



# Generating opportunity



Human resources needs in the  
bioenergy, biofuels and industrial  
biotechnology subsectors



Building skills for Canada's bio-economy



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## About BioTalent Canada

### Helping Canada's bio-economy thrive globally

Canada is a world leader in biotechnology—the application of living organisms to industrial, agricultural, medical and other processes and products. To maintain and build on this leadership, bio-economy companies need highly skilled, job-ready people. By acting as a national hub and central resource for employers, job seekers, students, educators and government agencies, BioTalent Canada helps make this happen.

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The bio-economy involves the research, development, manufacturing and commercialization of technologies and products for such areas as:

- |                 |                   |
|-----------------|-------------------|
| Agriculture     | Genomics          |
| Aquaculture     | Human Health      |
| Bioenergy       | Industrial        |
| Bioinformatics  | Life Sciences     |
| Bioproducts     | Medical Devices   |
| Biosciences     | Nanotechnology    |
| Environment     | Natural Resources |
| Food Processing | Nutraceuticals    |
| Forestry        | Pharmaceuticals   |



Building skills for Canada's bio-economy



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# Executive summary



**Canada stands to benefit greatly from the rise of alternative energies.** In addition to its plentiful resource base, this country has a long history of innovation in bioenergy, biofuels and industrial biotechnology that positions it well to emerge as a global market leader. Success depends on having the necessary human resources (HR) capacity: the right number of skilled, job-ready professionals to support companies as they develop and commercialize new solutions.

While the worldwide economic downturn that began in 2008 has caused business to slow, companies in the bioenergy, biofuels and industrial subsectors expect renewed growth in the near future as market demand increases. That growth will bring with it the need for new HR capacity. The sector today has the opportunity to proactively develop that capacity, to prepare itself strategically and proactively.

## The BioTalent Canada HR survey

To meet the industry's need for greater understanding of labour market issues, BioTalent Canada recently commissioned a study of the national and global bioenergy, biofuels and industrial biotechnology subsectors. Through interviews with 30 individuals—primarily from industry but also representing other stakeholders—BioTalent Canada collected qualitative and quantitative information about these subsectors.

The study found that, in the short term, research and development (R&D) and manufacturing skills are likely to top the list of bioenergy-subsector companies' HR

requirements. Workers with commercialization skills and industry knowledge will also be in high demand. Because most bioenergy-related firms are small or medium-sized they tend to have neither the capital nor the specialized HR resources and expertise to recruit, retain and develop the talent they need. External supports are required: HR tools, compendia of best practices, mechanisms for fostering collective efforts on a subsector-wide scale to address key challenges.

As the go-to resource for biotechnology job seekers and employers, BioTalent Canada offers tools to help workers become employment-ready and help companies find the right talent. These tools have been developed for industry and, importantly, with industry, reflecting companies' real-world requirements.

An unintended outcome of the recent HR survey was the finding that the resources BioTalent Canada has created to date—and those it has planned for the near future—are indeed what companies are seeking. The challenge is to make more companies aware of them. This, like so much else in the bio-economy, will require partnership, collaboration and collective effort.

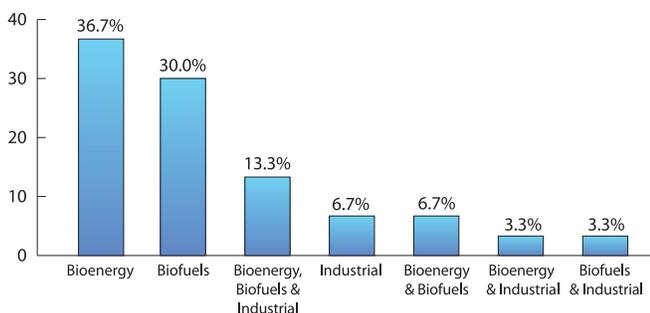
## Key findings of the survey

Analysis of the bioenergy subsector survey results points to a number of distinct action areas including:

- Building awareness within the subsectors of current and soon-to-be available BioTalent Canada HR tools such as *The PetriDish* job bank, the *BioSkills Recognition Program*, the *BioTalent HR Tool Kit*, the *Career Focus Program*, and the *Vice-President of Manufacturing Skills Profile*
- Developing an industry-oriented tool for communication, information exchange and feedback on HR issues
- Developing skill and competency profiles (e.g., the upcoming *Biofuels Plant Manager Skills Profile*) as tools for both academia and industry
- Supporting stakeholder-collaboration efforts
- Developing additional strategic HR support tools

Figure 1

### Study participants' area of focus



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*While the worldwide economic downturn that began in 2008 has caused business to slow, companies in the bioenergy, biofuels and industrial subsectors expect renewed growth in the near future as market demand increases.*

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# Bioenergy today



## Deeper roots, greater demand

**In the 1970s, bioenergy innovation was driven almost entirely by financial incentives.** It was an area of exploration without a market to receive its discoveries.

