

**ROLE OF GUARANTEED ENERGY SERVICE PERFORMANCE CONTRACTS  
(ESPC'S) IN ACHIEVING CANADIAN CARBON REDUCTION TARGETS**

**SUBMISSION TO "LETS TALK CLIMATE ACTION"**

**BY**

**ENERGY SERVICES ASSOCIATION OF CANADA**



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#### 1. SUMMARY OF POLICY RECOMMENDATIONS

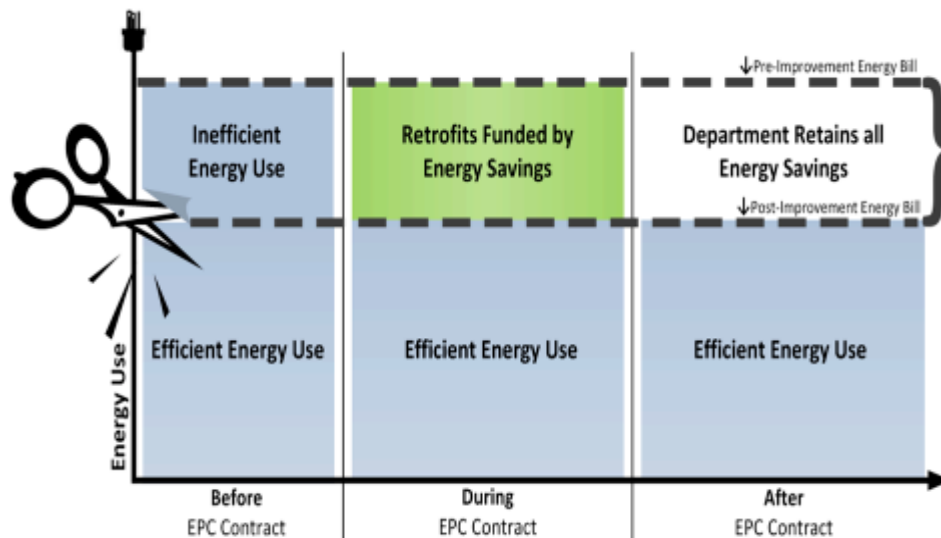
1. ***Improve and Expand Use of ESPCs by Federal Government*** – In order to meet the government’s goal of being carbon neutral, major energy efficiency upgrades are required for all its existing buildings. There are important opportunities to work with the Performance Contracting Industry to improve the current contractual agreements and to expand their use through NRCan’s Federal Building Initiative. Over the last 20 years, about 1/3 of federal buildings have had energy efficiency retrofits completed using ESPCs so there remains a large potential for further energy and GHG emission
2. ***Encourage Provinces to Use ESPCs to Provide Funds to Match Federal Green Infrastructure Projects*** – Provinces should be encouraged to use ESPC’s to provide the required matching portion for federal green infrastructure programs that fund energy efficiency upgrades to existing buildings. At the very least, they should clearly inform provinces that ESPCs can be used for such purposes.

## 2. BACKGROUND ON GUARANTEED ENERGY SERVICE PERFORMANCE CONTRACTS

Guaranteed Energy Service Performance Contracts (ESPCs) have been used in Canada for the last 30 years to use anticipated future energy savings from a retrofit project to finance the initial capital costs of the project. By doing this, they transfer the technical and financial risks associated with energy efficiency retrofit projects from the end user to a private Energy Service Company (ESCO). Under these contracts, ESCOs guarantee that the energy savings achieved over the term of the contract are sufficient to pay for entire project. In a typical ESPC contract, the ESCo will undertake a detailed feasibility, design/install/commission equipment, undertake on-site training/awareness and undertake a detailed Evaluation, Measurement & Verification (EM&V) report on a regular basis to determine if there any difference between the guaranteed and actual energy savings. The ESCO can also arrange for third party financing but as the ESCo is NOT a financial institution, they are indifferent as to whether the end user provides the required funding.

The following illustration shows how an ESPC works. The project eliminates the inefficient energy use and uses the savings generated during the term of the contract to pay for the initial project cost. At the end of the contract, the end user pays the reduced energy bills for the remainder of the life of the

### ILLUSTRATION OF HOW AN ESPC WORKS



equipment.

