

Draft JCI Response to European Commission Consultation on Financing Energy Efficiency in Buildings

The Building Efficiency business of Johnson Controls (JCI) is pleased to have this opportunity to input into the Commission's work on creating a regulatory and policy support framework which will help to unlock greater sources of finance for energy efficiency in buildings. We welcome the fact that the Commission recognises buildings are central to improving Europe's energy efficiency and is seeking to further understand financing mechanisms. Johnson Controls' Building Efficiency business unit delivers products, services and solutions that increase energy efficiency and lower operating costs in buildings for more than one million customers. Operating from 500 branch offices in more than 150 countries, we are a leading provider of equipment, controls and services for heating, ventilating, air-conditioning, refrigeration and security systems. We have been involved in more than 500 renewable energy projects including solar, wind and geothermal technologies. Our solutions have reduced carbon dioxide emissions by 15 million metric tons and generated savings of \$7.5 billion since 2000. Many of the world's largest companies rely on us to manage 150 million square metres of their commercial real estate.

Johnson Controls is one of the world's largest Energy Service Companies (ESCOs) offering our customers a range of products and services, including Energy Performance Contracting (EPC). We know that where the correct regulatory mechanisms are put into place the Performance Contracting market has grown significantly, offering customers in both the public and private sector an innovative financing mechanism to fund their energy efficiency renovations. This work can be done without significant impact on balance sheets and can be financed through the energy savings made. As an example the EPC market in the United States is estimated to be worth \$5-7 billion per year, in the EU this is less than \$1 billion. Our response to the Commission consultation will focus on the barriers to the growth of the EPC market in Europe. Although Johnson Controls has experience in arranging relevant and competitive finance for energy efficiency projects, we have learnt that both public and private financial institutions still treat such projects as unsecured lending. Therefore, more efforts need to be made to educate financial institutions and public and private funds as to how to finance qualified guaranteed savings and how to obtain security from them. In addition, channeling these funds to those who demand them and creating this demand in the first instance also presents challenges. Therefore, we would not necessarily argue that the public sector needs to throw money at the energy efficiency issue (although this would, of course, be welcomed). Rather the correct mechanisms need to be put in place to unlock the undoubted and proven potential of private capital. If public funds are used they should be used in an 'intelligent' way to leverage private finance. The European Energy Efficiency Fund and the JESSICA facility are excellent examples of the 'intelligent' use of public monies.

Johnson Controls' Response to the Consultation Questions.

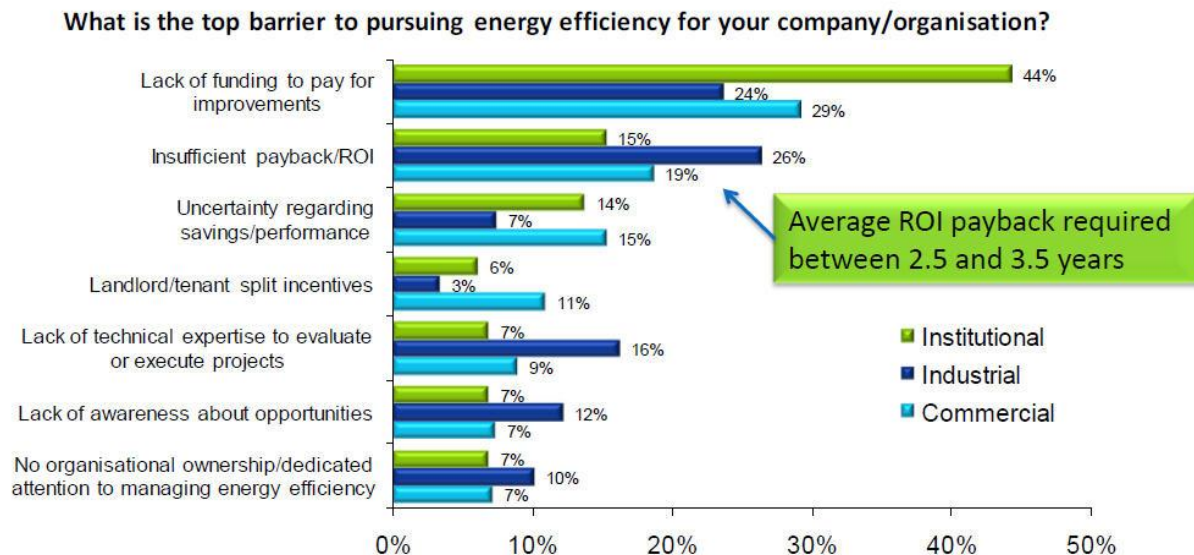
1) Addressing Market Failures

a) Are the barriers identified in this document the most important ones? If not, which barriers are missing and why are they important?