That's no longer the case. Today's public is environmentally conscious. Governments are starting the transition to sustainable, low-carbon economies. Legislation in many jurisdictions now mandates the use of bioenergy to reduce greenhouse gas emissions—creating a guaranteed market for bioenergy solutions.

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*As western countries like Canada pursue energy security as a priority, homegrown bioenergy alternatives seem far more appealing than oil reserves in regions that are vulnerable to political and social unrest.*

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The economic imperatives to develop alternative energy options have become almost as compelling as the environmental ones. For businesses, energy savings translate into dollar savings that are critical to competition. For individuals, lower energy costs mean having more income.

As a result of this increasing demand—and by virtue of decades of growth and development—the bioenergy, biofuels and industrial subsectors are stronger and more self-sufficient than ever before. Their networks and expertise are beginning to match those of traditional energy players. Throughout the bioenergy, biofuels and industrial subsectors companies are at a variety of stages of development, which suggests the collection of subsectors is transitioning from early stage research and development-heavy activities to later-stage production, manufacturing and commercialization.

Finally, biofuels technology is developing rapidly, accompanied by increasingly greater economies of scale and lower costs. As western countries like Canada pursue energy security as a priority, homegrown bioenergy alternatives seem far more appealing than oil reserves in regions that are vulnerable to political and social unrest.

### Defining the terms

- **Biotechnology** is the application of science and technology to living organisms. It is comprised of such core technologies as DNA/RNA applications, protein and peptides/enzymes, cell and tissue culture and engineering, gene and RNA vectors, bioinformatics, nanobiotechnology, process biotechnologies, and sub-cellular processes.
- **Bioenergy** is a subset of biotechnology focused on harnessing and producing renewable forms of energy from organic material.
- **Biofuels** are a form of bioenergy, and can be liquid (e.g., plant-derived ethanol and biodiesel), solid (e.g., derived from wood chips, saw dust and organic refuse) or gaseous (e.g., methane obtained through the gasification of organic material).
- **Industrial biotechnology** concentrates purely on industrial processes and applications (e.g., fermentation to manufacture bio-products).

Canada has already earned a reputation for leadership in various biotechnology-related subsectors. The biofuels, bioenergy and industrial biotechnology subsectors in this country are on a track of innovation that is sure to continue, although they face a challenge competitors elsewhere do not—namely, a lack of investment capital. While this shortcoming must be addressed, it does not change the fact that biotechnology will remain central to the Canadian economy, partly due to the country's wealth of natural resources.

### What lies ahead: The near-term perspective

In 2009, BioTalent Canada surveyed stakeholders in bioenergy, biofuels and industrial biotechnology to compile a view of those subsectors today, identify possibilities for the future, and determine the human resources requirements for seizing effectively upon emerging opportunities.

Most companies said global economic conditions would continue to have an impact on demand for their products in the immediate future. BioTalent Canada measured

companies' expectations of demand across a range of categories, as indicated below:

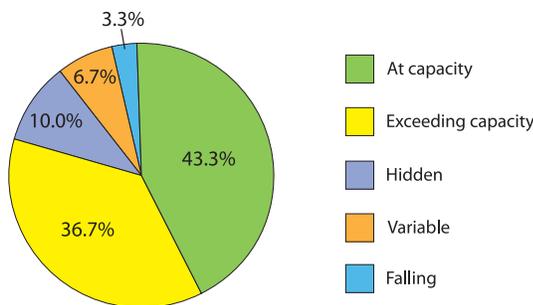
- **Exceeding capacity** — desire for a product/service exceeds production capacity
- **At capacity** — desire for a product/service matches production capacity
- **Variable** — desire for a product/service is inconsistent or unpredictable
- **Hidden** — existing products/services do not satisfy this particular consumer desire
- **Falling** — desire for a product/service is in decline
- **Non-existent** — there is no consumer interest in a product/service

Survey participants estimated roughly half of all current domestic demand (46%) to be at or exceeding capacity. Global demand was at 50 percent in those same two categories.

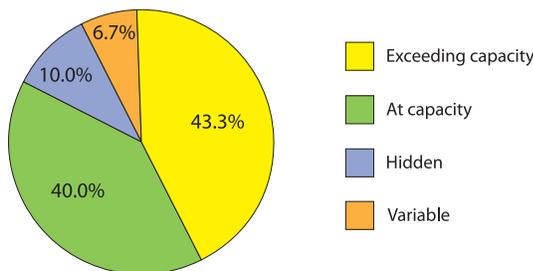
Importantly, the remaining demand is felt to be hidden, not absent. It exists, but isn't yet met by any products or services,

Figure 2

**A. Anticipated national demand**



**B. Anticipated global demand**



or else is not fully encouraged by the regulatory environment. Should the right solutions be brought to market or public policy modified to encourage uptake of innovative technologies, that hidden demand will become actual.

