



**City of Kingston
Information Report to Council
Report Number 24-110**

To: Mayor and Members of Council
From: Craig Desjardins, Director, Office of Strategy, Innovation & Partnerships
Date of Meeting: September 17, 2024
Subject: RXN 'Reaction' Hub Project Update

Council Strategic Plan Alignment:

Theme: 5. Drive Inclusive Economic Growth

Goal: 5.3 Diversify Kingston's economic base.

Executive Summary:

The purpose of this report is to provide Council with an update on the creation of the Clean Tech Innovation & Commercialization Hub (RXN 'Reaction' Hub) and further, to detail the due diligence conducted by staff to comply with the conditions set out in [Report Number 22-233](#) prior to providing \$3 million in City support for the project. After extensive due diligence, partnership development and project model refinement, the RXN 'Reaction' Hub (RXN Hub) is now in the final stages of completion, the physical space is set to open early next year, and all of Council's conditions required to advance funding have been met.

Council will recall that the proposed RXN Hub aims to fill a crucial gap in Kingston's emerging Chemtech ecosystem by facilitating the transition of innovations from the laboratory to commercialization, and eventually to large-scale production. This "end-to-end" development pipeline would integrate the resources of Queen's University, GreenCentre Canada, the national clean tech ecosystem, and private sector partners, creating a cohesive environment for startups to scale their technologies. The creation of RXN Hub will bring new infrastructural capacity (a first-of-its-kind facility) to the Eastern Ontario region and Canada that will help close a critical gap in our nation's clean tech commercialization pathway.

RXN Hub will be a 20,000+ square foot facility offering modular piloting and pre-production space, wet labs, analytical labs, a machine shop and access to co-working space. Over five

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years, it is expected to create 200 direct jobs and 50 indirect jobs. The \$3M investment from the City has unlocked additional public and private funding, enhancing Kingston's economic growth.

To safeguard the City's investment, staff have implemented risk mitigation strategies, including local representation on the board and advisory committees, governance principles emphasizing inclusivity, and flexibility to repurpose the hub if market demand changes.

Council's conditions for funding have been addressed as follows:

- Matching funding

Negotiations to secure matching funding from Sustainable Development Technology Canada (SDTC) faced a setback in the fall of 2023 when the federal government suspended SDTC operations due to governance irregularities. Fortunately, staff have been able to secure a \$3 million contribution from Modern Niagara, owner of the Innovation Park facility where RXN Hub will be located for the build-out and operation of the facility.

- Finalizing Governance Model

The City approached GreenCentre Canada, a national Centre of Excellence for commercializing early-stage green chemistry discoveries, for assistance in developing a robust governance structure for the RXN Hub. GreenCentre was tasked with creating a skills-based competency framework for the RXN Board, evaluating the current capacity, and recommending additions of skills and qualifications as the organization moves from startup to full operation.

Advice emphasized the importance of incorporating EDI practices in board recruitment and governance. Additionally, they suggest establishing supporting groups such as advisory committees or communities of practice to provide specialized knowledge and guidance. These groups can enhance the Board's decision-making by offering expertise in scientific and technical areas, geographic considerations, and risk mitigation strategies. Council appointed Councillor Chaves to the board in 2023.

- Negotiation of lease terms

Due to the change in the model, the role and contribution made by Modern Niagara as an investor and the building owner, there is no longer a lease to be negotiated that would involve the City.

- Execute agreements with private and public sector organizations for the creation of the RXN Hub in a form satisfactory to the Director of Legal Services

As part of the City's due diligence process, a number of changes in the corporate structure of the RXN Hub not-for-profit corporation were recommended by City legal counsel and project lead partner Modern Niagara. A new Ontario not-for-profit corporation is being created called the Kingston Innovation Coalition (but will continue operating under the name RXN 'Reaction' Hub). Further, staff are finalizing a funding agreement that will define the scope of City participation in

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governance, use of funds, milestone-based payment schedule, reporting and accountability, performance measures and outcomes, compliance with regulations, conditions of termination and disposition of assets, and return on investment to the ecosystem.

Council and the public will be given a preview of the RXN Hub at an upcoming Innovation Summit- October 2-3rd. Additionally, the 945 Princess Innovation Park building, which has undergone almost \$80M in renovation and decarbonization will have a ribbon-cutting and tours. This facility will also be the location for the kickoff of the Kingston Climate Expo with demonstrations of climate technologies and panels on climate action on Oct 4-5th.

Recommendation:

Report is for information only.

