

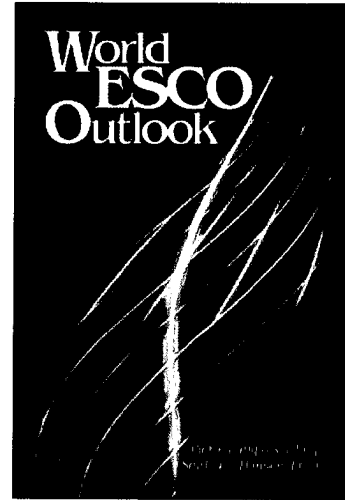
World ESCO Outlook

Pierre Langlois and Shirley J. Hansen

In any rapidly evolving industry, the need to stay current is crucial. The energy service company (ESCO) industry is a moving target. As country after country around the world embraces the idea of self-funding energy efficiency, an energy performance contracting (EPC) model emerges and then changes to meet local needs. An explosion of new variations are out there. World ESCO Outlook captures this rapidly changing landscape, and offers valuable insights into this fascinating industry.

This unusual book brings together an update on Shirley Hansen's impressive past work on performance contracting and couples it with the internationally recognized work of Pierre Langlois. Through their unique network, they have brought together the best of in-country experts from nearly 60 countries to share their insights as to what makes EPC successful in their specific environments. In telling their story, they also reveal some exciting new overseas market opportunities and provide the most complete insight available into the ESCO world.

Countries covered: Argentina - Armenia - Australia - Austria - Belgium - Brazil - Bulgaria - Canada - Chile - China - Colombia - Croatia - Czech Republic - Denmark - Finland - France - Germany - Hungary - India - Indonesia - Ireland - Israel - Italy - Jamaica - Japan - Jordan - Kenya - Lebanon - Malaysia - Mexico - Morocco - Netherlands - New Zealand - Norway - Philippines - Poland - Portugal - Romania - Russia - Slovakia - Slovenia - South Africa - South Korea - Spain - Sweden - Switzerland - Thailand - Tunisia - Turkey - Ukraine - United Kingdom - Vietnam - Hong Kong.



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ACTIVITIES

The rapid growth of EPC and ESCOs in Canada was unique in that it was a government-inspired solution, originating from the first oil price shock of the early 1970s and focused on inefficient use of energy as well as on cost savings expectations.

The first ESCO in Canada, and one of the first in the world, was created in the province of Quebec by Hydro-Québec and a local engineering firm. Econoler Inc. was founded in 1981 and developed a new concept for that time based on a unique shared savings approach with a first-out option. The first-out option consists of an open book approach with contract termination upon complete payment of all project costs, even if this occurs prior to reaching the maximum contractual agreement. That approach was very attractive for the market back then and all the more relevant at a time when the interest rates in Canada for the implementation of such projects were in the vicinity of 20 percent. This in turn significantly hampered investments, including those in the energy sector. Between 1981 and 1989, over 1,000 projects were implemented in all kinds of commercial, institutional and industrial establishments in the province of Quebec.

In the mid-1980s, many other companies began to offer a broad range of energy performance contracts as well as other forms of performance-based solutions. In addition to financing energy efficiency retrofits, they are now also being used to finance renewable energy installations as well as non-energy-related deferred maintenance projects.

Two major programs were launched in the 1990s to help the ESCO concept grow in the country:

1. The Federal Buildings Initiative (FBI), an energy sector initiative of the federal department of Natural Resources Canada. The FBI was officially launched in 1991, and two years later, the first project using EPC was implemented. The FBI provides fed-

eral organizations with the tools and services needed to make informed decisions about reducing energy, water consumption and greenhouse gas (GHG) emissions in their facilities. The FBI addresses three common barriers to improving energy efficiency: (i) inadequate capital budgets for energy efficiency projects; (ii) need for reliable information on current energy technologies and practices; and (iii) lack of required skills to manage retrofits. The FBI provides publications, case studies, sample tender documents and model contracts in addition to information on energy efficiency-related environmental, health and safety issues, employee awareness products and comprehensive training programs. In addition, the FBI maintains a qualified bidders list of ESCOs on its website. Qualified bidders are evaluated based on their financial capabilities and technical expertise to undertake major energy efficiency retrofits.

2. The Better Buildings Partnership (BBP) program began in June 1996 and focuses on curbing CO₂ emissions in Toronto through energy management firms' activities. BBP is a PPP between Enbridge Gas Distribution Inc., the Toronto Atmospheric Fund, Toronto Hydro and Ontario Hydro Energy, Inc. BBP comprises several programs including a residential energy awareness program, an office building and commercial building program as well as a loan recourse fund.

Unfortunately, Canadian ESCO activities suffer from the lack of continuous monitoring and reporting. The only real information available is based on data gathering from the FBI as noted above. It is expected that the ESCO market will grow significantly in Canada in the next five years. Many provinces are promoting the EPC approach for the implementation of energy efficiency projects in the public sector. The FBI program is also quite active and continues to promote its share of projects nationwide for federal buildings. The private sector is timidly starting to look at the ESCO concept as a way to eliminate the different barriers to the implementation of energy efficiency projects. It is likely that this market will grow at a steady pace over the next five years in Canada as there is still an important market to be developed.

CONTRACTS

In Canada, the guaranteed savings model represents an important part of current contracts being implemented. Canadian ESCOs are also using, to a lesser extent, the shared savings and the "chauffage" concepts.

In the case of the FBI program at the federal government level, efforts were made to overcome budget constraints in the government sector by promoting the use of private, third-party financing by ESCOs.

LEGAL FRAMEWORK

Generally, there are no legal barriers, which prevent the use of EPC in Canada. For federal institutions, the Federal Contracting Policy was amended to allow federal departments to enter into a service contract and acquire energy services with an energy management firm with a view to implementing energy efficiency improvements[1].