Companies expect higher-level demand to grow. The majority said that over the next three to five years they believe at-capacity and exceeding-capacity demand will climb to 80 percent nationally and 83 percent globally [Figure 2]. The national figure more or less mirrors the international one. Most new demand is expected to come from the United States, Europe and within Canada. Meeting this demand—especially in cases where companies are already at or beyond their capacity to deliver—requires capital, infrastructure and, perhaps most critically, capable, qualified, experienced talent.

**Growth factors**

What's driving the growth in bioenergy, biofuels and industrial biotechnology? BioTalent Canada asked stakeholders to rank the most significant influences on their subsectors over the next three to five years. From greatest to least, they indicated:

1. Energy prices (90%)
2. Technology advancements (73.3%)
3. Regulatory environment (66.7%)
4. Ability to attract qualified talent (33.3%)
5. Public perception (30%)

The inclusion of public perception in this list is interesting. With greater public awareness of the bioenergy, biofuels and industrial biotechnology subsectors, more students are likely to make educational choices that will prepare them for work in these and other biotechnology fields. In other words, public perception will help drive young people toward biotechnology careers, building up the country's skilled, qualified talent base.

**The role of public policy**

Policies encouraging the use of bioenergy and biofuels are driven by the need to reduce greenhouse gas (GHG) emissions in the automotive sector, increase energy security and create jobs within Canada's rural and agricultural sectors. These will support companies' commercialization efforts by stimulating market demand.

# HR: A subsector snapshot



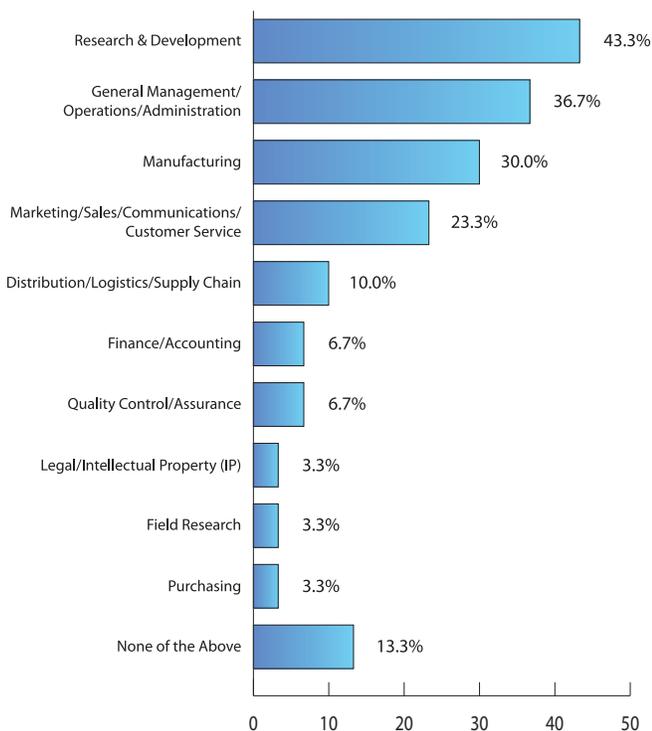
## Growth is inevitably accompanied by HR needs.

Sixty-three percent (63%) of organizations in bioenergy, biofuels and industrial biotechnology reported having unfilled positions requiring industry-specific skills. A number needed engineers and technologists with previous experience or knowledge of their subsectors. This demand for talent can only be expected to intensify as these companies' businesses grow. Organizations without vacant positions believed they would have been hiring if it weren't for the economic upheaval.

While certain roles are highly specialized, others call for skill sets that are applicable across the subsectors and even outside the biotechnology space. This is both promising—suggesting that available talent might be migrated successfully into bioenergy, biofuels and industrial biotechnology—and also a challenge, because it pits bio-economy companies against those in larger, more established traditional industries in the competition for experienced personnel such as plant operators, operations managers and the like.

Figure 3

### Currently unfilled positions



## Principal areas of need

Research and development (R&D) is one of the most prominent areas in which human resources are required by firms in the bioenergy, biofuels and industrial biotechnology subsectors. More than 43 percent of those surveyed claimed R&D-related gaps [Figure 3] to be

*Because the bioenergy-related companies are mostly small or medium-sized companies, they tend not to have the capital, specialized HR resources or expertise to recruit, retain and develop the talent they need. External supports are required.*

unfilled today. This is typical for innovation-oriented sectors and suggests an urgency to the HR needs: Canadian companies must have the capacity to design, develop and refine new technologies—or risk losing ground in the global marketplace.