The Commission document does identify many of the most common barriers to investing in energy efficiency. In the experience of Johnson Controls the biggest barriers to action include; a lack of information, a low priority given to energy costs in overall budgets, and an unwillingness to invest for lengthy periods. It is important to make a distinction between the public and private sectors, and again between the domestic and non-domestic (commercial) sectors.

Annual research¹ by the Johnson Controls Institute for Building Efficiency tracks attitudes toward energy efficiency in the commercial building sector. It reports that many of the barriers identified in the Commission document are present globally. The 2011 European results, Figure One, show the key barriers to investing are financial and technical.

Figure One: Barriers to Investing in Energy Efficiency Reported in the 2011 Energy Efficiency Indicator Europe.



Turning to the Consultation document's analysis of the shortcomings of the financial sector, Johnson Controls agrees with many of the conclusions highlighted by the Commission. However, it is our experience that accessing finance is not necessarily the main barrier obstacle to energy efficiency projects. Rather it is a lack of addressable and understandable projects and knowledge of the business of energy efficiency within the financial sector.

Focusing on barriers to Energy Performance Contracting (EPC) in Europe, further research² by the Institute for Building Efficiency suggests the following key barriers which must be addressed before the market will be of a similar size to that in the United States:

- **Lack of awareness.** Unlike in the United States, there is a low level of awareness of Performance Contracting in both the private and public sectors of most European countries (Austria, Germany, and Sweden being notable exceptions).
- **Lack of Policies and Support Mechanisms.** Not surprisingly, this lack of awareness is reflected in a low level of market development and in a lack of specific policies and government-backed support mechanisms designed to promote EPC while removing any impediments to successful projects.

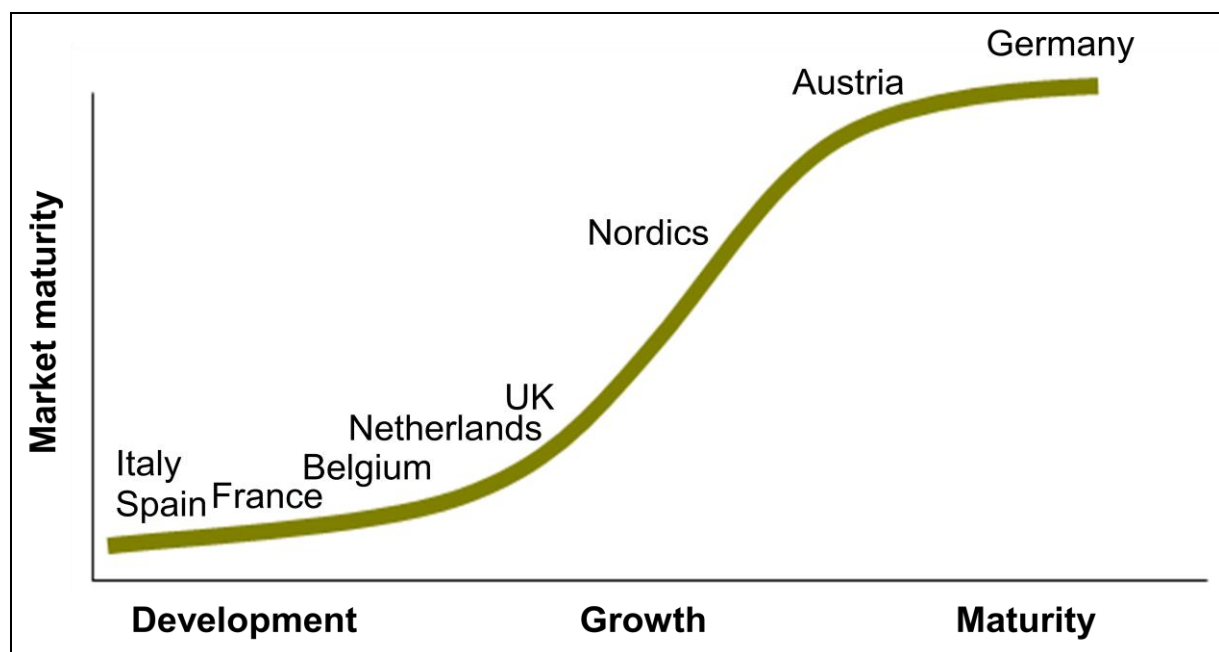
¹ The Energy Efficiency Indicator (EEI) surveys the attitudes, priorities, and concerns of people at the front line of energy management in commercial buildings throughout the world. The EEI investigates which changes and trends can be observed over time, and how do motivating factors, priorities, policies, and practices differ from one region of the world to another. <http://www.institutebe.com/Energy-Efficiency-Indicator.aspx?lang=en-US>.

