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Wednesday 24 September 2008

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Mercredi 24 septembre 2008

Standing Committee on Estimates

Ministry of Research
and Innovation

Comité permanent des budgets des dépenses

Ministère de la Recherche
et de l'Innovation

Chair: Tim Hudak
Clerk: Sylwia Przezdziecki

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ASSEMBLÉE LÉGISLATIVE DE L'ONTARIO

STANDING COMMITTEE ON ESTIMATES

COMITÉ PERMANENT DES BUDGETS DES DÉPENSES

Wednesday 24 September 2008

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The committee met at 1601 in room 151.

MINISTRY OF RESEARCH AND INNOVATION

The Vice-Chair (Mr. Garfield Dunlop): We'll call the meeting to order. Minister Wilkinson, welcome this afternoon. We have a total of two hours and 20 minutes remaining in the estimates for the Ministry of Research and Innovation. I know that our Chair would have liked to have seen this possibly completed today so we wouldn't bring somebody back for 20 minutes. I'm curious—I've had a request from the parliamentary assistant for unanimous consent for all parties to drop seven minutes from their comments today. Is that in agreement?

Mr. Michael Prue: If I could, Mr. Chair: I don't know that you're privy to what happened, but our time was stood down and condensed. So I have 30 minutes left. I'm willing to drop seven minutes from the 20-minute rotation that follows. If that's what's being requested, I'm willing to do that—

The Vice-Chair (Mr. Garfield Dunlop): Yes, just overall today to drop seven minutes at some point from each member.

Mr. Michael Prue: Because what I understand will happen, I am next on the rotation for 30 minutes, and then it would go 20, 20, 20. I am willing to drop seven minutes from my last 20 minutes.

The Vice-Chair (Mr. Garfield Dunlop): Would you be willing, Mr. Hillier? So then we are in agreement with that, and yes, in fact you do start because you stacked your time. You have 30 minutes remaining. You have 30 minutes in this next rotation and it's actually your turn as soon as I tell you to go ahead.

Mr. Michael Prue: Yes.

The Vice-Chair (Mr. Garfield Dunlop): Are we okay with that, everyone? Okay. So we will get out of here around 6 o'clock then and that will be the end of the estimates for research and innovation.

Mr. Lou Rinaldi: If Mr. Prue wants to give up more time, we'd love to get out of here before 6.

The Vice-Chair (Mr. Garfield Dunlop): You're welcome to give up more time as well, you understand? Maybe he'll give you a wink of the eye and you'll be able to do that, Mr. Rinaldi.

With that, Mr. Prue, it's in your ballpark for the next 30 minutes.

Mr. Michael Prue: Thank you very much. I'm hoping within the 30 minutes that I can complete and won't need my last 13, but of course it depends on the brevity of the answers.

Hon. John Wilkinson: I'll try to be brief, Mr. Prue.

Mr. Michael Prue: All right, so the pressure is on. Just a couple of housekeepings from yesterday: I asked for a complete list of projects funded over the past three years from the Ontario research and development challenge fund and the same complete list of projects funded over the past three years from the Ontario research fund. Has the ministry staff had an opportunity to prepare that list in the last 24 hours?

Hon. John Wilkinson: I'd refer that to my deputy.

Mr. George Ross: We're in the process of just completing that list. It's partially complete, Mr. Prue, but we'll follow up with that after today, if that's okay.

Mr. Michael Prue: All right That sounds fine. On to my next question, then.

The ministry has set aside $20 million for something called the social venture capital fund. What is the purpose of this fund? How is it different from other funds? The social part—what is intended here?

Hon. John Wilkinson: That's a very good question, Mr. Prue. It was a campaign pledge of our party. You'll recall that there's a very successful model—I would say a world-leading model in England—that has been adopted; I believe it was under the Blair government. The idea is, you can take the principles behind venture capital and social objectives and marry those two in an innovative way to get better social outcomes than the traditional method we're using right now. So what we did is, we have funded social innovation generation at MaRS, and I'll just give you some background.

We proposed the creation of the social venture capital fund in our 2008 budget. The objective of the fund is to find innovative solutions to difficult social problems and improve social outcomes by providing emerging innovative social ventures with the funding necessary to grow to a stage where they can attract private investments or develop private sector partnerships and operate in a sustainable manner. Developing new successful strategies for investing in social ventures and measuring social returns in order to help increase the level of institutional, private and corporate investment in Ontario-focused innovative social ventures is a key objective.

I'll just outline briefly the structural elements. There would be an investment eligibility criteria and an investment strategy for the fund, which will be determined through a business plan to be developed over the next several months by MaRS in collaboration with our ministry, as well as the Ministry of Community and Social Services and the Ministry of Finance.

My ministry was allocated some $20 million from the Ministry of Finance for this purpose. I'm trying to see if I can give you a concrete example. I think all of us as members understand that there are companies that have both a profit motive and a social motive, and I'm thinking of—

Mr. Michael Prue: Bill Gates?

Hon. John Wilkinson: No, not philanthropy. A company, for example, where people donate their used clothing which is in good shape and then that, in turn, is sold to people and that company itself generates a profit, which is reinvested in maintaining that business. So they've found a sustainable private sector way to achieve a social benefit. The question is, if there was a fund that was available that those innovative groups could tap into, could we actually expand the depth of that type of thinking? What we found is that business leaders are actually quite intrigued and interested. I know they've found some success in the United Kingdom. In 2006, the United Kingdom government created an Office of the Third Sector as part of the cabinet office. Their government has also contributed a matching £20-million private investment in Bridges Community Ventures, a community investment fund that invests in deprived parts of the United Kingdom. The second phase of Bridges, launched in 2007, was made up entirely of private sector investment.

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I can also say that in Toronto—oh, we can actually give you an example. St. Jacob's bakery in your riding, in the Beaches—are you familiar with that?

Mr. Michael Prue: St. Jacob's—

Hon. John Wilkinson: I understand that it's called St. Jacob's bakery. It helps by taking people who are on the street. It trains them in the art of bakery and it pays their cost. It makes a profit and it's reinvested back in that social enterprise.

The idea is that there are a number of innovative ways throughout Ontario. This money—

Mr. Michael Prue: I'm not even aware of a church named St. Jacob's or anything named St. Jacob's.

Hon. John Wilkinson: Well, I'm happy that my staff was able to provide that.

Mr. Michael Prue: Perhaps if your staff could tell me where it's located in my riding.

Hon. John Wilkinson: The reference is to the Beaches. I know that's your riding, but it's a broad area. Perhaps you and I could go together.

Mr. Michael Prue: Perhaps.

Hon. John Wilkinson: I don't want to presume what the fund will invest in, but there is this growing part of the economy where people are using a business model to achieve a social objective. The social venture capital fund is about acting as a catalyst, as I was saying before, to spur on that type of investment.

The key structural features of our fund would be an evergreen structure, which means the returns generated are automatically returned to the investment pool, with the aim of keeping a continuous supply of capital available for future investments. So we have $20 million that goes out the door; it generates a return, if we're successful, and that money comes back into the pool and can be reinvested in other social enterprises to help them get up and running. The ones that are successful will pay back the fund and earn the fund a rate of return, and that money would then be put back out. So we're hoping that this $20 million would be a seed investment that would be of an evergreen nature.

