Developing Growth Roadmaps for Toronto’s Green Industries

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Presentation Outline

- Economic Drivers
- The role of the Sector Development Office
- Defining the green sector and its size in Toronto
- The global growth trends of the green sector
- Challenges for Canada’s green industries
- The steps in developing an industry growth roadmap
- Current actions and partners
Toronto – the Driver of Canada’s Economy

- The GTA produces nearly 20% of Canada’s Wealth

**Canada's GDP (2016)**

- Toronto: 17%
- Rest of Toronto: 9%
- Rest of Ontario (without CMA): 19%
- Atlantic Provinces, NWT & Nunavut: 6%
- British Columbia: 13%
- Alberta: 17%
- Saskatchewan: 4%
- Manitoba: 3%
- Quebec: 19%

**1,783,700 Total Jobs in the City of Toronto**

**69%**
- Jobs in Key Sectors

**31%**
- Jobs in Rest of Toronto

**Key Sectors**

- Financial Services: 36%
- Education: 21%
- Fashion & Apparel: 6%
- Aerospace: 1%
- Design: 4%
- Life Sciences: 5%
- Food & Beverage: 6%
- Technology: 16%
- Green: 5%
The Role of the Sector Development Office

- We focus on key sectors of Toronto’s Economy including:

<table>
<thead>
<tr>
<th>Aerospace</th>
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<td>Fashion</td>
<td>Food &amp; Beverage</td>
<td>Green</td>
</tr>
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<td>Life Sciences</td>
<td>Smart Cities</td>
<td>Technology</td>
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- The Sector Development Office is built on the principles of **cluster development** to build and sustain robust networks of companies and partner organizations.

- We use both **push and pull strategies and tactics** to drive local economic growth.

- Our professional team of economic development specialists focus on the six key drivers to economic growth at a cluster level...
Key Drivers to Economic Growth

Collaboration Building
Strategies, collaboration building and networking.

Marketing and Promotion
Communicating the value of a product, service or brand to customers.

Policy & Regulations
The "environment" that businesses operate in.

Workforce Development
Talent development and building skills in the workforce.

Advocacy
Advocating for changes in government support.

Market Development
The expansion of the total market for a product or company.
Advocacy. Advocating for changes in government support for all the other "levers" listed above is often a key element of sector wide collaboration. This includes the lobbying for programs, policies and regulations that support the growth of the sectors and the changing of policies/regulations that hinder their growth.

Collaboration Building. A critical element is identifying key strategies to drive local economic growth for the whole cluster. This includes creating strong networks for the sharing of information, creating opportunities for collaboration, and building consensus on priorities.

Marketing and Promotion. Marketing is about communicating the value of a product, service or brand to customers or consumers for the purpose of promoting or selling that product, service, or brand. The provincial government's "Ontario Wood" campaign is an excellent example of a marketing program.

Market Development. The expansion of the total market for a product or company by entering new segments of the market, converting nonusers into users, and/or increasing usage per user. Examples of this would include the Feed-in Tariff program and international trade missions.

Policy & Regulations. The policies and regulations are the "environment" that businesses must operate in and are generally in place for the "common good" for society. Immigration policies used to attract skilled workers, the Building Code and CSA (Canadian Standards Association) standards are examples of these.

Workforce Development. Talent development and building skills in the workforce are crucial for companies to compete. This includes developing sector specific training programs, helping businesses hire employees and gain access to talent and attracting youth into the industry.
Economic Development & Culture

Defining Sectors, Clusters and Industries

- Economists have our own vocabulary 😊
  - Often the terms we use are interchangeable but may mean different things to specific stakeholders

- Sectors
  - Generally linked to industry classification codes of companies that do the same thing – for example NAICS 31183 is for Tortilla manufacturing which is a category of NAICS 311 – Food manufacturing.
  - However there is a lack of NAICS codes for the green sector – this is no NAICS for solar manufacturers even though there are more solar than tortilla manufacturers in Canada

- Clusters
  - Companies that are part of a supply chain - i.e. the corn mills that supply the tortilla makers and the food stores that sell the tortillas are part of the tortilla cluster.