Source: NRCan Office of Energy Efficiency (1)

It is estimated that contracts worth about \$300 million are signed every year in Canada with about 85-90% of these with public sector organizations (governments at all levels, universities/colleges, schools and hospitals). Projects typically range in size from \$1-50 million. The Canadian federal government has been actively promoting the use of ESPCs since 1991 through the Office of Energy Efficiency's "Federal Building Initiative" (2). To date, this program has led to over 70 successful projects in federal facilities, many involving multiple buildings, that have utilized over \$320 million in private sector funding and resulted in \$44 million in annual energy savings. This experience has led them to conclude that these contracts are not more expensive than traditional contracts (that do not enjoy the benefit of private sector guarantees) once the additional costs of the procurement process and the lower savings that are typically achieved are taken into account (3). To date, this program has impacted about 1/3 of all federal buildings so there remains a great potential for additional energy and carbon savings. The US has a similar program (Federal Energy Management Program) as do most states. The US government has estimated the market to be \$5.3 billion in 2011 and expected to grow to \$10.6 - \$15.3 billion by 2020 (4)

In the last few years, ESPCs have started to be used to finance non-energy related deferred maintenance priorities by extending the term of the contract. The additional capital for non-energy related projects is generated by extending the loan period beyond the simple payback of the energy aspects. In this way, energy savings are being used to finance projects such as roof repair/replacement, elevator/washroom upgrades, parking lots, etc. This ability to reduce deferred maintenance back-logs without additional tax-payer support is increasingly important as public accounting standards gravitate to more disclosure of deferred maintenance liabilities for provincial governments.

There are ten active ESCos in Canada offering ESPCs, 90% of whom are members of the Energy Services Association of Canada (Ainsworth, Airtron/Direct Energy, Ameresco, Energere, Honeywell, Johnson Controls, MCW Custom Energy Solutions, Siemens and Trane).

### 3. THE BUSINESS CASE FOR ESPC'S

Energy efficiency projects have three main benefits which are referred to as the 3 E's (5):

- **Employment** – Energy efficiency projects are labour intensive, unlike many energy supply technologies that are capital intensive. A recent macroeconomic study commissioned by NRCan found that under a high scenario, 305,000 jobs could be added to the workforce by 2030 (6). As many of these jobs are construction-related, they occur at a very local level.
- **Economy** – Energy efficiency is cost effective; the same NRCan study estimated an increase in GDP of over \$500 billion by 2030 (7).

- **Environment** – As 81% of Canada’s greenhouse gas emissions come from the production and use of energy (8), energy efficiency has been widely recognized as a key to reducing these emissions. A recent example is the Canadian Energy Strategy developed by the Council of the Federation which identified energy efficiency as the first of ten initiatives that need to be undertaken (9)

While there are a variety of approaches that can be used to achieve important energy savings, ESPCs have a number of distinct benefits, including the following:

- **Comprehensive** – ESPC projects tend to include a larger number of measures as part of a comprehensive program rather than typical upgrades which tend to be fragmented. With the fragmented approach, often the most cost effective measures are undertaken on their own which means it becomes more difficult to justify other measures after these have been completed. By looking at an asset or portfolio of assets as a system, greater efficiencies can be developed than with a piecemeal approach to upgrades.
- **Turnkey** – Under ESPCs, there is one contract with the ESCO who is responsible for managing all the activities related to the capital work. This single-source of responsibility avoids finger-pointing that is common when there are multiple contracts.
- **Releases Pressure on Capital** – As ESPCs can use private funding sources, limited capital resources can be used for other priorities.
- **Guaranteed Savings** – All ESPCs come with a performance guarantee which is backed up by a comprehensive EM&V program
- **Addresses Existing Buildings** – As Canada adds 1-1.5% to its building stock each year, the vast majority of buildings in 10, 20 and even 30 years will be older. ESPCs were created to improve the energy efficiency of existing buildings.

While the initial purpose of these contracts was to reduce costs, they are now being used to also improve the environmental performance of existing buildings particularly by reducing the direct and indirect greenhouse gas emissions (GHG) of the facility.

The contributions that ESPCs can make to reducing man-made GHG emissions are important for two reasons.

1. **Contribution to Government GHG Reduction Targets** – The federal government and most provinces have set GHG reduction targets for 2020, 2030 and 2050 and it is clear that these targets will not be met with current measures. In Ontario, where data is available for every public sector building, total GHG emissions from these buildings in 2014 was 4.2 Mt (10). Under an aggressive but achievable assumption that these emissions could be

reduced by 40%, resulting savings would be 1.7 Mt which is 9% of Ontario's gap in meeting its 2020 target of 155 Mt.