What we're going to do is target a combination in the investment strategy—because you have to have a diversified portfolio—of social enterprises, which are organizations with primarily social goals that use business to achieve those goals, as well as some socially responsible businesses which operate in a more socially conscious manner than mainstream business. Investments will not be targeted towards achievement of market rates of return from mainstream business. In other words, it won't compete against business itself.

The good folks at MaRS have been contracted by us to manage the fund and make those investment decisions. At the moment, we are negotiating the business plan with MaRS and we're hoping to have a launch of that new social venture fund by the end of this year, 2008. We'll be delighted to keep the House posted on our progress.

Mr. Michael Prue: I thank you. If your capable staff could let me know where St. Jacob's is, I'd like to visit them.

Hon. John Wilkinson: Well, I would like to know as well. The two of us will go find that together.

Mr. Michael Prue: Okay, perhaps we will.

Hon. John Wilkinson: I'm looking forward to it.

Mr. Michael Prue: All right. The next question I have is: Since 2005, an organization called the Ontario Research and Innovation Council has advised the ministry and the Premier on a long-term strategy on research and innovation. Can you give me an example of the kinds of reports, policies, briefs and advice the council has produced, how many documents—it's news to me, because I don't think I've heard of it before.

Hon. John Wilkinson: When I had the chance to be questioned by Ms. Scott on the first day of our hearings, we had quite a discussion on that. We talked about the Ontario Research and Innovation Council. I can recap that for you.

Mr. Michael Prue: A condensed version, because I can read the Hansard for the rest.

Hon. John Wilkinson: It was a blue-ribbon panel. We'll recall that in 2005, the Premier under his leadership created the Ministry of Research and Innovation. He did three things to get advice: First, we were able to secure Dr. Alastair Glass from Ireland to be the initial

deputy minister; second, he convened the Ontario Research and Innovation Council to give him advice. It was made up of some amazing Ontarians, both scientists and business leaders: as I mentioned, Dominic Alessandro, who is the head of Manulife; Mike Lazaridis from RIM; Tak Mak from Princess Margaret; John Mann from Chrysler; Elspeth Murray from Queen's; Gilles Patry, who at the time was the president of the University of Ottawa; Doug Barber from Gennum Corp.; Janet Rossant, the head of research at Sick Kids; Molly Shoichet, a researcher from Toronto Western; Mamdouh Shoukri, at the time, was vice-president of research at Mac, and is now the president of York; Ilse Treurnicht, who we all know runs MaRS; and Tom Vair, who is the executive director of the Sault Ste. Marie Innovation Centre.

That blue-ribbon think tank provided advice to the Premier about ensuring that we had focus. As well, he asked me, as his parliamentary assistant, to do a consultation across the province, and I met with some 400 people. All of that advice went together to create the Ontario innovation agenda, which was launched at the University of Ottawa and at the Economic Club here in Toronto last spring. That is the strategic plan that we have at our ministry, and that's what we're working on.

The advice that we got is realized through the Ontario innovation agenda, and it's about the need for us to see the appropriate role of government, which we believe is to act as a catalyst. It is to ensure that we have research excellence, based on scientific excellence, but that it is appropriate for us to ask that that research excellence be translated into our own jurisdiction. As I've mentioned before, we have three areas of focus in the province of Ontario: conquering disease, learning how to live sustainably within our environment and expanding the digital universe. There is a business case for all of those areas of focus. As well, we believe that what we need to do is celebrate and tell our story because that helps us attract the world-class researchers who are here.

This morning, I was at Massey College meeting the winner of this year's Friesen award, Dr. Harold Varmus, who's the head of Sloan-Kettering. Last year, of course, it was Dr. John Evans who was successful. Again, that's part of an outreach that we're doing to make sure that the top scientists around the world understand what's going on here in Ontario and how important it is for us to celebrate those people, both in science and business, who are committed to this province, and who every day are being lured away by other jurisdictions to move their research shop some place else. So we thought that it was very important that we celebrate that.

That was the Ontario innovation agenda. So the Ontario Research and Innovation Council's task was to provide advice to the Premier in his capacity as the minister, and their work is done. It's found throughout the Ontario innovation agenda, which, of course, is available on the website of our ministry.

Mr. Michael Prue: Okay, so their work is done, the reports are finished and they're all available on the website. Nothing more is to come?

Hon. John Wilkinson: Not from the Ontario Research and Innovation Council. They had a very clear mandate from the Premier; they provided that advice and we've moved forward to what I would refer to as the implementation stage.

Mr. Michael Prue: All right. The next question—we're moving right along here. Can you describe the purpose of the innovation demonstration fund—this is something new. Can you tell us what projects it has funded?

Hon. John Wilkinson: That also is a good question. We were having some discussions about that as well over the last two days. The innovation demonstration fund—

Mr. Michael Prue: It was before my arrival.

Hon. John Wilkinson: Yes, that's right.

The innovation demonstration fund is a separate program at the Ministry of Research and Innovation. It's a four-year program that was allocated $30 million. It's administered by my ministry and it focuses on the commercialization, at the initial demonstration or pilot stage, of globally competitive innovative technologies, processes and/or products. Preference is given to bio-based environmental and alternative energy technologies.

I can tell you that we are prepared to provide up to 50% of eligible project costs, to a maximum of $4 million per project. There are 10 projects that have been successful. We've entered into an agreement and we've made public announcements.

The first is Plasco Energy Group in Ottawa, which was turning waste into clean energy using plasma arc technology that was first invented at the National Research Council.

Mr. Michael Prue: That's okay. I'm very familiar with it.

Hon. John Wilkinson: And actually, Plasco—we were quite happy. Plasco actually landed a contract with—

Mr. Michael Prue: Alberta

Hon. John Wilkinson: —Red Deer, Alberta. So an Ontario green technology company is selling green technology to a municipality in Alberta. I can, if you like, talk about the other nine projects.

Mr. Michael Prue: Go ahead, but briefly—just as fast as that one.

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Hon. John Wilkinson: Sure. Woodbridge Group: They make bio-based foam as an application in the automotive industry. We've invested $1 million to support the research and commercialization of soy-based polyoil in polyurethane automotive products.

There is GreenCore Composites; their product is called Green Inside. We've invested $400,000 in GreenCore Composites to set up a demonstration plant in Mississauga for the production of its Green Inside material, a high-performance, natural-fibre-reinforced composite.

There's Sterling innovative products, which makes brushless electric motors. We've invested $1.85 million for the development of inexpensive robust computer-

controlled electric motors for use in equipment such as lawn mowers and snow blowers.

Mr. Michael Prue: That's brushless?

Hon. John Wilkinson: Yes, brushless. I've actually used it, Mr. Prue. I can tell you that a lawn mower, pound for pound, emits about 90 times more pollution than a car. Cars nowadays have all of these catalytic converters and emissions controls. Lawn mowers don't have that. People want the power of a gas-powered lawn mower, and someone who always uses an electric lawn mower hates the cord. What they've been able to do is figure out, using brushless technology, how to have a lawn mower with the power of a gas mower without needing a cord, because it's battery-operated and the battery is charged by solar energy. That company is in Guelph, and our investment is actually allowing them to move in to the snow blower market as well. So we were very proud—not to do their work as a business, but to actually help them in the key phase where they're trying to create a demonstration product.