Companies throughout the bioenergy, biofuels and industrial biotechnology subsectors are at various stages of product development today. Overall, these areas of the bio-economy seem to be moving out of early stage research and development and into later-stage production, manufacturing and commercialization. Secondary products and services are more heavily represented at the R&D stage, as companies with successful primary products or services have the resources to dedicate to researching and developing secondary products or services.

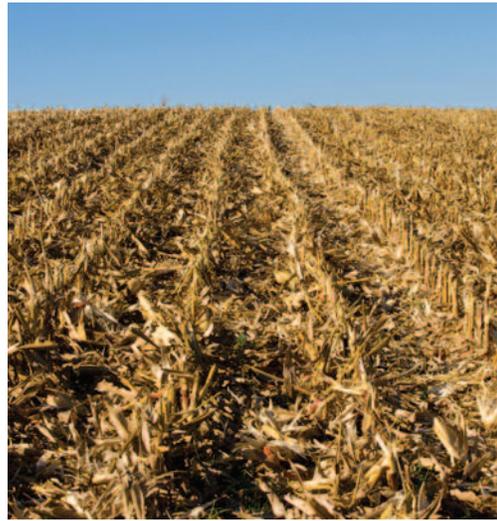
In addition to R&D, rounding out the list of areas with the most unfilled positions were: General Management/Operations/Administration; Manufacturing; and Marketing/Sales/Communications/Customer Service.

Looking at the types of unfilled positions in the featured subsectors of the bio-economy, it's evident that opportunities to transfer skills from other sectors abound—with the support of skills development and enhancement initiatives.

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## Types of roles required in the bio-economy

Background research that contributed to the bioenergy subsector survey identified numerous roles and occupations needed in the bio-economy, including such examples as below:

### **Distribution/Logistics/Supply Chain**

Distribution Manager  
Maintenance Technician  
Plant Manager  
Supply Chain Manager

### **General Management/Operations/Administration**

Administrative Director  
Agricultural and Forestry Supervisor  
BioDiesel Manager  
Business Development Director  
Planning and Scheduling Engineer  
Project Manager

### **Manufacturing**

Biochemical Development Engineer  
BioDiesel Pretreat Operator  
Electrical Engineer  
Enzymatic Engineer  
Manufacturing Assistant  
Mixing and Blending Machine Operator  
Thermochemical Engineer

### **Marketing/Sales/Communications/Customer Service**

Communications Manager  
Customer Service Representative

### **Purchasing**

Farm Product Purchaser  
Purchasing Manager

### **Quality Control/Assurance**

Documentation Coordinator  
Quality Assurance Technician  
Quality Control Specialist  
Safety Officer  
Screening and Evaluation Technology Manager

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*It's evident that opportunities to transfer skills from other sectors abound—with the support of skills development and enhancement initiatives.*

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### **Research and Development**

Biochemist  
BioFuels Agricultural Crop Specialist  
BioJet Fuel Research Director  
Biomass Gasification Specialist  
Director of Research  
Laboratory Technician  
Research Scientist  
Plant Breeder  
Process Engineer

### **Field Research**

### **Finance/Accounting**

### **Human Resources**

### **Information Technology**

### **Legal/Intellectual Property**

### **Regulatory Affairs**

For a fuller listing of bio-economy roles and occupations, download the *Biotechnology Job Titles Report* at [www.biotalent.ca](http://www.biotalent.ca).

## HR capacity and company size

In 2008, BioTalent Canada released *Splicing the Data*—a comprehensive, benchmark-establishing labour market information study of Canada’s bio-economy (and the only statistically significant one of its kind). *Splicing the Data* revealed that small and medium-sized enterprises dominate the bio-economy as a whole. The bioenergy, biofuels and industrial biotechnology subsectors conform to this trend.

Because the companies surveyed are small—almost half reported fewer than 10 employees—they typically focus on delivering just one product or service. This makes their operations highly specialized and usually restricts their activities to a single market area.

Within such firms, one person may be responsible for a number of different functions, and competing time pressures often push HR activities to the back burner. Small companies in particular tend to dedicate most of their resources to activities that directly generate revenue, and HR management seldom falls into that category. It is not that these firms fail to recognize the importance of HR capacity development: they simply do not have the expertise or resources to do so. They need support to address that part of their business—for example, through access to simple, easy-to-use resources that alleviate time and cost pressures.