² <http://www.institutebe.com/InstituteBE/media/Library/Resources/Existing%20Building%20Retrofits/Issue-Brief----Energy-Performance-Contracting-in-the-EU.pdf>

- **Public and Private Sector Capacity Constraints.** Unfortunately, even in cases where awareness about EPC is high and where support policies and mechanisms exist, public and private building owners may simply not have the technical capacity and/or skill set to seek out qualified ESCOs in order to secure a Performance Contract.
- **Lack of Common Definitions and Harmonised Processes.** Performance Contracts may be understood in different ways from one European country to the next, and definitions and contract types can vary widely within countries.

While nation-specific approaches to Performance Contracting may be appropriate in order to account for local differences and circumstances, the lack of common definitions and harmonised processes hinders that development of standards and best practices, creating uncertainty and confusion in the marketplace. The 2006 Energy Service Directive attempts to provide clarity and guidance for the development of a transparent EU-wide market for energy services. However, many of the provisions of the Directive failed to have the hoped for effects resulting in a wide variety of market developments in the member states, see Figure Two. We are hopeful that the new Energy Efficiency Directive will fulfill these requirements.

Figure Two: Public Sector EPC Market Maturity in Europe.



- **Prohibitive Public Procurement and Budget Rules.** In many European countries, public authorities are not allowed to leverage financing based on future guaranteed energy savings. National authorities may also impose lending limits on local authorities leaving capital-strapped administrations little room to pay for the up-front costs of Performance Contracting. In addition, administrative budgets are often allocated based on the spending of previous years. This 'use it or lose it' allocation structure undermines the incentives to save energy and reduce expenditures through Performance Contracts or other means.
- **Financing Constraints.** European governments, almost without exception, are facing high budget deficits and public debts. Under pressure to cut spending they must deal with rising energy costs and are exposed to fossil fuel price fluctuations. Many of these same governments are not aware that Performance Contracting can save money, enhance energy security, and be implemented in times of budgetary austerity. In addition, relevant financing solutions for viable

energy efficiency projects do not necessarily increase public debt levels not should they use up existing credits lines.

- **Market Failures.** In commercial settings, improving energy efficiency may raise the value of a building and thus increase the property tax burden on the owner. Equally, reduced energy costs may benefit tenants rather than owners of commercial buildings, reducing the incentive for owners to invest in efficiency measures.

Private sector decision-makers are also under pressure to realize rapid (2-3 year maximum) returns on investments. They may shy away from more long-term and comprehensive Performance Contracts, undermining the potential to reduce the operating costs and environmental footprints of their facilities. Johnson Controls would support the introduction of Government schemes which would provide incentives to look beyond this 2-3 year timeframe. Such schemes could include:

- Utility incentives for energy efficiency where the utility is operating under an energy efficiency resource standard. Under such programs a best practice would be to require basic instrumentation to allow for real time energy performance measurement (used in Californian programs). This could also include government incentives tied to the depth of retrofit achieved; and
- Structures to reduce capital risk, performance risk can be covered through the ESCO's via Performance Contracts, Energy Service Agreements or shared savings but credit risk is a huge barrier as these retrofits are integrated into the building and cannot typically be secured on the assets. Some current schemes which address this issue include programs that secure the financing via a property tax lien (Australia or California programs) or a program that provides credit insurance for projects that meet key criteria (i.e. loan guarantee program for retrofits that achieve 20% or more in savings).