As you know, taking a technology and then scaling it up to a mass production is quite risky. There are a lot of bugs that you've got to get out of the system when you're taking a technology and scaling it up, particularly a new, innovative technology. That's what the fund is geared towards.

Verdant Power: We've invested some $2.2 million in their $4.5-million green energy project, using innovative water turbines to generate renewable power from the current of the St. Lawrence River. Verdant is in Burlington; the test site is in Cornwall beside the St. Lawrence River. As I was telling people, the sun doesn't always shine, the wind doesn't always blow, but the river always flows. These are underwater turbines that have a constant, steady stream of power, the kinetic energy, that they convert from the water into electricity, and they're right beside the grid in Cornwall.

There's Menova Energy. We're supporting them with a contribution of some $3 million towards the demonstration of a concentrated solar thermal and solar electric generation system. Their product is called the Power-Spar. Menova comes from Ottawa. They're using a company called Woodbine Tool and Die north of Toronto, which was losing some of their contracts from the automotive industry; instead, they've picked up this new order book from Menova in green technology. Instead of a regular solar panel, it does two things. Using mirrors that track the sun, it concentrates both the light and the heat, so you get two things out of it: You get the solar thermal power as well as the photovoltaic. They're installing their first Power-Spar as a demonstration at Wal-Mart's new superstore in Markham. They're selling their first demonstration product to Wal-Mart, which as a company has decided to go green.

As well, we've invested just over $1 million at 3M in London to help develop a line of engineered films that can be applied to automotive trim parts to replicate the appearance and paint of metallic finishes. For example, on cars we have things that look like chrome. Chrome is expensive, there are quite a few environmental challenges and if you ding it up, you have to get a new chrome piece. At 3M—the same people who came out with the Post-it pad—they figured out a way to actually have a film that looks just like chrome, and it's low-cost and low-weight. Again, in the auto industry, what they're looking for is how to dramatically reduce the weight of a vehicle, because that improves its fuel efficiency.

In Stemergy, which is in Delaware, just outside of London, we've invested some $3.3 million in a pilot plant which is a bio-refinery using plant fibre—flax, hemp and other fibre crops—to generate new composite materials. That goes to the fact that in Europe, for example, a lot of the noise-deadening interior parts inside of a car are made out of hemp. In the United States, you can't grow hemp; it's illegal. In Canada, you can. The car industry is looking for new bio-materials not based on fossilized carbon, but based on renewable carbon—for example, hemp—and this new bio-refinery is producing the feedstock for the bio-materials that the auto industry in Ontario is looking for.

There's a great company called KuX, and they have their Azeo-Sep project. We've invested just over $1 million. The company is in the Oakville-Burlington area, and we're helping them because they use advanced membranes that purify 30,000 litres of potentially spent hazardous chemicals per day, so that they can be recycled. They use hydrophilic and hydrophobic properties of these special membranes that they've developed. The scientists there all used to work for the NRC in Ottawa. Basically, what they're able to do is—you have, in industry, a lot of contaminated water that's filled with chemicals. Right now, that generally is incinerated. That's where that goes, or it's land-filled. These guys have figured out how to separate the water from the chemicals, so that you can recycle the water and the chemicals. Those are tremendous advantages to the environment and a tremendous advantage to the company. And they've been able to do that at scale; they are able to purify some 30,000 litres of contaminated water a day in this new system. They're building this demonstration plant in the Burlington-Oakville area, and we're making an investment there.

Also, there's 6N Silicon, a company that has also now received funding under our Next Generation of Jobs Fund. We've contributed some $1.5 million towards their pilot-scale solar production. They have figured out a new way of creating very thin silica wafers. In solar cells, the thinner the silica wafer, the better the power conversion. They have an interesting process. My understanding is that, today, there's a very labour-intensive way of getting those silica wafers. Generally, they're made in the Third World. You have a block of silica, and people cut the silica, trying to get nice, thin wafers of silica.

These guys here in Ontario are very innovative. It's almost like the fondue method. What they do is, they melt the silica, and they take a very fine wire and pass the wire up through. The silica drops down and, of course, it's very thin, and it cools into a very thin layer of silica.

If there are any flaws, they throw it back in. So there's energy that goes in to make this process, but there's no waste. And so they've found that they have a tremendous cost advantage and a very high-quality product.

That's a company that, 24 months ago, was an idea in somebody's head, and they're already building their new plant I think in Mrs. Mangat's riding, if I remember correctly. Yes? She's very proud of that—and I think they're going to be hiring 85 people and meeting a global demand.

I want to stand corrected, Mr. Prue. Maybe this will ring—do you know of St. John's Bakery in the Beach?

Mr. Michael Prue: I know where St. John's is, yes.

Hon. John Wilkinson: Okay, well, it's—

Mr. Michael Prue: Not St. Jacob's.

Hon. John Wilkinson: Not St. Jacob's.

Mr. Michael Prue: Thank God—

Hon. John Wilkinson: But now that they have changed that—so you and I will be going to St. John's Bakery, if I remember correctly. It's a date, then. But that is just an example, as I was saying, under innovative social ventures.

So those are the companies—as I was telling Ms. Scott yesterday, I think we've received the applications of some 73 or 78. Ten are now public knowledge because we've entered into binding agreements with those companies and have announced those, and we look forward to making announcements in the future.

The information about how to apply is on our ministry website.

Mr. Michael Prue: Terrific. And St. John's is on Kingston Road. How much time do I have, Mr. Chair?

The Vice-Chair (Mr. Garfield Dunlop): Six minutes and seven seconds.

Mr. Michael Prue: Six minutes? That should be enough for me to ask what I think may be my last question, unless some others are engendered.

The Ontario Centres of Excellence receive approximately $34 million a year in operating expenses. How many centres are there and can you give me a list of them?

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Hon. John Wilkinson: Sure. The history of the Ontario Centres of Excellence goes back to the mid-1980s. Their function is to bridge the gap between industry and academia, so that industry can say, "These are the problems we have," and allow academia to rise to those challenges, to try to solve them. They are, in a sense, virtual centres of excellence. So I wouldn't think of it as a cluster in a particular location. What they have is centres of excellence around six areas of focus. I know that we're going to get those areas of focus for you right now, if you'll just give me a moment. Here they are. I knew three of them off the top of my head, but I better make sure that I've got—actually, there are five centres and then we actually gave them a special task back in 2006. There's a centre for energy, a centre for communications and information technology, a centre for earth and environmental technologies, a centre for materials and manufacturing and a centre for photonics.

Mr. Michael Prue: For which?

Hon. John Wilkinson: For photonics.

Mr. Michael Prue: Photonics, okay.

Interjection.

Hon. John Wilkinson: That's right. The enabling technology using fibre optic cable to transmit information.

