

On-Site

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BILLION DOLLAR BABIES

INVENTORY OF SUPER-MEGAPROJECTS
REACHES NEW HEIGHTS





Billion-dollar babies

Inventory of super-megaprojects reaches new heights

BY JIM BARNES

Ambassador Bridge,
Windsor/Detroit.

To paraphrase the old one-liner, spend a billion dollars here and a billion dollars there, and pretty soon you're talking about real money.

Canadian contractors can be excused if they are feeling a little sticker shock. Ten years ago, to see a billion-dollar project coming down the pipeline was extraordinary. Just a decade later, these billion-dollar babies seem to be commonplace – happening across the country and in many sectors.

Even a large contractor can get a feeling of vertigo when bidding on a billion-dollar project for the first time. We went to experts in the industry to get some idea of how the environment has changed and how Canadian construction contractors are adapting.

FUNDING

Billion-dollar projects are possible because massive funding is available in the market-

place to spend on them. Federal, provincial and municipal governments have joined forces to address Canada's notorious infrastructure deficit, and jurisdictions across the country are throwing considerable weight behind infrastructure investment. Large energy organizations, too, are putting shovels in the ground on projects that are of historical significance.

It has to start with the municipalities, notes Raymond Louie of Vancouver B.C., president of the Federation of Canadian Municipalities in Ottawa.

"Canada's municipalities own approximately 60 per cent of public infrastructure in Canada and are responsible for planning projects of all sizes, including some of the country's largest infrastructure projects and including public transit expansions," says Louie.

"These large projects and require a funding partnership between all orders of government. When it comes to managing and

delivering these projects, municipalities are best-placed to determine the right level of private-sector involvement," he adds.

"Regardless of the private-sector role, a full one-third contribution from the federal government is critical and FCM was very pleased to see this affirmed in the new Public Transit Fund."

Permanent, dedicated funding allows municipalities to consider these investments. As cities become involved in these projects in a consistent way, they can build up local expertise to manage it.

GROWTH OF P3S AND BUNDLING

Another factor making the billion-dollar babies a reality is growing private-sector involvement, often in the form of alternative financing. While Public-Private Partnerships may be more expensive in the long run if you set no value on allocating risk to the builder, they often ease the short-term



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financial burden on local government. Both federal and provincial governments are encouraging local government to consider the P3 approach.

They are singing to the choir. Many local governments embrace the concept and bundle projects together to take advantage of P3 benefits. Saskatchewan recently awarded a large contract for nine schools to the JUMP consortium. While the approach eases the management, financial and risk burden on government, it cuts the list of qualified bidders down to a very few.

The risks avoided through alternative financing are real. In Toronto, some city-owned transit projects have gone badly awry, leading Mayor John Tory to say that he was “furious” and that “We have lurched from one fiasco to another, costing taxpayers ... tens of millions of dollars, and just as important, delaying the day we get desperately needed transit service.” P3 proponents emphasize that if alternative financing had been used, that risk would have been the contractor’s.

There is no question, says David Bowcott, senior vice-president and national director of Large/Strategic Accounts at AON Reed Stenhouse Inc., Toronto, that when a consortium assumes the risk, they manage projects

differently. “To me, that’s one of the magical aspects about a P3. Sure, they cost more, but they’re performing to a higher level of certainty than any other asset.”

Marni Dicker, executive vice president, general counsel and corporate secretary of Infrastructure Ontario (IO), Toronto, agrees on the benefits regarding risk. “Our model makes sense. We are on budget, we are on schedule and in the unlikely event that we are not, the public purse does not absorb the cost.”

INFRASTRUCTURE AGENCIES

Provincial infrastructure agencies such as Partnerships BC and IO have a role to play in facilitating these projects. “Some of these agencies have a proven ability to manage larger projects – P3s or not,” notes Canadian Construction Association President Michael Atkinson, Ottawa.