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Authorizing Signatures:

ORIGINAL SIGNED BY DIRECTOR

**Craig Desjardins, Director, Office
of Strategy, Innovation &
Partnerships**

ORIGINAL SIGNED BY CHIEF

ADMINISTRATIVE OFFICER

**Lanie Hurdle, Chief
Administrative Officer**

Consultation with the following Members of the Corporate Management Team:

Paige Agnew, Commissioner, Growth & Development Services	Not required
Jennifer Campbell, Commissioner, Community Services	Not required
Neil Carbone, Commissioner, Corporate Services	Not required
David Fell, President & CEO, Utilities Kingston	Not required
Peter Huigenbos, Commissioner, Major Projects & Strategic Initiatives	Not required
Brad Joyce, Commissioner, Infrastructure, Transportation & Emergency Services	Not required
Desirée Kennedy, Chief Financial Officer & City Treasurer	Not required

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Discussion:

The RXN 'Reaction' Hub (RXN Hub) has been developed by thirteen founding partner agencies who lead Canada in sustainable ventures and chemical development. The founding organizations recognized the "scale-up gap" is prominent in chemical technology innovation and limits the ability to scale impactful companies. The solution is shared infrastructure and specialized resources to build a purpose-built 20,000 square foot facility in Kingston. Ventures who access the facility will also enter a customized program to access specialized talent and integrated services at an international level. The project aims to create a distinctive global commercialization hub, one of only three worldwide and the sole hub in North America, with a focus on retaining Canadian innovations in Canada. By doing so, the project also generates over 250 new job opportunities, contributing to the growth of the green economy in Eastern Ontario.

The RXN Hub project has been five years in the making. It is the culmination of multiple regional strategies for sustainable growth. These strategies are:

- City of Kingston's Economic Development: Sustainable Manufacturing
- 2030 Emission Reduction Plan
- Eastern Ontario EV & Battery Corridor
- Zero Plastic Waste Agenda
- Critical Minerals Strategy

Project construction is expected to be completed by the beginning of 2025. The 20,000 square feet of space at 945 Princess Street includes:

- Wet labs / mini-piloting
- Shared analytical equipment & lab
- Piloting bays
- Pre-manufacturing space
- On-site machine shop
- Access to on-site co-working space (including bookable meeting rooms, shared office space, hot desks)
- Access to community event space (10,000+ square feet of additional space)

The founding partners are listed below and have made commitments to contributions in the areas of capital investment, technical expertise, safety and facility management, access to specialized equipment, business and program development, talent development, and industry / market insights:

- Bioindustrial Innovation Canada
- Canada Cleantech Alliance
- City of Kingston
- DuPont
- Foresight Canada

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- Fractal Workspace
- GreenCentre Canada
- Kingston Process Metallurgy (KPM)
- Kingston Economic Development Corporation
- Loyalist College
- Modern Niagara
- Ontario Clean Technology Industry Association (OCTIA)
- Queen's University
- St. Lawrence College

Background

Changes in Cleantech Ecosystem Funding Environment

Sustainable Development Technology Canada (SDTC), an independent agency established by the federal government to fund Canadian cleantech projects, faced a significant setback in the fall of 2023 when the government suspended its funding. This suspension followed a third-party investigation triggered by allegations that some entrepreneurs with connections to the agency's leadership received preferential treatment in funding decisions. An Auditor General's report confirmed these concerns.

The federal government has recently announced the resumption of funding for Sustainable Development Technology Canada (SDTC) as the agency prepares to be integrated under the National Research Council of Canada (NRC). This integration of SDTC into the NRC is seen as a critical step in rebuilding public trust and enhancing accountability. Employees of SDTC will be offered positions within the NRC, and the agency's programs will be consolidated with the NRC's Industrial Research Assistance Program under the Canada Innovation Corporation. This restructured oversight is intended to ensure greater transparency and integrity in how public funds are managed and allocated within the cleantech sector.

Despite the challenges and governance failures at SDTC, stakeholders in Canada's cleantech industry emphasize the continued need for government support in commercializing clean technology products. The Auditor General's report, while critical, has sparked important discussions about the future of cleantech funding in Canada. Ensuring ongoing support for innovators is viewed as essential for Canada's efforts to combat climate change and strengthen the competitiveness of the nation's green technology sector. RXN Hub continues to have positive dialogue with the federal government.

Review and Recommendations of RXN Governance

The City of Kingston approached GreenCentre Canada, a Kingston-based national Centre of Excellence for commercializing early-stage green chemistry discoveries, for assistance in developing a robust governance structure for the RXN Hub.

GreenCentre was tasked with creating a skills-based competency list for the RXN Board, evaluating the current capacity, and recommending additions of skills and qualifications for

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future board members. The core competencies for the RXN Board include governance, business management, public sector knowledge, operational expertise, and other specific skills like French fluency.

As the organization and the Board transition from a startup phase to an operational phase several augmentations are suggested, including the need for formal governance training, technical expertise in chemical scale-up and safety, industrial experience, financial expertise, public sector knowledge, and real estate management. It is also recommended that the Board expand representation of equity, diversity, and inclusion (EDI) capabilities, which are vital for fostering a diverse and inclusive organizational culture.