Finally, the inflexibility and lack of competition in a number of member states' energy markets provide little incentive and reward for consumers to seek to save energy. This failure also means that some demand side services such as demand response are not as developed as they could be.

b) Which market failures would be most urgent to address? At what level would these failures be best addressed?

In the view of Johnson Controls, the Commission document correctly captures the main market failures. Some of the failures identified such as energy costs, are issues for which it is difficult for policy-makers to address and are best left to the market. In addressing the other market failures identified, it will be necessary to take a structured approach that will deal progressively with the barriers identified. Johnson Controls suggests that adopting the well-known *AIDA* approach of *Awareness – Interest – Desire – Action* would be a good start as in this approach work begins with raising the awareness of a target audience to an opportunity which leads to an interest in the issue developing in the mind of the audience. This in turn is translated into a desire to do something about the issue, finally leading to action being taken.

It is our view that addressing the barriers to the use of Performance Contracting in Europe would be a significant step in increasing energy efficiency programmes in Europe.

Johnson Controls believes that action needs to be taken at all levels. Whilst many of the barriers can be addressed at the local and national levels, Europe has a role to play in highlighting these barriers and promoting possible solutions and best practice. Europe should also take the lead in the creation of a regulatory framework to promote greater

investment in energy efficiency. We are hopeful that the forthcoming Energy Efficiency Directive and the full implementation of the Energy Performance of Buildings Directive will play an important role in this regard. However, we would call on the Commission to address other issues such as accounting rules, public procurement rules, and state aid to promote greater use of Performance Contracting and investment in energy efficiency in general.

Regarding public procurement Johnson Controls would suggest rule changes that allow for single source awards in order to avoid significant stranded development costs in the industry - in conjunction with open book pricing mandates to ensure effective procurement.

c) How could these failures be best addressed?

Through concerted, coherent and integrated policy development and implementation in which a stable, long-term climate for investment in energy efficiency of buildings is created. Despite the global economic and financial crisis, there are large sums of money available for investment in energy efficiency of buildings. What is lacking is an investment grade policy that would see a rapid flow of money to energy efficiency.

For example; how could behavioural change needed for quicker uptake of energy efficiency measures by society be triggered at the national level?

Inducing behavioural change in democratic societies is notoriously difficult and best achieved by rewarding individuals for changed behaviour that leads to the achievement of a desired outcome. In other words, the individuals that must change their behaviour must see a personal advantage in the change for themselves. The first starting point must therefore be to ensure that all information on energy efficiency is framed in a positive light. Additionally, expressing energy use in a more transparent manner, for instance in the commercial sector a measure of energy per person working rather than per m², may also raise awareness of energy efficiency. Such a change could be achieved by changes to the Energy Performance Certificates required by the EPBD.

How could the development of an energy services market for households be further stimulated?

In general, given the fact that the largest proportion of the building stock is in the residential sector, the behaviour of households will have a significant impact on Europe's energy efficiency. Currently transporting the energy services model to the domestic sector is beset with challenges. First and foremost, the size of any given project in the domestic sector does not make it commercially attractive for the energy services sector. Additionally, the general complexity of an ESCO contract does not make it suitable for the domestic sector. However, one possible way to overcome this problem would be to investigate methods of aggregating households into a larger collective project, which would make the sector more attractive for the ESCOs and help to overcome some of the complexities inherent in the ESCO model. Another route to introduce ESCOs to the domestic sector would be to focus on multi-tenants properties which have centralised heating and water systems. Again the scale of these projects would make them suitable for the ESCO model. This model has been successfully trialled in Canada and in France where environmental legislation (*le Grenelle Environnement*) requires multi-tenant dwellings to investigate the use of Energy Performance Contracting.

In noting the dominance of the residential stock in Europe's built environment the energy saving potential of the non-domestic sector should not be ignored, sector where the Energy Performance Contracting model is proven. Given the size and energy use of many individual buildings in the non-domestic sector, the saving potential is easier and less costly to tap than that of many units in the domestic sector.