Mr. Michael Prue: So you've given me the five. You said there was a sixth one—

Hon. John Wilkinson: Yes. As well, we gave them a special task. Two years ago, we allocated $15 million, if I remember correctly, and we asked them to fund projects in regard to renewable energy. They had a special round of competition for that; I remember going to the University of Waterloo for that announcement.

Mr. Michael Prue: They received $34 million. Can you tell me how much is apportioned to each of the centres?

Hon. John Wilkinson: Pardon me?

Mr. Michael Prue: My understanding is that there was a total spent of approximately $34 million a year. Can you give me an indication of how this is apportioned throughout the six of them?

Hon. John Wilkinson: The Ontario Centres of Excellence have, for many years, been at arm's length from the government of Ontario. They were created, as I said, many years ago. There's a five-year funding agreement. When I first became minister at the end of October, November, that agreement was up for renewal; I extended it for one year. I've said this publicly, that the Ministry of Research and Innovation is an evolutionary step of all of the investment we've made collectively, all three parties and three different governments going back to about the mid-1980s, but the ministry now being a stand-alone ministry, I felt that we had a series of commercialization efforts under way that we inherited, that migrated to the ministry.

Ontario Centres of Excellence is one of our major investments, as is MaRS, but I have a network of commercialization activities right across the province, based both on sectors and regions. For example, we have something called ELORIN in Kingston, the Eastern Lake Ontario Research and Innovation Network. They provide a place for academic and business leaders to come together and work together on projects. Through ELORIN, we provide a suite of services to help on that in regard to sourcing venture capital, securing intellectual property, writing business plans and marketing plans, for example.

I have 12 regional innovation networks across the province. So when I looked at that, as the minister, I felt that it was important that we review the whole range of different programs that we are providing across the province of Ontario through OCE, MaRS and my regional and sectoral innovation networks. I was able to get a blue ribbon steering panel made up of experts from both Ontario and internationally. I've set them a task of ensuring that we don't have duplication, that we don't

have areas that we should be working towards that are missing.

The Vice-Chair (Mr. Garfield Dunlop): You have a minute, Minister, to clean this up.

Hon. John Wilkinson: I've also made sure that in all of these different programs that we'd have a consistent standard in regard to transparency and accountability of the taxpayers' money. That review is happening right now and I hope to have a report back before the end of this year. That will inform me to make sure, as I look at renewing the existing contracts that I have with the various agencies that deliver part of the front-line work of the ministry, that we're consistent, transparent and accountable and that we're getting the most effective use of the taxpayers' money.

Mr. Michael Prue: Thank you very much.

The Vice-Chair (Mr. Garfield Dunlop): That just about cleans up your time too, so thank you, Minister, and thank you, third party. We'll now go over to the government, Mrs. Mangat.

Mrs. Amrit Mangat: Minister, we have been listening intently to what you have had to say about Ontario's vision for the future. You have told us about the innovation agenda. You have told us about programs such as the Ontario research fund, the Next Generation of Jobs Fund and the innovation demonstration fund.

I'm particularly interested in the innovation demonstration fund, which is building on Ontario's strength in the cleantech sector. Of course, looking at cleantech, it is easy to see why we would focus on this sector. One of the residents of my riding brought up the issue of Corporate Knights; that's the Canadian magazine for responsible businesses. I was reading an article in the cleantech issue, which looked at the next 10 emerging cleantech leaders of tomorrow; more than half of these companies are Ontario-based.

I'm pleased to share with committee members that one of the companies you were speaking about a couple of minutes before is in my riding. That's 6N Silicon. That company uses metallurgical technology for purifying silicon and then they produce solar cells from that. That magazine has predicted that the size of the solar global market by 2012 would be $27.5 billion, which is huge.

The magazine also stated, "Greentech could be the largest economic opportunity of the 21st century."

Our government understands that cleantech is more than just green energy and recycling. It spans across the economy. Our government, in investments through programs like the innovation demonstration fund, is placing Ontario at the forefront of these industries. Could you outline some of the immediate effects of the Ministry of Research and Innovation's investment?

Hon. John Wilkinson: Sure, Mrs. Mangat, I'd be delighted to. I would agree with you that the market opportunity here is huge. If you look at the Ontario innovation agenda, it's called Seizing Global Opportunities. Because we were able to get advice from global experts who came in and looked at our jurisdiction from a global perspective—perhaps not the kind of more myopic view that we have, being in this province, but actually people coming from away—we learned a couple of things. One, we are a research powerhouse. We are a magnet for world-class talent. What we are not good enough at yet is the ability to take ideas that are created and invented here by our top researchers and translate them into the economy. We need to make that much easier to do, and those jurisdictions like ours which have the benefit of a high dollar and see the opportunity that climate change presents—we all know what the challenge is, but we actually see the opportunity that presents. I'm particularly interested in noting that in the States both of the major parties' candidates are talking about how they need to embrace the green economy.

As I say to the kids in grade 5—and we all visit grade 5 in our role as MPPs because they study government—we're the only species on this planet that doesn't know how to live sustainably within our own natural environment. Every other species on the planet has got that down cold except us. So that is the great challenge of the 21st century: How do we wean ourselves from fossilized carbon and use renewable sources of energy, whether it's hydro, solar or wind or renewable carbon? All the carbon that's above ground, not the stuff that's down a couple of thousand feet that we've been pulling out of the earth for some 150 years—that is, I might add, already sequestered. It's one of the issues that people think, if we use that stuff, that we're going to have to figure out how to resequester it, how to put it back into Mother Nature where it won't affect our environment.

What we're trying to do—and I think 6N Silicon is a good example of that. As a catalyst, government needs to be aware of what those opportunities are, that we don't interfere with business, that we don't interfere with science, that we don't allow political science to interfere with science. We understand the power of the market, but our role in government, we feel, is to act as a catalyst to allow these people that normally don't interact to interact. What we'll find when we're dealing with a company like 6N Silicon—a start-up company—is what the suite of services are that we can provide to help them move that business forward.

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What we look for as a government and what we need to look for as taxpayers is: Do these companies have groundbreaking technological innovation and a global market potential? Because that's how we're going to grow globally competitive companies in the future. It won't be because we're the lowest-cost jurisdiction. It will be because we will have a product that the world wants to buy because we're meeting a global need. Obviously, renewable energy, as the economists have been telling us, is one of those areas. That's why it's one of our areas of focus.

When you look at solar technology—there are two, I would say, holy grails in solar technology, particularly renewables. One is, how do you improve the photovoltaic conversion rate? In other words, how do you get more power out of the sunlight? A solar cell, no matter how

good it is, has the same amount of sunlight hitting it. The question is, how much juice, how much electricity can you get out of that? That requires technological innovation. It requires, for example, an even thinner and more perfect layer of silica wafer, which is what 6N is doing. It's part of that solution about how to improve the efficiency.

The other limiting factor in all renewable energy that is intermittent, like wind and solar, is the battery: How do you store that energy? The great debate now is between battery technology and hydrogen. I can tell you that our government is investing in both technologies, because there is not a clear signal from the market yet as to which one is the better solution. So we're doing much in that.