### Company size: Survey findings

Of the companies surveyed by BioTalent Canada for this report:

- 3.3% had no employees other than the owners
- 26.7% had 1 to 5 employees
- 20% had 5 to 10 employees
- 23.3% had 10 to 25 employees
- 16.7% had 25 to 100 employees
- 10% had more than 100 employees

## Regional variances

Small companies in small towns find it hardest to attract and retain skilled, experienced workers. Enticing people to relocate to a rural area can be challenging—especially

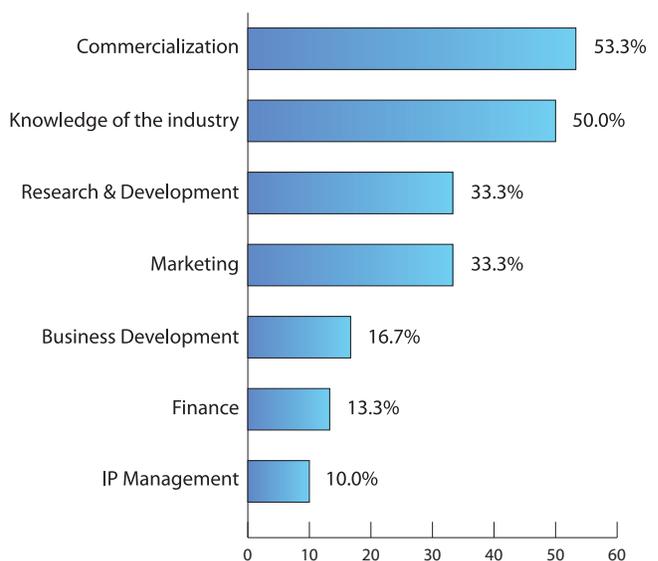
if the available jobs are highly specialized, because this effectively limits alternative employment options in case of job loss. Adequately competitive wages and upward mobility are not always easy to offer. One solution to this is to transition workers already living in rural areas from their traditional industries into the bioenergy, biofuels and industrial biotechnology subsectors. The recent economic upheaval has left many in the manufacturing sector unemployed: with skills enhancement, these individuals could be excellent candidates for work in the bio-economy. The challenge for small firms then becomes one of accessing the right tools or programs to assist with transitioning those workers into their subsectors.

## Skills gaps

More than half (53.3%) of the companies surveyed said they require skills not currently available among their existing staff. Commercialization skills and pre-existing knowledge of the industry are the two greatest needs areas. R&D and marketing skills are also required [Figure 4]. Many employers report shortages of workers with commercialization and R&D skills, and with knowledge of the industry. (See Table 2 on page 12 for more detail on recruitment challenges and skills shortages.)

Figure 4

### Skills needs



Over the next three to five years, the list of functions in short supply will evolve to include quality control/assurance as well as marketing/sales/communications/customer service. These are expected to replace general management/operations/administration and distribution/logistics/supply chain in the top five. R&D and manufacturing functions will also remain among the most critical to fill—both accounting for more or less half of respondents' anticipated function-specific requirements in the next three to five years [Figure 5].

*While cost savings and insufficient infrastructure are major reasons organizations choose to outsource, the biggest driver is the shortage of skilled workers.*

Employers are increasingly aware of the importance of fit—having the right personalities and work ethics within their teams. A person's soft skills play a major role in determining whether he or she works well within a certain organizational culture. While certain skills can be taught and acquired over time, others tend to be more the functions of personality and experience. Surveyed companies identified the most in-need soft skills as

partnership/networking, management/leadership, and communication.

### Reliance on outsourcing

Ninety percent of employers outsource skills and tasks. While cost savings and insufficient infrastructure are major reasons organizations choose to outsource, the biggest HR driver is the shortage of skilled workers.

While economics inform corporate decisions to outsource, it is in fact a combination of HR-related factors that drives most companies to offload tasks or functions—for example, shortages of skilled and experienced workers, the inability to recruit and retain staff, and inadequate business, management, HR and leadership skills [Table 1]. Employers need to address these challenges collectively, sharing resources and working together to identify and address skills shortages in the future. An organization like BioTalent Canada—with its national perspective and capacity for producing industry-informed resources, tools and programs—has a key part to play in this collective effort.

In the bioenergy, biofuels and industrial biotechnology subsectors, outsourcing usually occurs within Canada and the United States, although larger organizations do look farther afield—to Europe, China and India.

