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This Article reviews international law developments in 2016 in the field of international procurement.

I. Bidders Beware: Updates in Canadian Procurement Law

Developments in Canada's procurement landscape in the past year have imposed significant new requirements on bidders, but have also created new procurement opportunities by opening new markets and allowing bid challenges of previously exempt procurements.

A. NEW REQUIREMENTS FOR BIDDERS UNDER THE INTEGRITY REGIME

On April 4, 2016, Public Works and Government Services Canada (PWGSC) introduced changes to its Integrity Regime (Regime), which is made up of the Ineligibility and Suspension Policy and associated integrity provisions, and are incorporated into Canadian federal solicitations, contracts, and leases.¹ The Regime came into force in summer 2015 to replace 2012's federal Integrity Framework.

Pursuant to the Regime, suppliers who have been convicted of, or who have pleaded guilty to, certain offences become ineligible to bid on government contracts, either indefinitely or for ten years, depending on the offence. Suppliers can also become ineligible as a result of the actions of

* Martin G. Masse and Erin Brown of Norton Rose Fulbright Canada LLP authored Section I entitled "Bidders Beware: Updates in Canadian Procurement Law." Samuel W. Jack, an Attorney Advisor for the U.S. Agency for International Development (USAID), authored Section II entitled "Social Impact Bonds: An Emerging Public Financing Mechanism." Mr. Jack also served as the editor of the International Procurement Committee's Year in Review for 2016. Steven D. Tibbets, Managing Senior Counsel with CA Technologies, authored Section III entitled "Evolving Country of Origin Rules for Software could have Significant Consequences for U.S. Government Vendors." Daniel Carey Brown and Kristina Dahmann authored Section IV entitled "Advanced Biofuels: American and Japanese Perspectives," and recently completed concurrent clerkships with the Honorable Algenon Marbley and the Honorable Michael H. Watson of the Southern District of Ohio, respectively. The views of the authors are not attributable to their law firms, companies, or government agencies. The article covers developments during 2016.

1. See PUBLIC WORKS AND GOVERNMENT SERVICES CANADA, GOVERNMENT OF CANADA'S INTEGRITY REGIME (2016), available at <http://www.tpsgc-pwgsc.gc.ca/ci-if/ci-if-eng.html> [hereinafter Update to Integrity Regime].

subcontractors or of affiliates they control. Additionally, PWGSC has considerable discretion to suspend suppliers who have been charged with or have admitted guilt to certain offences.

However, a number of remedies exist for suppliers. Cooperative suppliers may see their ten-year periods of ineligibility reduced to five years; suppliers may have the option of entering an administrative agreement to gain relief from ineligibility; and the Government may invoke the public interest exception to do business with suppliers who would otherwise be ineligible.²

The April 4, 2016 changes to the Regime include the requirement that bidders disclose all foreign criminal charges and convictions, as well as anti-avoidance provisions. The updated disclosure requirement mandates that bidders, as part of their bid, provide “a complete list of all foreign criminal charges and convictions that may be similar to the Canadian offences listed in the Ineligibility and Suspension Policy pertaining to itself, its affiliates and its proposed first tier subcontractors.”³ When submitting bids, bidders will have to certify that they have provided a list of all foreign criminal charges and convictions. A supplier that provides a false or misleading certification, including one that is false or misleading with respect to foreign criminal charges and convictions, will become automatically ineligible to bid on government contracts.⁴

In terms of anti-avoidance, under the revised Regime, mergers, acquisitions, divestitures, spin-offs, and other successions and corporate reorganizations may not be used to circumvent ineligibility or suspension. Where the purpose or result of a corporate restructuring or succession is to avoid an ineligibility or suspension determination, PWGSC has the discretion to determine that the successor entity is also ineligible or suspended.⁵

B. ENTRY INTO THE CANADA-EU COMPREHENSIVE ECONOMIC TRADE AGREEMENT

Canada’s entry into the Comprehensive Economic Trade Agreement (CETA) with the European Union on October 30, 2016, presents exciting new opportunities for both Canadian and EU businesses. CETA’s procurement chapter covers a wide range of contracting entities and includes

2. See *id.* (updating Supply Manual §§ 4.21.1., 4.22.1, among other changes).

3. See *id.*; see also PUBLIC WORKS AND GOVERNMENT SERVICES CANADA, INTEGRITY DECLARATION FORM (Apr. 4, 2016) available at <http://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html>. The obligation to disclose charges, convictions and other circumstances is ongoing. See PUBLIC WORKS AND GOVERNMENT SERVICES CANADA, INELIGIBILITY AND SUSPENSION POLICY at § 17(c), (Apr. 4, 2016), available at <http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html> [hereinafter Ineligibility and Suspension Policy].