In some cases, there may be challenges on how EPC could be used more broadly and achieve its full potential in the public sector. Different organizations, including the newly formed Energy Services Association of Canada (ESAC) have been looking into the matter in the last few months and it is expected that they will make some recommendations about how to improve on the process at both the federal and provincial levels.

MARKETS

The performance-based solutions (PBS) industry in Canada is a CAD 450 million/year business (USD 450 million/year business), generating annual energy savings in Canadian dollars (CAD) of about CAD 45 million/year (USD 45 million/year). It is estimated that this industry is currently responsible for over 4,000 direct jobs and 5,000 indirect jobs. Up to 80 percent of the labor associated with these projects is local labor. Although there have been a few projects for commercial buildings and a small number of industrial projects, the vast majority of these projects are for public sector buildings. These types

of buildings are commonly referred to as municipalities, universities, schools and hospitals (MUSH) and include all government offices as well as education and health care facilities.

In Canada, the early days of the industry took a different turn from that in the United States. In a typically Canadian way, the public sector got involved with the industry and this has continued to such an extent that a private-public "partnership" has developed.

On a more qualitative basis, the ESCO industry in Canada has been very concentrated in the public sector as well as in the commercial building sector. All levels of government are implementing energy efficiency improvements in their buildings using ESCOs.

Still, barriers exist in the marketplace. One is the internal competition of public and private sector organizations, which charge fees to manage buildings without operating under an EPC concept. Those fees are based on a percentage of the operational expenses. Therefore, an energy efficiency project is a source of fee reduction for them. In the public sector, some organizations own an important number of facilities and can obtain funding from existing capital budgets for building renovation without calling for the use of the ESCO concept. Even though the ESCO concept has been used in Canada for more than 30 years, there is still an important lack of awareness and knowledge about the concept and how to use it.

FACILITATORS

In 1987, the Canadian Association of Energy Service Companies (CAESCO) was established with the support of Ontario Hydro and the federal and Ontario provincial governments. CAESCO encouraged the orderly growth of the industry through accreditation, support and advice to both EPC contractors and customers. Membership in 1997 was over 50 and included, in addition to ESCOs, equipment suppliers, utilities, governments, lawyers and consultants. There are presently 13 accredited ESCOs in Canada. Unfortunately, CAESCO closed in 2001, for lack of support and interest on the part of the different stakeholders.

After nine years without an industry association, ESAC was formed in 2010. The founding members of the association are Ainsworth, Ameresco, Direct Energy, Honeywell, Johnson Controls, MCW

Custom Energy Solutions, Siemens and Trane. It is estimated that the eight founding members of ESAC represented about 90 percent of the CAD 450 million (USD 450 million) performance-based solutions business in Canada in 2009. The association's vision is that performance-based solutions become the premier choice for energy and infrastructure renewal initiatives, resulting in fiscally and environmentally responsible outcomes. Its mission is to actively promote government policies and regulatory support for greater use of guaranteed performance-based solutions to implement energy efficiency, renewable energy and infrastructure renewal initiatives.

GOVERNMENT ACTIONS

At the present time, there are a range of federal, provincial and municipal initiatives across Canada that relate to performance-based solutions including the following:

- **Federal Government**—The FBI has attracted CAD 320 million (USD 320 million) in private sector investments to date and generated over CAD 43 million (USD 43 million) in annual energy savings as well as in annual GHG emissions reductions (285 Kt). This was achieved through 87 projects in over 7,000 buildings or about one-third of federal buildings retrofitted between 1993 and 2011 under this program. In 2010, as part of its Federal Sustainable Development Strategy, the federal government set a target of reducing levels of GHG emissions by 17 percent below 2005 levels by 2020. This work was undertaken by the Office of Greening Government Operations and is expected to result in a major increase in the use of innovative financing and energy management services using energy performance contracts.
- **British Columbia**—BC's Energy Plan has set aggressive targets for GHG emissions reductions. As part of this plan, the government has estimated a requirement for about CAD 1.5 billion in energy efficiency upgrades to public buildings.
- **Nova Scotia**—The government has made a commitment to retrofit all schools in the province at "no cost" which is understood

to imply the use of PBS. It has also selected ESCOs to undertake PBS for public buildings in four regions in the province.

- **Ontario**—Regulations under the new Green Energy Act require all public agencies to reduce energy consumption by 20 percent. The Ontario Power Authority has issued an overall requirement for utilities to reduce their electricity production and implement demand management programs as part of a mandate to achieve one of the most aggressive energy conservation targets in North America. To that effect, the Ontario Power Authority has launched a series of programs for the commercial/institutional sector. The Green Energy Act also included North America's first Feed-In-Tariff ("FIT") program that provides guaranteed premium prices for renewable energy.

In Toronto, the city's BBP has completed more than 2,000 projects since its inception in 1996, improving over 20 million m² of space. Over CAD 850 million (USD 850 million) has been invested with savings estimated to be over CAD 60 million/year (USD 60 million/year). Many of the larger projects used an energy performance contract.

- **Quebec**—The market in the province is basically focused on the public sector, and essentially in the health and education sector. Both ministries are favoring the use of EPC to attain the provincial reduction objectives of energy consumption set by the Ministry of Natural Resources. The program is implemented through an energy savings approach where the government uses its own financing capacities to finance projects that have to be paid back over a seven-year period. The ESCO has to guarantee the performance of the project during that period.
- **Saskatchewan**—SaskPower, the provincially owned integrated electricity utility, has been offering its own EPC services in the province for the last ten years through a joint venture with a national ESCO.

Information on specific projects in the different provinces can be found at the ESAC website at www.eenrgyservicesassociation.ca.