Figure 5

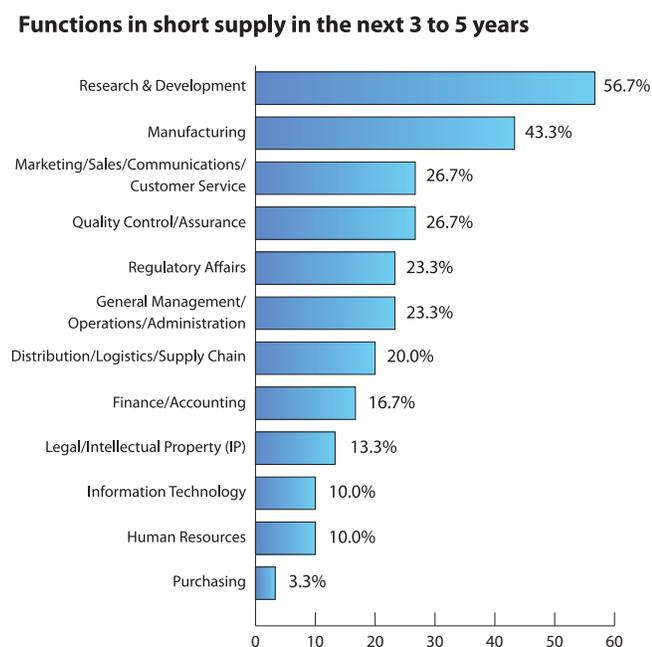


Table 1

**Reasons for outsourcing**

Reason	Percentage
Shortage of skilled/experienced workers	10.0%
Inability to recruit/retain staff	6.7%
Insufficient business/management/ HR/leadership skills	6.7%
Competition for skilled workers	3.3%
Inability to provide competitive compensation	3.3%
Cost savings	23.3%
Limited financial capital	16.7%
Insufficient infrastructure	13.3%
Government policy and regulatory limitations	6.7%
None of the above	20.0%

HR-related 30.0%

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### Knowledge, learning and connectedness

Bioenergy, biofuels and industrial biotechnology organizations indicate they need help understanding labour market conditions and policy environments—and for mechanisms to facilitate communication among them so that they can work collectively to address common challenges. Firms largely agreed on the need for:

- recruitment and retention supports
- enhanced workforce mobility (especially when it comes to the entry of qualified new immigrants to the country)
- greater HR funding

Companies were generally unaware of existing HR tools or how those tools might help them address these needs. This points clearly to a requirement for awareness-raising activities, as a number of resources available through BioTalent Canada, already answer such requirements.

The companies surveyed also noted the importance of ensuring that education and skills development reflect industry needs and ensure the job readiness of new graduates—something many organizations find is not the case today. BioTalent Canada helps provide academic institutions with the knowledge, tools and resources to improve the relevance of their programs and curricula.

### Recruitment, retention and turnover

As mentioned previously, companies in the bioenergy, biofuels and industrial biotechnology subsectors must compete with other industries for qualified workers. They must find ways to match the levels of compensation offered by organizations in other sectors and balance the workloads of their staff in order to attract and retain qualified workers. As a positive observation, turnover rates are relatively low in these featured areas of the bio-economy.

Table 2 presents the top-ranked recruiting challenges facing bioenergy subsector companies today. Capital and compensation issues are empirical realities to be dealt with

(and as Table 3 shows, will become increasingly important to address), but as far as the supply of candidates goes, a number of options are available. Drawing workers from under-utilized pools (for example, recruiting young graduates and recently retired workers), offering more flexible working arrangements and providing more competitive compensation packages are among the potential solutions for recruitment. Recently retired workers represent a promising group as they are highly skilled, seeking fresh challenges and often not as driven by monetary ambition.

Beyond direct compensation through salaries and benefits, companies could promote the advantages of work in their industry including stimulating work environments and good quality of life. They also have the advantage of appealing to people’s ‘green’ values—the desire to work in a field that’s good for the environment and human sustainability.

Table 2

#### Top recruitment challenges today

Challenge	Percentage
Lack of candidates with required skill sets	46.7%
Competition for qualified candidates	33.3%
Unable to find candidates quickly enough	26.7%
Insufficient capital/resources to recruit appropriate candidates	23.3%
Excessive salary expectations	13.3%
Loss of skilled candidates to companies abroad	10.0%
Complex immigration rules and procedures	10.0%
Unable to assess qualifications of internationally educated professionals	6.7%
Lack of language skills among internationally educated professionals	3.3%
Loss of candidates to another sector	3.3%
None of the above	10.0%

As well, companies are looking at how to enhance the skills of their existing staff to meet HR needs. Most surveyed (83.3%) said they offer in-house or on-the-job skills development and 40 percent support continuing education—usually at no cost to the employee.

BioTalent Canada has developed a number of programs and resources to address recruitment, retention and turnover challenges in the biotechnology industry. The *BioSkills Recognition Program* will pre-screen job candidates to alleviate some of the HR burden from organizations and help them find the right matches. Several BioTalent Canada programs led by industry, such as *Bridging BioTalent* and the *Career Focus Program*, offer students and recent graduates the opportunity to gain valuable hands-on work experience while employers and employees can take advantage of professional and skills development opportunities through a number of BioTalent Canada courses.