I was mentioning the other day—this was the Premier's Innovation Award—a company that is using nano materials with ceramics to create new batteries that would be environmentally sustainable. Ceramics, by themselves, are not damaging to the environment, but I can tell you that a lead battery that leaks is—so a ceramic battery that doesn't heat and that holds a charge. Sankar Gupta is a good example of an Ontario researcher who's at the cutting edge of that.

As well, I had a chance to go to the University of Toronto and meet with Dr. Ted Sargent, a cutting-edge researcher at the University of Toronto, who is using, as I was saying to Ms. Scott, something called quantum dots of silica. Silica is ubiquitous. It is inexpensive. But quantum dots, at the billionth of an inch, actually convert not just sunlight to electricity, which is visible light, but also the parts of the light spectrum that we do not see, both the infrared and the ultraviolet. So if you have a solar cell that is picking up all of the possible energy, not just the energy from visible light but from either side of that spectrum, that is going to be a more powerful solar cell. And instead of having rigid solar panels, you could actually embed this nanotechnology in your clothes and put it on paint. You'd be able to generate a solar charge, an electrical charge. That would be an example of what we consider to be a game-changing technology.

The reason we have the Ministry of Research and Innovation is that by seeing the cutting-edge research, it allows us to take limited resources and apply them in areas where we feel that there has been a true breakthrough made here in Ontario. As I said, the job of the ministry is not to create jobs in Indonesia or Germany, it is to help create jobs here in Ontario.

All of these things are good examples of how we have to deal with today's reality. We need to improve the processes around renewable energy. I talked about Verdant Power and their innovative way of getting power from rivers, like the St. Lawrence or the Ottawa River or the Niagara River—powerful rivers with a steady stream. As well, we have our ability to be able to see beyond today and to see those things which are actually groundbreaking technological innovations, and ensuring that we get there first.

Ontario's success story is RIM, and RIM was a technological breakthrough. It was the ability to figure out how to have email in a handheld device, all of the time. Prior to that, it wasn't possible. That technological innovation has transformed wireless communication in the 21st century. That was a Canadian, an Ontario innovation, coming out of the University of Waterloo. So we need to be able to see that, to see those opportunities, and Ontario innovation as seizing global opportunities; that is actually the name of the document.

Mrs. Amrit Mangat: Can you share with us some other success stories falling under the innovation demonstration fund?

Hon. John Wilkinson: I was actually highlighting for Mr. Prue the 10 that are now public. For me, I think that as we look to how to transform Ontario's manufacturing powerhouse, there are a couple of things that we need to do, and these projects are around that. One is we need to come up with new materials that are stronger and lighter, and, instead of damaging the environment, that are actually created sustainably within our environment. That's what bio-based materials can do for us.

I think of the example of Menova—an innovation from a company in Ottawa which now has people hired in Vaughan—to make this new Power-Spar solar thermal and solar photovoltaic combined unit, which will be demonstrated by Wal-Mart. There is a large market when it comes to these large department stores, and it's important for them to figure out how to be powered by renewable energy. So we think that there's a tremendous opportunity there.

Now, it's business; there's no guarantee that these things are going to win. You have to make the best choices that you can. But what we look at is innovative technology, where the intellectual property has been secured and where there's a global market. People can't, I think, debate with me whether or not Wal-Mart is a global market opportunity; it is. It is a global company. But that doesn't mean that there aren't other companies that would be if this is demonstrated to be powerful. And where's that going to be built? It's going to be built by the people who got in on the ground floor, and that's Woodbine Tool and Die. Looking at a diminishing order book for auto tech parts, they were able to see the opportunity of creating green tech parts for the renewable energy market.

I think those are probably, for me, the examples of how we're sowing seeds and they're starting to sprout. What we need to do is nurture them and help seed our economy with the type of manufacturing jobs that are going to be required in the 21st century.

Mrs. Amrit Mangat: Thank you, Minister.

The Vice-Chair (Mr. Garfield Dunlop): You folks have about seven minutes and 40 seconds left. Next question, Mr. Craitor.

Mr. Kim Craitor: I do have a question of the minister. Before I start, I'm extremely pleased to have the opportunity to ask this question. I want to share that with you, because it's very personal to me. I think it's not a secret that I was affected by cancer and I went through the process and had the treatments. It was actually very

enlightening to me because, as much as I've always supported all the different cancer fundraisers, whether it's the Terry Fox or the bike rides and all those things, even I often wondered how far we've come with solutions, with better ways of treating cancer. It always crossed my mind.

So having gone through the process—I remember sitting there and talking with the doctors and the radiologists and the different people, and they were sharing with me how at one time, the cure was worse than the cancer itself: cobalt treatment. They were telling me that, at that time, it seemed like the right thing to treat people with, and they shared with me how far they had come. In fact, I remember the doctor even telling me, "Nine years ago, your form of cancer—we would not even have known that it was a form of cancer." That's how far we've come forward.

The reason I really wanted to ask this question of you—and I just wanted to give you some background as to why I thought it was so significant. The Ontario Institute for Cancer Research—and we know it's an independent, not-for-profit organization—really is, now I can honestly say it, making a huge difference in the lives of Ontarians and people around the world through its focus on prevention, early detection, diagnosis and the treatment of cancer. The institute is leveraging the research excellence at the universities, research hospitals and health research institutes across Ontario, leading to greater integration of cancer research efforts across institutions. This funding provides opportunities for internationally renowned scientists to come to McMaster and continue their work, as well as opportunities for undergraduate, graduate and post-doctorate students to become more groundbreaking researchers of tomorrow.

What I'd like you to do, Minister, and I feel that it is important for the people of Ontario to hear this from you, is outline the steps our government is taking to make sure this fundamental part of Ontario's fight against cancer can continue to do its important work.

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Hon. John Wilkinson: Well, thanks, Mr. Craitor, and I know all of us around the House are very happy to have you here because at one time we were all worried about whether or not you'd be able to come back. Your own personal story about dealing with cancer has inspired us all.

I can say that the Ontario Institute for Cancer Research was the result of cancer researchers in the province saying, "This is a big problem. It's bigger than just us, but we have to make sure that we're not duplicating our efforts. We need to be able to coordinate, and we need to have one body that allows us to coordinate our efforts so that we can be even more effective, so that we can get to the solutions quicker." What we did as a government when we created the Ontario Institute for Cancer Research is allocate, over five years, some $347 million. Many of us know that cancer researchers are always dependent on these funds. They can be on the verge of a breakthrough, and then their funding runs out. So the first thing we did was actually make that commitment.

That bold commitment allowed us to get one of the top researchers in the world Dr. Tom Hudson, who came from Montreal but had made a scientific reputation as, really, the number three guy at the Human Genome Project in Boston. We were very fortunate to have him, and he himself has acted as a magnet to attract other talent. But the most important thing is, as he said, "We've got to deal with this problem—the four things. We have to look at treatment, we have to look at cures, we have to look at detection, and we have to look at prevention. We have to look at all of those things." Based on science—not on political science—he's been able to mobilize this tremendous wealth of top-notch research capacity we have in Ontario towards this common goal in an organized fashion that allows us to be more effective. It was his leadership that allowed Ontario, though the only sub-national government involved, to be the secretariat, the world headquarters of the International Cancer Genome Consortium.