Business is good. “We are at a monumental time in Ontario, with historic infrastructure investment,” says Dicker. “This past year has been the busiest one in our history. We closed 14 massive projects – that’s more than a project a month... We have already completed 48 projects worth more than \$13.5 billion dollars.”

“We been an advisor on the Ottawa LRT

and the Waterloo LRT. Many other municipalities are now talking to us for a variety of roles around the province,” says Dicker. “We are doing due diligence with the city (of Toronto) right now on two very large projects, the Scarborough subway and the Gardiner Expressway,” she says. More than 40 other jurisdictions have studied IO’s methods, including international infrastructure organizations.

One recent initiative is IO’s *Spring 2015 Market Update*, a list of major projects the organization has on its plate. It is intended to level the playing field for potential bidders with transparency on IO’s requirements.

The breakdown is revealing. The current list of 23 projects has two estimated at over a billion dollars in value – the Finch LRT and the Hurontario LRT. Two more projects are listed between \$500 million and a billion; the Mackenzie Vaughan Hospital project and the Toronto Regional Courthouse.

CO-VENTURES AND PARTNERSHIPS

There is strength in numbers. When faced with a risk that you can’t or don’t want to handle, partnering or joint venturing makes sense. “We’re seeing a lot of joint or co-ventures occurring between long-standing Canadian-based firms,” notes Atkinson.

Risk isn’t the only factor: sometimes it’s a capacity issue. Besides partnering, some firms have shown an interest in mergers and acquisitions to beef up their resources. Some acquisitions today seem to be more about acquiring staff than the client list, notes Atkinson.

It has to be a concern as project size ramps up. “If your market is primarily the public sector, and you are seeing these projects getting larger, obviously you could have capacity problems,” says Atkinson.

“The public sector faces the same challenges that the construction industry itself faces, in terms of demographics and experienced people,” he adds. That could be a factor in the move toward bundling.

BONDING, SURETY, LEGAL, PREQUALS

Resources aren’t the only constraint in approaching these jobs. Surety and bonding might well be factors, too.

If internal growth or acquisitions seem unlikely, then joint venturing and partner-

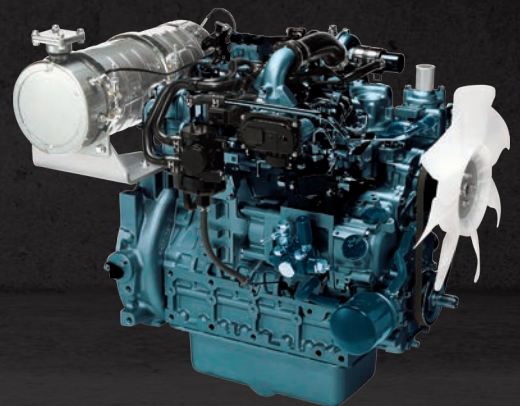


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ships may be the only viable alternative.

"In the Canadian marketplace, we usually see that jobs in excess of \$300 or \$400 million go to joint venture," says Bowcott. "That's partly because either their surety partners or their debt that's putting money into the deal wants to see the risk spread out over more than one balance sheet."

"A lot of owners are migrating toward a model where they're trying to RFQ, which hopefully separates those who understand the risk they're taking on from those that don't," says Bowcott.

You have to pay attention to the prequalification process. "In the old days, there was a handful of Canadian-based firms that could bid on these projects. Now, the Europeans are here. There's more competition; today, it's no longer a slam-dunk," says Atkinson.

Be prepared for a more complex legal environment. "The entire project is more complex," says Dicker, "Therefore, the legal documentation, the project agreement, and all the corresponding schedules are much more complex."

After a decade of experience, Dicker notes that IO's documents are largely templated.

"(The major law firms) have gotten used to our program, and in fact all of our deals follow the prior deals in the same asset class," says Dicker. "We're doing that very intentionally... We're doing anything we can to make it easier for people to bid our projects, to gain a larger amount of interest from the market."