How could the business community (e.g. building sector, ESCOs, local banks, etc.) be better supported in delivering energy efficiency in buildings?

Increased technical assistance programmes that are specifically designed to address each part of the supply chain need to be maintained and increased. Such programmes can be used to educate, assist and guide all those that have a responsibility to deliver energy efficiency in buildings.

Improving and reinforcing the ways that public procurement rules and procedures can favour higher levels of energy efficiency in buildings that are procured by contracting authorities would also help.

In order to promote the development of an ESCO market in Europe, the barriers described above need to be addressed. The main issue for the sector is not one of finance but a lack of knowledge of the types of services and ESCO can offer. The barriers we mention are the key elements in stopping projects moving forward, removing these will help to increase awareness as more projects are successfully concluded.

How could the split incentive problem be best tackled?

It must be recognised that the split incentive problem as described in the consultation document affects no more than about 50% of the market. Focussing on the 50% not affected and using this portion to get the renovation of our buildings underway will create a certain momentum. As high numbers of renovated buildings become common, they will act as a great pull for those that suffer from the split incentive. However, the rental sector (both domestic and commercial) should not be ignored. In the non-domestic space the ability of large-scale property owners to influence the behaviour of their tenants should not be understated. Johnson Controls would also suggest legislative measures which would allow the owner to pass on the costs of investments to their tenants where the savings are clearly effective, measured, and verified. Innovative financing mechanisms such as the Shared Savings and Energy Service Agreement models should also be investigated.

2) Improving Access to Financing

a) Are the current EU-level financial tools for energy efficiency in buildings effective? How could the uptake of EU-level funding for energy efficiency (including cohesion policy funding) be improved? As a complement to tailor-made national or regional financial instruments, what could be the future role of centrally-managed financial instruments at EU level in this context?

There are problems with some of the current EU-level financial tools that restrict their effectiveness. These relate to the complexity of getting funding to flow to actual building projects and to the lengthy and burdensome procedures that must be fulfilled. In the case of the Structural Funds, there are additional problems related to the fact that rules allowing for the Structural Funds to be used for energy efficiency in buildings are recent and the main actors involved in managing those Funds are unfamiliar with the energy efficiency market and how it works. In addition, a lack of guidance and monitoring means that the money marked for energy efficiency in buildings is used on projects which are not really about energy savings.

This being said there are a number of tools and funding mechanisms which exist at the European level which have been very successful. The ELENA fund has been able to leverage private funding in excess of 10 times the original fund. Supporting local

authorities in the development of projects will address some of the short-comings suggested earlier. The new European Energy Efficiency Fund (EEEEF) shows great promise. Aimed at the public sector with contract terms of 20 years, Johnson Controls believes that the Fund will have a positive effect in allowing the ESCO industry to build the critical mass of case studies needed to overcome the lack of trust and awareness in the ESCO model. It is precisely these types of effective funding mechanisms Europe should be looking to further develop.

With regards to increasing the use of central funds and their future role, Johnson Controls would make a number of suggestions:

- Ensure stronger and more far-reaching technical assistance programmes, including financial assistance (such as the one provided by the EEEEEF);
- Encourage the deployment of private funding through direct EU funding participation and/or the use of implicit or explicit guarantees;
- Use the EU funds to generate investor confidence in the energy efficiency market; and
- Use the EU funds to lower interest rates on energy efficiency loans.

b) How could more private finance (both from institutional investors as well as building owners) for energy efficiency projects be mobilised? What would be the role of public funding (both at EU and national level) in the context? Is access to (project development) technical assistance an issue and how could it be provided most efficiently at national, regional, and local level? How could national and EU financing schemes be improved to best cover all segments of the market?

The best way to mobilise private finance is to create a long-term stable investment and regulatory environment that will build investor confidence. Before this comes into place, widespread publicity of successful best practice examples of privately financed projects should be undertaken. Using public funding strategically to lower interest rates or to reward proven high performance buildings would also be good ways to mobilise private finance. This being said, Johnson Controls believes that access to private finance is not an issue, rather efforts need to focus on developing demand for these funds, partly by generating an understanding of the energy efficiency sector.