- Industries
  - Often linked closely to sectors – i.e. industry sectors of the economy
  - However for the road mapping we’re using it to identify all the various supply chains that are found linked to core green sector segments.
Sectors vs. Clusters

**Sector**

- Competitors
  - Industry Organizations
    - Role: To find common ground that everyone agrees on

**Cluster**

- Collaborators
  - Cluster Management Organizations
    - Role: To create actions that will stimulate growth of the cluster
Components of an Industry Cluster

- Schools
- Incubators
- Financers/Investors
- Researchers
- Manufacturers
- Start-ups
- Retailers
- Service Providers
- Professional Services

Supportive Government
The Ties that Bind

Cluster Organization

Schools
Supportive Governm’t
Incubators
Financers/Investors
Researchers
Manufacturers
Start-ups
Retailers
Service Providers
Profession Services

Report on the value of cluster organizations for Toronto’s green industries: Released April 2019
Cluster Chains – Supply Chains on Steroids

The California Wine Cluster

- Grapestock
- Fertilizer, Pesticides, Herbicides
- Grape Harvesting Equipment
- Irrigation Technology
- Growers / Vineyards
- Wineries / Processing Facilities
- State Government Agencies (e.g., Select Committee on Wine Production and Economy)

Sources: California Wine Institute, Internet search, California State Legislature. Based on research by MBA 1997 students R. Alexander, R. Arney, N. Black, E. Frost, and A. Shivananda.
Toronto’s Diverse Green Sector

- Clean-tech, green-tech, the green economy – what is it?
- Understanding the economic impact of Canada’s green sector is hampered by a lack of national statistics and definitions of what the green sector is composed of.
- The City of Toronto defines our green sector as follows:
  - Economic activities that reduces environmental impacts through: 1. Environmental protection and remediation activities; 2. The sustainable use of natural resources; 3. The supply chain of goods and services that are significantly less energy or resource intensive than industry standards.
- Toronto’s green sector is composed of 5 key segments:

<table>
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<tr>
<th>Bio-Economy</th>
<th>Urban sawmills, furniture made from urban wood, green chemistry (bio-plastics), bio-fuels.</th>
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<td>Clean Energy</td>
<td>Solar, wind, batteries, district energy, smart thermostats, LED lights.</td>
</tr>
<tr>
<td>Green Buildings</td>
<td>Energy efficient windows, green roofs, builders.</td>
</tr>
<tr>
<td>Resource Management &amp; Environmental Protection</td>
<td>Water supply and sanitation, recycling, solid waste, soil remediation, pollution controls, environmental monitoring.</td>
</tr>
<tr>
<td>Sustainable Transportation</td>
<td>Electric vehicles, bikes, scooters, buses, trains, and public transit.</td>
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</tbody>
</table>
Diverse and With Many Relationships

- 5 segments and 29 clusters
… Many, Many Relationships
The State of Toronto’s Green Industries

- Significant growth in 2 of the segments
- Average annual job growth in the green sector is double Toronto’s average

**Distribution of Jobs in Toronto's Green Sector (2017)**
- Sustainable Transportation, 14,000, 45%
- Bio Economy, 1,800, 6%
- Clean Energy, 2,700, 9%
- Green Buildings, 5,400, 17%
- Resource Management, 7,100, 23%

**Green Sector Employment Growth**
(compounded average annual for 2012-2017)
- Total (Green Sector): 4.1%
- Bio Economy: 6.9%
- Clean Energy: 3.3%
- Green Buildings: 9.1%
- Resource Management: 0.4%
- Sustainable Transportation: 3.3%
Diverse and Spread out
But Some Concentrations
Canada’s Green Sector is consistently ranked in the top ranks of global indexes on innovation, research and supporting start ups.

Global Cleantech Innovation Index  https://i3connect.com/gcii
Green – A Rapidly Growing Sector Globally

Storm clouds ahead for Canada?

- Globally the cleantech sector is expected to be worth $2.5 trillion by 2022, a tripling of 2014 levels
- Canada’s share of the global cleantech market has fallen from 1.6% to 1.4% since 2008 – a 12% decline
- Canada’s international ranking fell from 14th to 19th place in cleantech merchandise exports from 2005 to 2014
- If Canada was to capture 1.6% of the global green market by 2025 then the sector would employee more people than the current automotive sector (130,000 direct jobs) in Canada
Tracking Green Industry Growth Drivers

- The Global Cleantech Innovation Index tracks industry growth drivers.
- An important caveat to Canada’s ranking: “However, there are only a few cleantech organizations and clusters in Canada.”
An Early Scan of Challenges