Expect an ongoing stream of billion dollar projects over the years to come.

"As long as the economy stays buoyant, the projects are going to continue to get larger," says Bowcott.

Ontario alone is committed to investing more than \$130 billion in infrastructure over the next 10 years. "There's 10 years worth of transit, transportation, and other infrastructure being built," says Dicker. "It's not going to slow down. It's going to be a new asset class that we will be talking about in 10 years."

Jim Barnes is On-Sites contributing editor.



LNG

Billion-dollar projects related to the energy industry have become commonplace, and two of the biggest are LNG terminals planned for B.C.

Petronas's \$11-billion Pacific Northwest project is a proposed natural gas liquefaction and export facility on Lelu Island. The facility would process and export natural gas produced by Progress Energy Canada Ltd. TransCanada Pipeline Ltd. will design, construct and operate a natural gas pipeline that will carry gas to the facility.

The project has received a conditional financial investment decision from the Malaysian energy firm's board. Following selection of an engineering, procurement and construction contractor, the company has announced that it will be on the lookout for a variety of contractors, including: civil and earthworks; mechanical; electrical; marine; pre-engineered building design; fabrication; and concrete foundation and wall constructors, among other specialties.

Another super megaproject is the LNG Canada project, a partnership of Shell, KOGAS, Mitsubishi and PetroChina. It has an estimated value of more than \$25 billion. Being considered for the site of a former methanol plant in Kitimat, B.C., it has not yet reached a final investment decision. The plant will process, store and transport LNG.

LNG Canada must first ensure the project is economically viable and meet several significant milestones related to gas supply,

engineering and cost estimates, supply of labour and regulatory approval. CFSW LNG Constructors, a partnership of Chiyoda, Foster Wheeler, SAIPEM and WorleyParsons, has been named as the main contractor for construction. Phase 1 construction could take five to six years.