GreenCentre's advice emphasizes the importance of incorporating EDI practices in board recruitment and governance. Additionally, they suggest establishing supporting groups such as advisory committees or communities of practice to provide specialized knowledge and guidance. These groups can enhance the Board's decision-making by offering expertise in scientific and technical areas, geographic considerations, and risk mitigation strategies.

By expanding and optimizing organizational competencies through both board recruitment and supportive groups, RXN can better navigate the complexities of scaling up and operating a publicly funded chemistry and materials-based technology hub, ensuring long-term commercial sustainability and alignment with community interests.

Redevelopment of 945 Princess Street- Innovation Park Facility

With building emissions representing a significant contribution to the global greenhouse gas crisis, Modern Niagara believes it is their responsibility to be a leader in solving this climate challenge.

They have made it a priority to not only provide their clients with solutions, but to demonstrate what can be done to existing buildings to achieve this.

The 945 Princess Street redevelopment project demonstrates how Modern Niagara can take an old, inefficient facility and eliminate virtually all GHG emissions and improve the overall energy efficiency without sacrificing the embodied carbon if we were to demolish and build new. Critical to achieving success in decarbonizing our buildings, new technologies and processes are paramount.

During the renovation project, a vision emerged of creating an innovation hub with sustainability integrated into all aspects of the construction, tenants and operations. RXN Hub has emerged as a uniquely positioned organization that can help our industry, among others, play its part in solving the country's climate crisis. This common goal has led directly to the unforeseen, but very welcome relationship with RXN Hub.

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RXN Hub Innovation Summit

RXN Hub's Innovation Summit (October 2, 2024) will gather key stakeholders in Canada to explore tactical approaches to scale Canadian clean technologies. Building on the momentum from last year's Impact Week Showcase, this summit will highlight key innovators, ecosystem members, and industry leaders working on multistakeholder projects for a more sustainable future.

Attendees will have the chance to tour the first-of its-kind hub facility and immerse themselves in the North American chemtech community. Individuals of all backgrounds are welcome at the summit. There will be something for every type of ecosystem stakeholder, however, programming is catered to innovation practitioners, founders, investors, and ecosystem members from the US and Canada.

An expected 300+ attendees from all over the world (the speaker's stage will feature representatives from Australia, Brooklyn, San Fran, Boston, Chicago, PEI, Vancouver, Ottawa, Montreal, Toronto etc.) are all coming to contribute to a vision that will create a sustainable future through collaboration scale-up and derisking projects for cutting edge technologies.

This event brings over \$1B in sustainable finance capital, many North American ecosystem leaders, several government representatives at all levels, key rising start-ups and forward-looking multinationals all into one room to build operational relationships that were previously impossible without the unique infrastructure that will be built in Kingston to facilitate growth.

Kingston Climate Expo

The Kingston Climate Expo presented by Utilities Kingston will take place from October 3-20, 2024 through the collaboration of multiple City departments, as well as Utilities Kingston kicks off at the newly renovated Modern Niagara Innovation Park facility.

The purpose of the Expo is to highlight the City's efforts to reduce its greenhouse gas emissions, and to support community members in finding ways to reduce their own carbon footprints, this three-week interactive and educational expo will focus on key themes outlined in the City's Climate Leadership Plan through multiple events and workshops.

As part of the Climate Expo, the City and its community partners will host a number of educational sessions including Plug 'N Drive, a Low Carbon Solutions for Business Event, Kingston Climate Expo Showcase, Women In STEM Panel and Energy Treasure Hunt Workshop.

The Kingston Climate Expo has attracted significant interest from sponsors, including the presenting sponsor Utilities Kingston, as well as Modern Niagara, Surgenor Truck Group, Mitsubishi Electric Heating and Cooling, Zamboni, Callidus Engineering and St. Lawrence College.

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More information about the Kingston Climate Expo can be found here.

<https://www.cityofkingston.ca/arts-culture-and-events/city-calendar-and-events/feature-events/kingston-climate-expo/>

Climate Risk Considerations

RXN Hub is located within 945 Princess Street, a newly-renovated, near net-zero building that prioritizes decarbonization. The building has been updated to foster discovery and experimentation while increasing environmental responsibility and contributing to the region's climate goals.

945 Princess is expected to yield an ~85% reduction in carbon emissions by 2025. Beyond the emissions standard of the facilities, RXN Hub will have an outsized impact through the chemistry-enabled cleantech ventures supported.

RXN Hub acknowledges that sustainability goes beyond environmental factors and takes into account social and economic factors. They are committed to addressing the problems of today in collaboration with aligned stakeholders across the ecosystem.

Financial Considerations

Council approved the allocation of up to \$3,000,000 from the Working Fund Reserve over a 3-year period to support the development of the RXN Hub by resolution in [Report Number 22-233](#).

Contacts:

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Other City of Kingston Staff Consulted:

Brandon Forrest, Director, Business, Real Estate & Environment

Troy Beharry, Manager, Partnership & Grant Development

Exhibits Attached:

None