Challenges

• Unlike other sectors, in Canada the green sector does not have a single voice
  • There are over 40 green industry trade organizations
• Canada does not have a strong cluster eco-system. We have no local clean tech cluster organizations
• Numerous organizations are pointing to the lack of local green industry organizations in Canada as a barrier
  • Smart Prosperity Institute – Clean Innovation Discussion Paper
  • Global Cleantech Innovation Index (GCII)
• Articulating the economic impact and value of green sector in Canada is difficult due to a lack of statistics
• Support for green is wrapped up in emotions and often is politically motivated. i.e. “job killing carbon tax”
• Canada’s clean tech sector’s growth may be lagging other leading countries – we’re losing ground. Toronto may be lagging even greater.
The Global Cleantech 100 – Toronto is under represented

- An annual selection (by a N.A. consulting/investment firm) of the top potential new “winners” in the sector
- 12 Canadian firms on the list – but only 2 are from Toronto

# OF COMPANIES BY REGION

- Greater Vancouver, 7, 58%
- Ottawa, 1, 8%
- Greater Halifax, 2, 17%
- Greater Toronto, 2, 17%
Other Indications of Lagging (maybe)

- There are 6 window companies in Metro Vancouver manufacturing certified Passive House windows and doors, but none in Toronto.
An Industry Growth Roadmap – What is it?

- Road mapping is a flexible planning technique to support strategic and long-range planning, by matching short-term and long-term goals with specific initiatives that can be undertaken by stakeholders.

- It allows the identification, by consensus, of key barriers to growth and focuses on early quick and doable actions that help maximize growth and builds dialogue and strategic alignment between stakeholders.

- Unlike a Sector Strategy a Roadmap does not have to be complete in dealing with all the issues that may influence industry growth. A Roadmap selectively picks a few actions for early wins.

- The important thing is to put in place a plan that can be implemented that will have a positive impact on growth.
A Partnership to Help Maximize Growth

- Experience internationally shows that local government can be instrumental in supporting and initially steering local clusters growth.
- However ultimately it is the industry that needs to lead on initiatives.
- The Sector Development Office will need to work with partners in both the overall project and in each of the 5 segments of the Green sector in order to make this a successful long term initiative that will have impact.
- Focusing on what is needed to grow the industry will speed up the adoption rate which is critical for government plans to battle climate collapse.
The Toronto Green Industries Growth Roadmap Initiative

- The project has a number of distinct stages of development and must account for the very distinct nature of each of the sector’s five primary segments.
Three Steps to Action

UNDERSTAND
- Collect
- Engage
- Question

LEARN
- Survey
- Discuss
- Analyse

DECIDE
- Collaborate
- Consider
- Agree

Motivate
- Discussions with stakeholders
- Scan of issues

Persuade
- Survey

Move
- Roundtables to develop roadmaps
Phase 1: Understand

- Establishment of a Sector Wide Advisory Committee
  - Multi-stakeholder and cross sectoral representation to provide advice to the project team
    - Example: the resource management segment has distinct separate clusters (water and recycling as an example) – what is the best way to identify each clusters growth opportunities?

- Asset Mapping of the 5 Segments of the Sector
  - Stakeholders, influencers and supporters
  - Charting out the supply chain of the green clusters

- Online Consultation – Opportunities for Growth
  - Short online scan/questionnaire to identify key areas – report on website

- Key Data Analysis
  - Updated modelling to refine estimates of size of the green sector – green buildings for example is using 2010 data
Phase 2: Listen

- Comprehensive on-line and in-person survey to understand the industries strengths, weaknesses, threats and opportunities and provide a perceptual analysis of the priority areas to maximize growth.
- The report will be broken down to analyze the issues and specific needs of each of the 5 segments of the sector.
Phase 3: Decide

- Roundtables for each of the 5 segments to identify key priorities for actions in each of the sectors
  - Issue: some segments are diverse and we will need to decide on a roadmap for a specific section of the segment (i.e. the water or recycling section of Resource Management)
- Development of draft roadmap reports
- Workshop of Green Sector key stakeholders from all 5 segments:
  - Challenge statement: how can we get the sector working together?
- Follow up meetings on segment roadmaps – next steps and establishment of action teams.
NOW: Status as of September

- The City working with industry associations, cluster organizations, environmental groups and other stakeholders to develop the roadmap paths

- Challenges
  - Clusters are more complex than anticipated
  - Partner organizations have shut down or under resourced
  - Resource constraints at the City – transference of priorities
  - Higher level of engagement and interest from stakeholders

- Opportunities
  - Aligned with other City Divisions’ initiatives: Transform Toronto’s Clean Energy Strategy; Solid Waste’s Circular Economy Strategy

- Next Steps
  - Green Industries Survey about to be released
  - Toronto’s Green Industries Directory (600 organizations about to be released)
  - Roadmap for the Clean Energy Sector
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