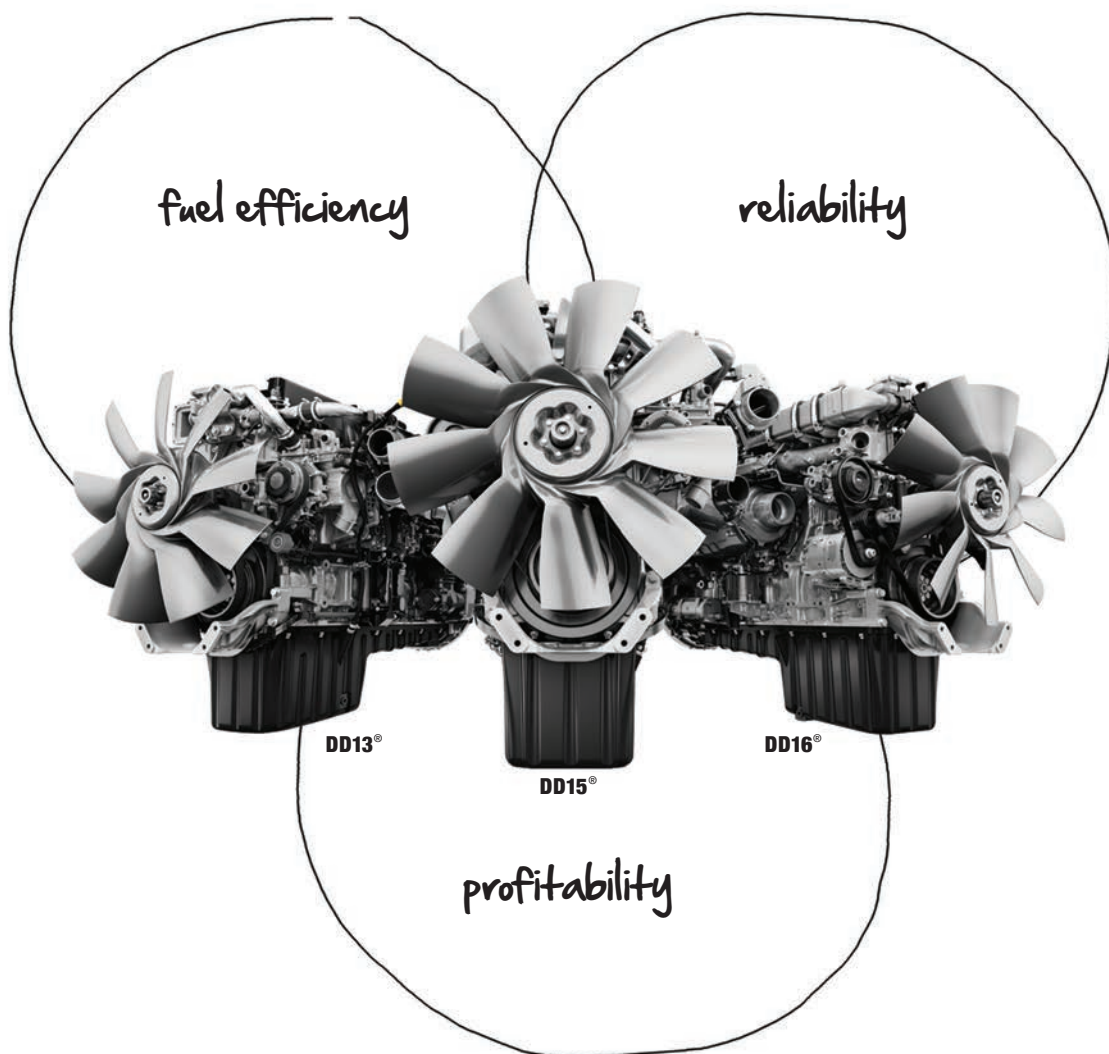
HYDRO

Electrical generating and transmission megaprojects seem to be popping up like weeds across the country as consumption grows and existing electrical infrastructure ages.

The biggest hydro project on the books is B.C. Hydro's \$8.3 billion Site C Clean Energy Project. The project involves a third dam, reservoir and hydroelectric generating station on the Peace River in northeast B.C. Part of the project includes the realignment of six sections of Highway 29 over a distance of 30 km.

Approved by the provincial government at the end of last year, construction is expected to begin in the summer of 2015 with completion in 2024. The project is currently the subject of protests by the B.C. Government and Service Employees' Union, First Nations and environmental advocates.

Site C is not the only Big Hydro project on the books. In Newfoundland, Nalcor Energy is behind the Muskrat Falls development on the lower Churchill River in Labrador. The project includes an 824-MW dam and more than 1,500 km. of transmission facilities. Significant procurement activity



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for the project is already underway. The project is expected to generate more than \$1.9 billion in income to businesses in Newfoundland and Labrador, \$2.2 billion in Atlantic Canada and \$4.7 billion across Canada, according to Nalcorp Energy.

Quebec Hydro's Romaine Complex on the Romaine River has been estimated at \$6.5 billion. It will ultimately consist of four generating stations, three of which will be operational by 2017.

The Keeyask Hydropower Limited Partnership is composed of Manitoba Hydro and four First Nations. The Keeyask Project includes infrastructure, generating and transmission components. The first generator unit in-service date is targeted for 2019, with all units being commissioned by 2020 at a total cost of \$6.5 billion.

Ontario Power Generation's Lower Mattagami Hydroelectric Complex, \$2.6 billion, involves new generating capacity and upgrading of existing plants on the Mattagami River. The project is in the approvals phase, and it will take an estimated minimum of four years to complete these projects.

ROADS AND BRIDGES

Roads and bridges are the poster children for infrastructure renewal, and two bridge megaprojects are in the offing.

The New Champlain Bridge Corridor project is a \$2.15-billion P3 deal signed with consortium Signature on the Saint-Laurent Group (SNC-Lavalin, Flatiron and Dragados Canada). SSL will operate and maintain the bridge for the duration of the concession period, until October 2049.

