintain access and have ongoing conversations with industry leaders to thoroughly grasp which technologies are effectively commercialized around the world but not yet fully embraced in the Canadian market.

Recommendation 4:

Bring industry, design and engineering to the policy table.

The best way to ensure that buildings reap the largest rewards and are the most efficient is to bring designers and engineers to the policy table. The reality is that regulatory efforts like building codes and procurement requirements need to reflect the work that has been and continues to be done across Canada. No one knows what is possible better than those that are on the ground and in the trenches, daily.

Industry understands its innovations better than anyone else. The technology of managing air flows, heating and cooling buildings, is evolving at a rapid rate, with new milestones in efficiency passed on a regular basis. We used to think of having to replace machinery in order to gain new efficiencies, but with the systems being developed now, it's possible to manage the load in smart ways, using technologies with integrated control algorithms, connectivity to support cloud-based analytics and machine learning. The combination of efficiencies can be arranged to support retrofits that in the end are worth far more than the sum of their parts.