2. **Leadership by Example** – In addition to the actual GHG savings, reducing emissions in the public sector is important as it shows leadership by government-controlled organizations. Having its own “House in Order” is particularly important as governments at all levels ask homeowners, drivers and private companies to assist them in achieving their GHG national and provincial reduction targets.

The benefits of using ESPCs have become even larger in the last few years as governments at all levels grapple with annual deficits that put severe limitations on the availability of funds to undertake the necessary improvements to public buildings to reduce GHG emissions, address deferred maintenance priorities and reduce operating costs. Larry Summers, the former US Treasury Secretary, has noted that infrastructure investment programs such as ESPCs reduce debt-to-GDP ratios because they grow the economy and that deferred maintenance/unfunded liabilities are just as much a burden on future generations as debt (11).

#### **4. ENERGY WASTE FUNDED GOOD DEBT, NOT TAXPAYER FUNDED BAD DEBT**

There are two main accounting treatments that are used to record the financial transactions associated with an ESPC. The first is that it is not recognized as debt but as the financing of a receivable from the ESCO based on the reduced energy bills that the end user will be paying. The second is that it is treated as debt and thus the entire transaction goes onto the end users financial statements in the year the installation was completed. While the federal FBI program and many public sector entities have used accounting opinions that the ESPC does not need to be recorded as debt, other public sector end users have been told that it must be treated as debt. Even if the ESPC is considered debt, it is a very different form of debt than other traditional tax-payer funded debt incurred by provincial governments and their related public sector organizations.

One of the important features of ESPCs is that the public sector payments against debt are paid off through the savings that are realized and guaranteed by the ESCOs. This means that even if, for any reason, the projected energy savings are not achieved, the ESCo is obligated to pay the difference between what was saved and what was guaranteed. This is very different from other financial obligations taken on by provinces as they are guaranteed by the government or “self insured” and, ultimately, paid back by tax-payers. Thus ESPCs can be considered as “good debt” as the obligations are paid from the energy that was saved and are guaranteed by a private ESCo. By comparison, other debt obligations taken by provincial governments can be considered “bad debt” as they must be paid by taxpayers. This distinction is made very clear in the recent

article by a well-known expert in project finance, Stuart Galloway of Espirito Corp. in his article “Good Debt: Bad Debt: demystifying the notion that all debt is bad in the space of public infrastructure” (12).

There are a number of examples where the principal of treating ESPCs as good debt have been put into practice. In Alberta, the Capital Borrowing Regulation 188/98 under the School Act states that a board may borrow funds “to meet capital expenditures to refit a school building for energy conservation if the cost of retrofitting is guaranteed by the supplier in writing to be recoverable by the board from savings in energy costs in not more than 20 years” (13). Although this regulation does not specifically reference ESPCs, such contracts are and have been the most common way in which school boards have met the provision. The effect of this regulation is that borrowing for energy conservation retrofits of schools is actively encouraged. In the US, all 50 states not only authorize the use of ESPCs but each has identified a lead management agency to promote their widespread adoption (14).

## **5. OPPORTUNITY TO USE ESPCS IN FEDERAL/PROVINCIAL BUILDINGS**

Buildings represent 12% of Canada’s GHG emissions and are the 4th largest sector within the national carbon footprint. While building codes and new build technologies may help limit the growth in building emissions between now and 2030, existing buildings represent a much larger opportunity in terms of reducing the cumulative emissions and the annual rate between now and 2030. By a wide margin, the single largest building owners in the country are the Provincial Governments and, to date, progress in reducing actual emissions in government buildings has been negligible (and in some cases has increased).

As noted in Section 1, only about 1/3 of federal buildings have made energy efficiency upgrades using ESPCs and many of these were done so long ago that there are large further savings that could be achieved. Thus the potential carbon emission reductions at federal buildings is large and still mainly untapped.

The single largest impediment to comprehensive emissions reduction retrofits in provincial buildings is the lack of access to capital. This applies to core Provincial Government buildings as well other Public Sector Organizations (PSOs) such as school boards and health regions that are provincially funded. While there has always been a significant opportunity to finance comprehensive efficiency retrofit projects using ESPCs in provincial buildings using the avoided utility costs to repay the loans, the aversion to debt at the Provincial Government level has precluded this approach. Due to the fact that all debt at the individual PSO level is rolled up to the Provincial Government balance sheets, fiscal policy has precluded these PSOs from taking on this debt in most provinces due to concerns about Debt/GDP ratios and bond ratings.