Mr. Craitor, what I would say is that we know there's a genetic component to cancer, and we know about oncogenes. We know about the fact that perhaps there are even cancer stem cells, stem cells that have been somehow corrupted and that is the seed of cancer. When you were dealing with your cancer—you can irradiate it, you can cut it out, you can undergo surgery and chemotherapy, and it always seems to come back and it's because of, they believe, these errant stem cells that create cancer. Some of the groundbreaking work is being done right here in Ontario, so they're coming up with strategies. We have to understand the genetics of this.

Now there is this largest genetic research project in the history of mankind, the Ontario cancer—the human genome consortium of countries from around the world. Each country or sub-national group is taking one tumour and is unlocking the mysteries of the genetics of that tumour. If you have a pancreas tumour—what is the difference between a pancreas cell that has cancer and one that doesn't? If you can unlock what that difference is, then you can target treatment at the genetic level to try to find a cure for that cancer. So there will be 50 tumours.

My understanding is that the quantity of information required is 25,000 times greater than the Human Genome Project, which at the beginning of this century was the greatest challenge of mankind; it required the entire world research community to unlock the human genome. Now, less than a decade later, we're doing a project that's 25,000 times bigger. I'm so proud that the world headquarters for this effort is here in Ontario, at the Ontario Institute for Cancer Research. They are in the process of creating the largest health informatics database in the world. Dr. Lincoln Stein from Stanford has come now to Toronto, to the Ontario Institute for Cancer Research, to lead that effort because it is the biggest project. That's a great example: If we can get our researchers, give them the tools that they need, focus, give them the challenge, act as a catalyst, support them—and I was proud, as a minister, to provide an additional $10 million for them to be able to secure the secretariat. But that

project alone could do for our province what the human genome project did for Boston and Massachusetts. It has that potential.

Will it be successful? I don't know. But is it worth it for us to be part of the cutting edge of the unlocking of that mystery? I believe so, and that's why we made that investment. I hope it gives hope to people, not only in Ontario but around the world, that we are doing our very best to try to conquer disease, particularly cancer.

The Vice-Chair (Mr. Garfield Dunlop): Thanks very much, Minister; that's great. Good answer.

The final rotation: Ms. Scott or Mr. Hillier?

Ms. Laurie Scott: Mr. Hillier.

The Vice-Chair (Mr. Garfield Dunlop): You have 20 minutes.

Mr. Randy Hillier: Thank you very much for being here. This is my first time being at estimates.

Hon. John Wilkinson: Me too—

Mr. Randy Hillier: Quite interesting.

Hon. John Wilkinson: —as a minister.

Mr. Randy Hillier: I want to first congratulate you on having obviously a very lean and efficient ministry. I see that there are only 15 staff here to help answer the questions from three opposition members.

Hon. John Wilkinson: They're very helpful, Mr. Hillier.

Mr. Randy Hillier: I'm sure they are. And in that vein, I've been reading through some of your budget numbers and whatnot. What I would like to know is how many employees your ministry employs directly.

Hon. John Wilkinson: My deputy minister, who's responsible for the administration of my ministry, would be more than happy to answer that question.

Mr. George Ross: We have 137 full-time employees in the Ministry of Research and Innovation.

Mr. Randy Hillier: So 137, and if I'm correct, their wages were near $10 million?

Mr. George Ross: I'll have to check the exact number on salary and wages.

Mr. Randy Hillier: Clearly, one thing that we can see from the Ministry of Research and Innovation is that you've spent a lot of time in research and been very creative in coming with all of these funds: the innovation demonstration fund, the investment accelerator fund, the Ontario research and development challenge fund, the Ontario research commercialization program, and it goes on and on. I was wondering if you could answer how many projects totally you have funded directly from the ministry.

Hon. John Wilkinson: That's a good question, and I was going to say, just for some historical context, that the function that is done by the Ministry of Research and Innovation over the last 20 years has been through various ministries. So the first thing is the creation of the ministry—

Mr. Randy Hillier: No, I'm just looking for how many projects you directly funded last year.

Hon. John Wilkinson: Okay, so last year?

Mr. George Ross: It's a complicated question. It depends on the program you're referring to, but I can—

Mr. Randy Hillier: Do you have an aggregate total of how many projects were invested in, in total?

Mr. George Ross: No, we don't have an aggregate total in the total number of projects that are invested in, but we do have some data by program area if you'd like to go through that.

Mr. Randy Hillier: No, I don't think so. I would like to get that information, though—the total number of projects that have been funded and also the total number of applications for projects, so that we can compare how many are being received and how many are being funded, for those 137 employees.

Mr. George Ross: We can follow up with data. Much of it is available on our website already, so we can certainly aggregate that data and provide some of it—

Mr. Randy Hillier: Could you provide that to us directly?

Mr. George Ross: All of our programs are governed by a review process, depending on what the program is. For example, in our research area, it's a peer-review process, so applications are received and they're reviewed by international panels. Due diligence is done on investment activities.

Mr. Randy Hillier: I have no doubt that due diligence is done. I just want to see what the total numbers are.

Going on to another line of questioning, I was here yesterday listening to your answers and I heard some phraseology and answers which I thought were very interesting: "breakthroughs"—you want to make sure that breakthroughs in technology are commercialized here first, in Ontario; develop our "full potential"; and even today, the role is not to "interfere with business"—a number of very significant and important phrases. As I was thinking about that, I was reflecting on my own riding and how that plays out in concrete terms. So does your ministry coordinate new technology investments with other ministries? Is there any coordination between what's happening with other ministries and new technological advancements and investments?

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Hon. John Wilkinson: That's a good question, Mr. Hillier. I can tell you that when the ministry was created—I'll just give you one example: the innovation demonstration fund, which is quite specific as to what part of the market we're looking for and what stage of company we're looking for. One of the areas of review is—there's an assistant deputy minister review panel, which allows, I believe, seven sister ministries to take a look at that. I'll give you an example. When you deal with the bioeconomy—in other words, how do we reuse renewable carbon and replace fossilized carbon, oil and gas, with renewable carbon which comes from forestry and agriculture, which are important in your riding and in my riding—you actually need to have some coordination with the Ministry of Agriculture, Food and Rural Affairs, the Ministry of Natural Resources and the Ministry of Energy. So when those projects come to us we have a

process which allows affected ministries to actually have input on that and we try to coordinate our efforts.

Mr. Randy Hillier: With the end game of seeing that technology come through, if it's worthwhile.

Hon. John Wilkinson: Yes, that's right, and make sure that we're not duplicating efforts and there are not big gaps that we're missing.

Mr. Randy Hillier: Okay, that's good to know, that there is this coordination going on. That helps me frame up my next question, because I have a number of examples in my riding where industry has been looking to put new investments into technology to help, of course, improve our competitiveness and retain jobs. We all know that jobs in the manufacturing sector are in jeopardy everywhere across this province.