The 3.4-km bridge will replace the existing Champlain Bridge and includes two vehicle corridors and a transit corridor. It will also have a multi-use path for pedestrians and cyclists.

In addition, the federal portion of Autoroute 15 is to be reconstructed and widened. Completion is expected to be completed by the end of 2018, with the balance of the project scheduled for completion in 2019.

Another iconic crossing is at Windsor/Detroit. The Windsor-Detroit Bridge Authority (a not-for-profit Crown corporation) has launched the first phase of the procurement process to build the \$2.1 billion Gordie Howe International Bridge project. The WDBA will manage the procurement process for the design, construction, operation and maintenance through a public-private partnership (P3) and will be responsible for project oversight as well as setting and collecting tolls. The overall procurement process is anticipated to be up to 18 months in duration.

The roster of highway megaprojects keeps lengthening, too. The \$5-billion Southwest Calgary Ring Road, for example, is planned to consist of 31 km. of six- and eight-lane road, 46 bridges, a rail underpass and 14 interchanges. It is planned as a P3. Following the completion of land-transfer agreements, Alberta's provincial government recently pledged to complete construction within seven years.

Another massive megaproject is the Turcot Interchange in Montreal: the provincial government recently signed a \$1.54-billion contract with the KPH-Turcot consortium (Kiewit Canada, Parsons Canada, Holcim Canada and WSP Canada Inc.) The project is expected to take five years.

In B.C., a bridge replacing the George Massey Tunnel is under study at a cost estimated at \$3 billion. Construction could start in 2017.

BUILDING

While buildings seldom reach the high valuations of other infrastructure in Canada, some are noteworthy in terms of their price tags.

While it is now substantially complete, Halton Healthcare's Oakville Hospital was a marquee project, with a \$2.27 billion price tag. The 148,645 sq m. hospital will have a capacity of up to 457 inpatient beds on opening day in December.

In Montreal, the \$2 billion Centre hospitalier de l'université de Montréal (CHUM) hospital development is under construction, with completion of the 268,000 sq. m. hospital set for 2016 and the administration building complete in 2019. The hospital is aiming at LEED Silver and will offer 772 beds and 39 operating rooms.

Any list of Canada's billion-dollar babies is something of a moving target. In many cases, the final costs are not known and the current price tags are only estimates. It is revealing in itself that we have to be selective in an article listing Canada's billion-dollar construction megaprojects these days. It has become clear that a project has to be worth multiple billions before it makes the megaproject "A" list, and the era of the gigaproject (defined as projects worth more than \$10 billion) is dawning.

TRANSIT

A federal Public Transit Fund is planned for 2017 to grease the wheels of billion-dollar transit projects. There should be no shortage of applicants.

Toronto's Metrolinx agency is behind several transit megaprojects, the largest being the \$5.3 billion Eglinton Crosstown LRT. The 19-km. project includes 25 stations and stops, connections to three subway stations and several GO Transit lines and a 10-km. underground portion.

The project is a 30-year DBFMO P3, awarded to Crosslinx Transit Solutions (EllisDon, ACS Infrastructure Canada, Aecon, and SNC-Lavalin) in June. Construction is underway, with completion set for 2020.

Other big jobs on Metrolinx's plate include the Scarborough Subway Extension (\$3.3 billion) and the Spadina Subway Extension (\$2.6 billion), along with several



smaller megaprojects.

The federal government has committed \$1 billion to the proposed \$3 billion second phase of Ottawa's transit expansion plan. At present, the provincial government has not yet committed to supporting the plan. With completion tentatively scheduled for 2023, Stage 2 will add 19 new stations and 30 km. of rail to Ottawa's O-Train system.

In Alberta, Calgary's Green Line will get 27 new stations and an additional 40 km of track, nearly doubling the size of the system, at an estimated cost of \$4.6-billion. Construction should start in 2017.