Table 3

**Expected HR challenges in the next 3 to 5 years**

Challenge	Percentage
Limited financial capital	66.7%
Shortage of skilled/experienced workers	43.3%
Government policy and regulatory limitations	40.0%
Competition for skilled workers	36.7%
Inability to provide competitive compensation	26.7%
Inability to recruit and retain staff	20.0%
Insufficient business/management/leadership skills	20.0%
Insufficient funding to academia	20.0%
Difficulty hiring internationally-educated professionals	16.7%
Communication/marketing/branding challenges for recruitment	13.3%
HR planning not integrated into planning	10.0%

**The road ahead**

Over the next three to five years, bioenergy, biofuels and industrial biotechnology companies expect to face several major challenges in carrying out their HR activities. As Table 3 shows, limited access to financial capital is anticipated to become the number-one barrier: companies simply may not have the funds to execute their plans.

Firms also expect the difficulty of finding skilled, experienced workers to persist—more than 43 percent of those surveyed say this will continue to be a problem over the next three to five years [Table 3]. While many

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*BioTalent Canada has developed a number of programs and resources to address recruitment, retention and turnover challenges in the biotechnology industry.*

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candidates have impressive academic qualifications, they lack on-the-job-experience—which is costly and time-consuming for employers to offer. As mentioned above, more directed, focused skills development may alleviate some of this.

Competition for talent remains a concern. Prior to 2008’s economic upheaval, businesses in the bioenergy subsectors were struggling against those in larger sectors.

# Conclusions and recommendations



**Once the economy recovers, demand for bioenergy, biofuels and industrial products and services is expected to increase.** In the near term, companies will experience shortages of research and development and manufacturing skills. Attracting engineers and technologists as well as other workers with commercialization skills and knowledge of the industry will be key.

BioTalent Canada's survey of bioenergy, biofuels and industrial biotechnology stakeholders revealed five key action areas to support the development of a sound, sustainable HR base:

**1. Raise awareness of available HR tools**  
BioTalent Canada has a suite of resources created in partnership with industry—and more in development—to support the HR activities of companies in the bioenergy, biofuels and industrial subsectors. Targeted marketing efforts are needed to raise the profile of these products.

**2. Develop a centralized industry communications platform**  
The BioTalent Canada website has the potential to be used as a tool for industry players to communicate, share ideas and build strong relationships—sharing information about the labour market, technology and other issues, and to engage in recruitment and retention activities.

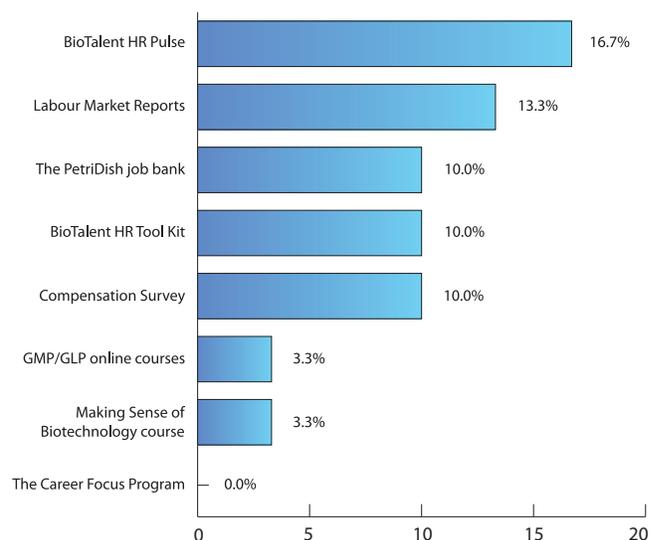
**3. Develop a comprehensive set of industry skills and competencies**  
The needs of industry should inform skills development programs to ensure the incoming workforce is equipped with the necessary job-ready skills and competencies—both function-specific and so-called 'soft skills'.

**4. Develop strategic HR support tools**  
Skills profiles for jobs in the bioenergy, biofuels and industrial subsectors would be helpful recruiting tools. Skills development resources could facilitate the transfer of workers into these subsectors from other sectors. And a pre-screening tool for workforce entrance would ease the HR pressures on organizations.