I would like to give an example here. There's one firm in my riding that started a process in 2003 to convert waste to energy for that business. It would have improved them significantly, improved their competitiveness. Without going through all the historical process, over five years of process they've decided to pull out. The cost of the process was in fact greater than the investment that they were intending to put in originally. They've pulled that project off the shelf because of red tape, obstacles and procedural hang-ups through the Ministry of the Environment. Is the Ministry of the Environment one of those coordinating ministries?

Hon. John Wilkinson: Yes, it is, and we've been working very closely with the Ministry of the Environment. I used to be there; I used to be the parliamentary assistant. One the challenges that you have when it comes to innovation, and you deal with government, is the fact that to protect the interests of the taxpayer we have something called the procurement process. When we're going to buy something, let's say soap, and we're going to buy soap for all the hospitals in Ontario or all of the government buildings in Ontario, there's a procurement process to make sure that we get the best soap at the best price for the taxpayers. Well, what if you come up with something that's better than soap? Right now the government doesn't have the capacity to look at that, because we're looking at the procurement process. One of the roles of the ministry is to, within our government, help break down those barriers so that we can look at things that are innovative. For example, there's—

Mr. Randy Hillier: That's interesting—to help break down those barriers—because what I see in this particular case is that you've helped construct the barriers: five years of process at huge and significant costs in a changing goal line because the procedure is always changing. The process was originally expected to take two years, to get all the approvals, and five years later it's still not approved. So it appears that there are more obstacles being constructed and this coordination of ministries is not actually happening, or not being effective, anyway.

Hon. John Wilkinson: I've only been here for five years, but I think we had for many years here, when it comes to regulation, the question that waste should be landfilled rather than incinerated. That was the kind of lay of the land here. I think both municipalities and the provincial government have tried to encourage the use of blue boxes and recycling to divert from landfill.

I think that in the sustainable environment that we're looking at, we have to make sure that if we're recycling, we're also recovering energy, if there's energy that has been put in. The question is, how do we do that without damaging the atmosphere? So I look at a company like Plasco that is using plasma arc technology, which doesn't incinerate or gasify the waste but actually ionizes it down to its base elements.

Mr. Randy Hillier: I heard that whole—

Hon. John Wilkinson: That's a technological innovation. That technological innovation—the rules that were set up did not take into account an invention that was going to happen in the future. Those inventions have happened. What our ministry tries to do—and we work closely with the Ministry of the Environment—is provide our cutting-edge strategic view of how technology is developing in this province and around the world, and to try to—

Mr. Randy Hillier: I'll give you another example. There's another firm in my riding that came up with a new technological process for their industrial application. They're the largest user of water, actually, in that municipality—50 million gallons of water a year—and they had a new technological process that would reduce that down to four million gallons of water—significant savings for the municipality, significant savings for the industry, significant savings also on the waste going out to the lagoons.

We started that process last November to get them some assistance, some participation by the provincial government, and, as of now, they still have not received word. In fact, as they waited for the process, they essentially closed down. They couldn't wait any longer and they're down. I don't know if they're producing anything right at the moment. So here's another case of technology improving our competitiveness and improving our environment—it may not be absolutely perfect, but an improvement, and improvements are always good in my books—but it's held up without government participation or assistance. I think eight months to get word is a little bit long in the tooth.

That was, again, with one of these ministries that you say you coordinate with, OMAFRA. It appears that the nice words about not interfering with business and making sure that we have commercialization are ringing a little bit hollow on those two cases.

Hon. John Wilkinson: Well, Mr. Hillier, just so we're clear: The job of those of us who are elected is, we're stewards of the taxpayers' money, so there are, at times, different interests between business and government, whose function it is to protect the public. So it is important, for example, that in haste, we would not embrace the need for both transparency and accountability, which I'm sure you and I would both agree—

Mr. Randy Hillier: Absolutely.

Hon. John Wilkinson: But I can tell you, for example, that our ministry—and I can't comment for other ministers. I can tell you that we have a good working relationship, as I said, with the other ministries; MOE and OMAFRA are two of them that we deal with quite frequently. For example, when we launched the Next Generation of Jobs Fund—some $1.15 billion—one of the things that we learned through the process of the Ontario Research and Innovation Council, consultations that I led and from international experts, is the need for us to get up to the speed of business.

So we did something that was very innovative. We can't find another government that said that, when you submit a completed application to our ministry, and also to the Ministry of Economic Development, the government will make up its mind in 45 days guaranteed. That is very innovative. The interesting thing is, where the innovation is—and we worked very hard with my deputy on this—is that a lot of times, that frustration was due to the fact that the government hadn't communicated what was a completed application, so that when a company would apply to a program, we would receive that. Because we were doing due diligence, the government was loath to actually talk to the proponent, because we we're actually, "Give us some time here. We have to take a look at this objectively to determine whether it's in the best interests of the taxpayers to proceed with this application."

We've put a lot of effort in the front end to actually deal with proponents and make sure the application is actually complete and that all the answers have been provided. I've told people that if I have an application and the due diligence is done and everything is complete, it doesn't take me a long time to make up my mind as the minister. It doesn't take a long time for everybody else in the system who's doing the due diligence. It is a novel concept in government, Mr. Hillier, but I think it's the right step that we're trying to make about how to speed up that process.

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Mr. Randy Hillier: Oh, I agree, and I commend you for actually setting a time frame for yourselves.

Hon. John Wilkinson: Spread that through the government.

Mr. Randy Hillier: Unfortunately, we haven't seen the fruition or the benefits of it yet in many of these cases that I've seen.

Another one: Of course, when we're talking about investments—and we're probably pretty clear these days—certainty and stability are an important component in business investment. As you were saying earlier, you have seven deputies in that coordinating body?

Hon. John Wilkinson: No, you asked the question about whether my ministry acted in isolation as a silo or whether we reached out. The mechanism that we have is that obviously we're in constant contact; I see my fellow ministers all the time. But we actually have a review committee that's made up of assistant deputy ministers, if I'm correct. To be absolutely accurate, I'll turn that over to my deputy minister, who does understand this much better than I. Deputy?

The Vice-Chair (Mr. Garfield Dunlop): You have about three minutes left to finish up this round of 20 minutes.

Mr. George Ross: We have very, very close working relationships with a number of other ministries, because the innovation agenda that we're responsible for implementing obviously is integral to the mandate of many ministries across the government. Depending on the program that we're delivering, the mechanism for interaction with those other ministries is established. In the case that the minister was referring to, we use an interministry panel to review applications and the due diligence that is done by a third party before those recommendations come to the minister for final decision. That's a way of getting input and coordination across ministries.

Mr. Randy Hillier: Okay. That clears things up. Now, looking at that clarification and looking at the tangible impacts in my riding, it's pretty clear to me that there ought to be a coordinating system maybe within cabinet so cabinet can see where innovation is being prevented by other people in those silos, such as a couple of the examples that I've just given.

Hon. John Wilkinson: Well, Mr. Hillier, when the Premier created the Ministry of Research and Innovation, it was the first time in the history of our country that there was a Minister of Research and Innovation. I'm proud to have taken over the mantle from the Premier, but I can assure you that in the cabinet of the Ontario government, there is a voice—mine—which is charged with trying as best we can to push forward on this innovation agenda, which requires the ability to adapt, to have the change, to reduce barriers, to look at the opportunity that the future presents to us and, if necessary, to adapt to that so that we can maximize it for the benefit of the taxpayers here in Ontario.