The debt aversion/prohibition at the provincial level has dictated that any building efficiency retrofits that are implemented must be funded from year-to-year operating budgets. This severely limits the level of comprehensiveness in building emissions reductions that can be accomplished and results in “cherry picking” the shortest payback measures as funds become available. However, comprehensive retrofits are a one-time opportunity that involve blending short and long payback measures and the inability to finance comprehensive efficiency projects over the long term results in the permanent abandonment of many of the longer payback efficiency measures where the bulk of the emissions reductions are. The lack of meaningful emissions reductions in provincial government buildings will present an “own house in order” optics problem when the Federal and Provincial Governments ask the private sector and individuals to do their part to help Canada achieve its COP21 commitments.

The Federal Government can play a vital role in facilitating comprehensive provincial building efficiency retrofits by helping the Provincial Governments to get beyond their aversion to debt. By offering a Matching Grant for PSO and other provincial building retrofit projects from within the \$120 Billion, 10-Year infrastructure budget allocation, the debt issue would no longer be a factor. A matching program of \$1 of Federal Grant for every \$1 of capital that can be created by borrowing against avoided utility costs (over a 15-year term) would fully leverage the Federal Government’s investment while also creating jobs and economic activity. Some anticipated aspects and prerequisites of such a program would likely include:

- **Risk Transfer:** A mandatory guarantee of total capital cost and savings performance by the private sector. This could leverage NRCan’s Federal Buildings Initiative in terms of the use of Energy Performance Contracts (EPCs) as well as the pre-qualification of EPC firms. The risk transfer would be required to ensure that the utility reductions actually materialize (to protect the federal investment) and to prevent a PSO from facing a budget deficit problem if the actual savings are insufficient to cover the loan repayments.
- **Efficacy:** Grants should be subject to a minimum efficacy target (Federal investment per Tonne over the guarantee period) to ensure the grants are distributed optimally.
- **Annual Limits:** The Federal Grants available each year would be limited and initially offered to the Provincial Governments using a pre-determined distribution formula. These offers would have an expiry period after which any amount unused by a province could be made available to other provinces who have shovel-ready projects.

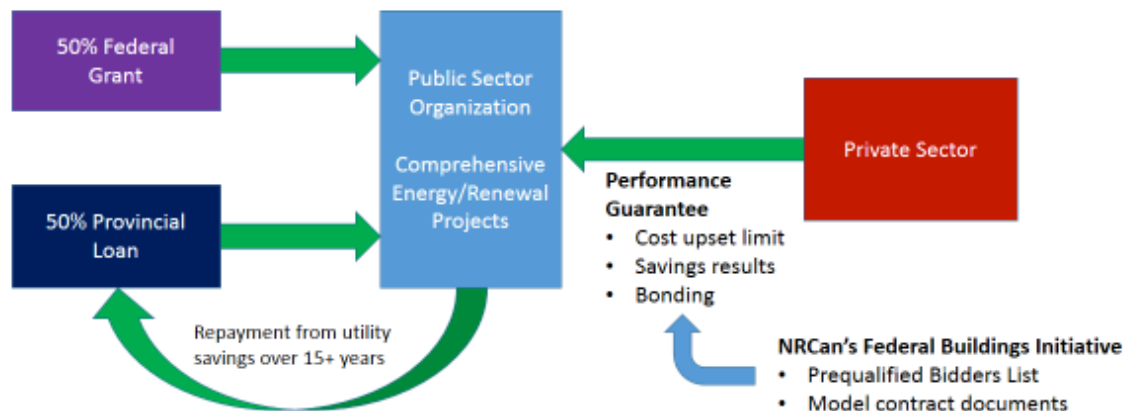


In the most recent federal budget, the federal government committed to invest \$120 billion over the next 10 years, to be spent equally on transit, green infrastructure and social housing with the condition that provinces provide the remaining funding. That budget also included \$574 million over 2 years for energy and water efficiency retrofits and renovations to existing social housing units, up to \$2 billion over 3 years to post-secondary schools to reduce GHG emissions as well as funding for first nations, all of which require provincial matching funds (17).

There is thus a great opportunity to use ESPCs to provide the matching provincial funds for these various programs. As noted in section 3, even if these contracts are treated as debt, they are guaranteed by the ESCO and thus represent “good debt”.

For those provinces with carbon pricing programs; there is also the opportunity to set aside some of the proceeds from carbon tax revenue or sale of permits to be earmarked for ESPCs with terms attached.

## Provincial Building Energy Retrofits Leveraging Federal Funding Through Matching Grants



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