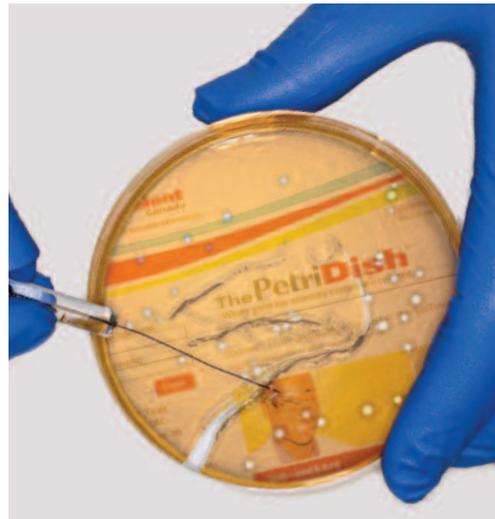
**5. Facilitate stakeholder involvement in contributing to public policy**  
A mechanism to support dissemination of regular policy briefs regarding the bioenergy, biofuels and industrial biotechnology subsectors would keep industry members informed and enable them to engage with government proactively.

**Actions underway**  
BioTalent Canada has developed a number of HR tools to support the above-mentioned strategies, including several labour market information reports, the *BioTalent HR Tool Kit*, *The PetriDish* online job bank, *Bio-economy Career Profiles* and *Bio-economy Skills Profiles* for various occupations. Further skills profiles will be developed, outlining required competencies for success specifically in the bioenergy, biofuels and industrial biotechnology space (e.g., a *Biofuels Plant Manager Skills Profile*). These address the under- (or non-) representation of bio-economy-specific occupations in the National Occupational Classifications (NOCs), which directly influence industries' access to HR tools and supports. (Occupational forecasting considers job openings and growth rates related to specific occupations identified in the NOCs, and job seekers hoping to come to Canada use the NOCs to determine if the country offers the kinds of opportunities they're looking for.)

Figure 6  
Awareness of BioTalent Canada resources



*BioTalent Canada has a suite of resources created in partnership with industry—and more in development—to support the HR activities of companies in the bioenergy, biofuels and industrial subsectors.*



The collage includes a screenshot of the BioTalent Canada website with the following text:

**BioTalent Canada**  
Building skills for Canada's bio-economy

Students & Educators | Job seekers | Employers

**The PetriDish™**  
Where great bio-economy careers are cultured.

Welcome to the PetriDish, now part of the BioTalent Canada website with easier navigation and new features.

**Employers**

- Post a Job
- Search Talent

Bio-economy **Skill Profiles** now available. You can help develop more.

[Read More...](#)

**Regulatory Affairs Specialist**  
Bio-economy Skill Profile Summary

**Module 2: Human Resources Planning**  
BioTalent HR Tool Kit

In addition, BioTalent Canada administers the *Career Focus Program*, which provides wage subsidies for new graduates; has created online modules to gauge essential biotechnology skills; and developed the online soft-skills instructional course to teach soft skills within the context of the biotechnology work environment. These initiatives have been led by industry and/or developed with its participation. BioTalent Canada is also establishing a *BioSkills Recognition Program* to recognize the competencies of anyone entering the bio-economy workforce.

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*Raising awareness of BioTalent Canada's resources through communication and outreach is therefore a priority—to ensure that all industry members have the opportunity to utilize and capitalize on them, and to contribute to their refinement and further development.*

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Industry members aware of BioTalent Canada's programs and offerings recognize the importance of this work. All of those surveyed who had used BioTalent Canada resources or services in the past acknowledged their value, and respondents who felt labour shortages will be a major issue for their subsector said organizations such as BioTalent Canada are critical to facilitating HR hiring and placement. Smaller companies stand to benefit most

from BioTalent Canada's initiatives given that they rarely have adequate in-house HR expertise.

The principal problem today is awareness: only 37 percent of respondents knew of BioTalent Canada and its services—and then to varying degrees. As Figure 6 shows, the *BioTalent HR Pulse* eNewsletter and BioTalent Canada's labour market reports were among the best-known resources while the *Career Focus Program*, which could directly help address staffing needs, was not known among respondents.

Raising awareness of BioTalent Canada's resources through communication and outreach is therefore a priority—to ensure that all industry members have the opportunity to utilize and capitalize on them, and to contribute to their refinement and further development. To leverage the good work that has been done by BioTalent Canada and industry together, this awareness-raising too should be an act of partnership involving all bio-economy stakeholders, utilizing their collective networks and addressing their mutual needs.

By promoting existing resources and continuing to develop new ones that address the industry's specific concerns—and by mapping those concerns through ongoing labour market and related studies—BioTalent Canada can help ensure the readiness of this country's bio-economy companies to seize upon the opportunities before them.

## Strong Board of Directors

The Board of Directors is composed of experts in the field of HR: CEO's, CFO's and CSO's from across Canada with extensive financial and industry experience representing companies and organizations in Canada's bio-economy. BioTalent Canada is not a membership organization and therefore relies on the guidance provided by its dedicated volunteer Board of Directors.

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