Mr. Randy Hillier: Well, I'll just finish off there—

The Vice-Chair (Mr. Garfield Dunlop): You've just got a minute left to clean this up.

Hon. John Wilkinson: Sure.

Mr. Randy Hillier: Just in those in those couple of examples—I'll have a few more in the next round—there are a couple of hundred employees who have lost their jobs from the process that we have right now: preventing innovation from being seen on the ground, being implemented, seeing it commercialized in Ontario first.

I'll leave the rest for later. Thank you.

The Vice-Chair (Mr. Garfield Dunlop): You won't have another round, by the way, but you can answer this question.

Mr. Randy Hillier: Oh, do we not?

The Vice-Chair (Mr. Garfield Dunlop): This is going to complete research and innovation today, so do you have anything further to add to that, Minister?

Hon. John Wilkinson: Well, no—just that I would offer to you, Mr. Hillier, and I've offered to all the members, that if you have specific examples within your

own riding, I'm more than happy to work with you. It's important for our ministry always to be a force of innovation.

One of the things that innovation requires is collaboration. It is something that we in Ontario are known around the world for, particularly in our research community and even within our business community. Under the Next Generation of Jobs Fund, we have our strategic opportunities fund. It's all about industrial consortia, in other words companies that day in and day out compete against each other actually coming together to open up a new industry.

Mr. Randy Hillier: I'll look forward to those conversations when I bring them over to you.

Hon. John Wilkinson: Sure.

The Vice-Chair (Mr. Garfield Dunlop): Okay. Thank you very much, Minister. We'll now go to the third party for their next 20-minute round.

Mr. Michael Prue: I've had the opportunity over the last couple of days—some 80 minutes of questions. Quite frankly, I've been pretty satisfied with the answers, which is kind of rare for me, sitting around a table like this. I know that we're trying to finish, and I've talked with my good friend Mr. Rinaldi about his desire to be back in his riding, and I think I'm just going to let it go.

Hon. John Wilkinson: I appreciate those comments, Mr. Prue. Just make sure the record reflects that.

The Vice-Chair (Mr. Garfield Dunlop): You're done asking questions?

Mr. Michael Prue: I'm done asking.

The Vice-Chair (Mr. Garfield Dunlop): Okay. The government members, then?

Mr. Lou Rinaldi: Thank you. I too have been here for the duration, and I know the members of government have asked the questions that I think we needed to ask. But at this time, I just wanted to take whatever time I have remaining and whatever the minister would like to take to address any comments. I just want to take the opportunity to thank both Chairs that we had, staff, and government staff who were involved in this. Of course, Minister, to you and your staff, thanks very much. I think you were very well prepared. I know that although this was a new committee for me this session of government, it's certainly been a learning experience. So I just wanted to say thank you and to thank everybody involved.

At this time, though, Minister, if you wanted any final comments to wrap up, I would certainly leave it up to you to do that. You've got a whole 20 minutes, if you wish to take it—

Hon. John Wilkinson: I won't take 20.

Mr. Lou Rinaldi: —but if not, we do have a drive home.

Hon. John Wilkinson: Thanks, Mr. Rinaldi. Yes, I look at the clock; to me, it looks like it's very close to 6 o'clock, so I will be brief.

First of all, I do want to thank all members for the questions and your attention. It's the first time that I've actually been called to estimates as a minister, and I have a greater understanding of the tremendous amount of work that is done by the good people at our ministry who have to prepare for this, and I want to thank them. They've done a magnificent job of supporting me, and I appreciate that.

I would like to close, though—because I think one of the questions that may have been left unanswered is: "Okay, you're doing this, and we all agree it's important to do, and it really is something that we're going to have to get very good at in the 21st century. But what are the results that you're getting?" I think those are fair questions for the ministry. We're in a new area where we're trying to find those metrics, to be able to say what success is.

But I want to let you know, just to give you some highlights: We have 10 projects in the innovation demonstration fund, an investment of some $30 million; we have 45 Ontario research fund research excellence projects—$230 million; 727 Ontario research fund research infrastructure projects—$271 million; 21 translational research projects through the Ontario Institute for Cancer Research—nearly $8 million; 451 projects through the Ontario Centres of Excellence, where we've invested some $170 million; and 38 market-driven R&D projects through the Health Technology Exchange, a program we have that we didn't discuss.

When it comes to public and private sector partners, how are we doing there? We have 280 industrial and institutional partners through the Ontario research fund excellence program, which matched the $230 million; 200 industrial and institutional partners through that Ontario research fund research infrastructure program—a match of $271 million; 637 companies through the Ontario Centres of Excellence—$170 million; and 28 companies through the Health Technology Exchange.

What is the amount of money that we've leveraged? There's $460 million that's been leveraged out of our investment of $230 million in the research excellence component of the Ontario research fund, and when we look at the research infrastructure, it has leveraged $400 million beyond the investment of our ministry. Of the $16 million that has been invested by the Ontario Centres of Excellence, that has leveraged some $33 million.

Another question would be: What jobs have been created from this? I can tell you that the Ontario research fund and research infrastructure have resulted in 2,300 highly qualified personnel, trained and recruited by the Ontario research fund. I can assure you that the economic multiplier effect of those jobs—that those jobs, those researchers are paid very well. They are some of the brightest people in our province, and they are doing the work that we need them to do to find a cure for cancer, to live sustainably within our environment and to expand the digital universe.

There have been 246 public and private jobs through the research infrastructure; some 330 high-paying research and construction jobs through the biopharmaceutical investment fund, from an investment of some $13.9 million of the $150 million that's been allocated to my ministry.

When it comes to intellectual property, all of this requires the fact that you have a patented idea that is yours, because that is the heart of commercialization. We have some 94 patents and licensing agreements through research infrastructure; eight spin-off companies through the Ontario research excellence fund; 13 granted patents and 23 patent applications through the Ontario Institute for Cancer Research; 10 invention disclosures from OICR; four spin-off companies from OICR; one licence through OICR; and some 24 patents granted and 110 patent applications at OCE, and 25 licences.

When it comes to awards in education, something else we didn't talk about: the outreach that all of our programs have into our high schools. We've had 1,000 highly qualified personnel reaching out to a projected 82,500 young people through our science-based activities, through our early researcher awards; 96 fellows have received post-doctoral fellowships; and 14,000 youth, connecting over 350 science events, as part of seven projects that help connect science and youth.

With that on the record, Mr. Chairman, I want to thank you for your indulgence and the committee for your attention and your questions.

The Vice-Chair (Mr. Garfield Dunlop): Thank you very much, Minister.

Before we adjourn, I want to let you know that I'm going to be putting the question. Shall vote 4301 carry? Carried.

Shall the estimates of the Ministry of Research and Innovation carry? Carried.

Shall I report the estimates of the Ministry of Research and Innovation to the House? Carried.

With that, thank you very much, Minister, and all the staff of the Ministry of Research and Innovation. This meeting's adjourned.

The committee adjourned at 1720.

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