In our previous answers we indicated that the role of the public sector should be to enable and support private capital. We do not believe large sums of public money will be necessary to create a step-change in energy efficiency investments in Europe's buildings, although discrete targeted allocations of funding can make a difference to leveraging private sector interventions.

Given the lack of knowledge and expertise of many actors, having technical assistance programs has proven to be of real importance, the issue is to maintain and increase technical assistance funding in the future. Early results with the ELENA technical assistance programme indicate that for every €1 spent in providing technical assistance, €60 has been invested in real projects. This is a significant leverage that underlines the enormous value of technical assistance programmes.

Johnson Controls does not believe there is a one-size fits all solution for the different sectors. Each should be approached with their own specificities in mind and programs and policy designed accordingly. However, there is scope for best practice and knowledge to be shared across the sectors.

c) Is there a need to guarantee systems related to building efficiency investments? If so, what guarantee schemes for efficiency investments

would be necessary and how should they be designed? Is there a need for other enabling mechanisms (e.g. risk sharing, investment vehicles)?

As one of the world's largest ESCOs, Johnson Controls certainly sees and understands the power of the performance guarantee in the Energy Performance Contracting model.

In order to overcome some of the, already identified, issues around the use of Performance Contracting and financial institutions, explicit and implicit financial guarantee structures should be implemented to allow financial institutions to view EPC projects as secured lending. In addition, the setting up of investment and or special purpose entities should be facilitated in a cost-effective and tax-efficient manner.

We believe a key focus of European and national policy should be to try an increase the use of the model in Europe. With regards to other enabling mechanisms, we and other ESCOs are well versed in the development of complex models to support our customers.

d) How could the capacity, knowledge and risk perception regarding energy efficiency investments be improved, both at financial institutions as well as with private investors and administrations at all levels?

We have covered many of these points in our previous answers, we would only add that all of these issues can be overcome with experience and increasing energy efficiency projects in Europe's buildings.

e) Are there any examples of good practice at national or regional level that could be applied more widely?

- The KfW scheme;
- The Irish Better Energy Workplaces Fund;
- The Green Deal;
- The Kredex Fund; and
- The French Energy Savings Certificates Scheme.

3) Strengthening the Regulatory Framework

a) Is there any need for further EU level regulation to stimulate energy efficiency in buildings beyond the Commission proposal for a new Energy Efficiency Directive? If so, what should these measures entail?

Yes. Whilst a step in the right direction the Commission should seek to remove all of the barriers to Energy Performance Contracting mentioned earlier. It should look to strengthen those elements of the Directive which will be helpful to ESCOs such as increasing public sector renovation rates and energy savings obligations on utilities. In the longer-terms the Commission should address the issue of a binding energy saving target and a Roadmap for the renovation of the EU buildings stock that has a time horizon of 2050. That Roadmap should set out the steps that the EU needs to take in order to ensure the achievement of our goal of reaching a low-carbon economy by 2050. It should contain interim targets for 2020, 2030 and 2040 and should describe a series of measures and policies that both the EU and Member States could use in order to reach our destination. The required level of ambition in such a Roadmap would be to reduce the energy demand of the EU building stock by 8% by 2050 as compared to 2005 levels.

b) What could be specific measures to be taken at national level to implement and complement most effectively the EU level regulatory framework for energy efficiency?

Johnson Controls would suggest the full implementation of European law and removal of local barriers to the use of Performance Contracting. We would also argue for the use of a standard measure which indicates the efficiency levels of building utility.

c) What are the specific needs for policy guidance and awareness raising amongst different stakeholder groups?

Many of our previous answers have covered this point. Again by doing more projects will we raise awareness and support for action.

For the longer term the introduction of programs to accelerate the transition to a smart grid should be considered. Measures should include:

- Instrumentation - digital real time metering of buildings;
- Funding/incentives to implement automated demand response technology (possibly as part of retrofit programs) (for instance the Californian program at \$150 per KW enabled for Automated Demand Response); and
- Create demand side energy markets where aggregators can deliver peak load reduction into the energy markets at full market pricing and potentially deliver efficiency under programs that monetize utility energy efficiency resource standard requirements.