4. See Update to Integrity Regime, *supra* note 1.

5. See Ineligibility and Suspension Policy, *supra* note 3, at § 10

commitments to ensure that procurement is transparent, accountable, impartial, and non-discriminatory.⁶

Under CETA, EU companies will be able to bid on Canadian procurement contracts, including at the municipal level, where the value of procurement is understood to significantly exceed that of the federal government. Given that the EU's government procurement market is estimated at approximately \$3.3 trillion annually,⁷ CETA also creates significant opportunities for Canadian companies to supply goods and services to a wide range of EU government contracting entities.⁸

These landmark procurement obligations are expected to be provisionally applied as early as spring 2017.

C. SUCCESSFUL CHALLENGE TO THE NATIONAL SECURITY EXEMPTION

The last year also saw a narrowing in the scope of the National Security Exemption (NSE), which the Government of Canada routinely relies on to avoid the bid challenge mechanism that is typically available to potential suppliers in other competitive procurements.

In its August 2016 decision in *MD Charlton Co. Ltd.*,⁹ the Canadian International Trade Tribunal (CITT) determined that PWGSC violated the Agreement on Internal Trade (AIT) by failing to tailor the scope of the NSE. *Charlton* involved PWGSC's procurement of night-vision binoculars on behalf of the Royal Canadian Mounted Police (RCMP), the end-user of the binoculars. The RCMP had indicated that, as a matter of national security, technical specifications could not be disclosed. However, when PWGSC invoked the NSE, it applied a blanket exemption to the solicitation from all disciplines of the trade agreements. Rather than making the request for standing offer publicly available, PWGSC sent it to a pre-determined list of three potential bidders.

In response to the complainant's allegation that the NSE was improperly invoked, the CITT determined that, since the non-disclosure of technical specifications would have sufficed, the purchaser provided no rationale for the blanket exemption. The CITT ultimately held that while trade agreements like the AIT allow government institutions to take any action they consider necessary to protect national security, the NSE cannot be invoked to automatically and completely remove solicitations from the purview of trade agreements without further scrutiny.

6. GOVERNMENT OF CANADA, CHAPTER SUMMARIES, available at http://www.international.gc.ca/trade-commerce/trade-agreements-accords-commerciaux/agr-acc/ceta-aecg/chapter_summary-resume_chapitre.aspx?lang=eng#a20.

7. *Id.*

8. The specific government entities that are subject to the Agreement's procurement obligations are set out in annexes. See, e.g., Comprehensive Economic And Trade Agreement, Can.-E.U., available at http://trade.ec.europa.eu/doclib/docs/2016/february/tradoc_154329.pdf.

9. (May 13, 2016), PR-2016-007 (CITT).

D. CONCLUSION

While the last year has ushered in new requirements for suppliers to remain eligible to bid on Canadian government contracts, it has also seen an ambitious new trade agreement with a landmark procurement chapter. Additionally, the scope of the NSE exemption has been narrowed. Overall, these developments should create new opportunities for suppliers in the Canadian marketplace.

II. Social Impact Bonds: An Emerging Public Financing Mechanism

In the last few years, social impact bonds have emerged as a means of accessing private capital to finance preventative solutions to pervasive, public social problems.¹⁰ This private sector financing arrangement is based on the principle of “pay-for-success,” whereby a government pays a third party based on the achievement of pre-defined performance targets. Given the ubiquity of shrinking budgets and political gridlock in the United States and many European countries, this financing instrument is likely to continue to grow in popularity. By unlocking private capital and focusing on results-oriented approaches, social impact bonds could improve the effectiveness of social programs. The social impact bond model and similar funding instruments also have the potential to become useful tools for international development. However, the long-term success of the model will depend on governments’ ability to devise social impact programs that are susceptible to rigorous measurement and quantifiable results.

A. HOW IT WORKS

A common social impact bond structure is shown in Figure 1 below and involves the following steps: (1) private sector investors—often philanthropic organizations or sustainability funds of commercial lenders—lend money to finance the up-front costs and working capital for the program; (2) a project manager—often a non-profit organization—contracts with the relevant government entity, receives the funding from the investors, and manages the service provider; (3) the service provider provides direct services to the recipients utilizing operating funds provided by the project manager; (4) independent evaluators measure the performance outcomes achieved by the service provider against the pre-established performance targets; (5) depending on the extent to which the performance targets are met, the government pays the project manager based on an agreed upon formula; and (6) assuming the project manager receives payment from the

10. From a public finance perspective, social impact bonds are not “bonds” because they do not entail the issuance of public debt. Although these arrangements are more accurately characterized as a series of contracts, the term “social impact bond” has been popularized because the structure entails a government payment to a private financier. To avoid confusion, social impact bonds are often described as a form of “pay-for-success” contract.

government, the project manager repays the investors, potentially including interest.

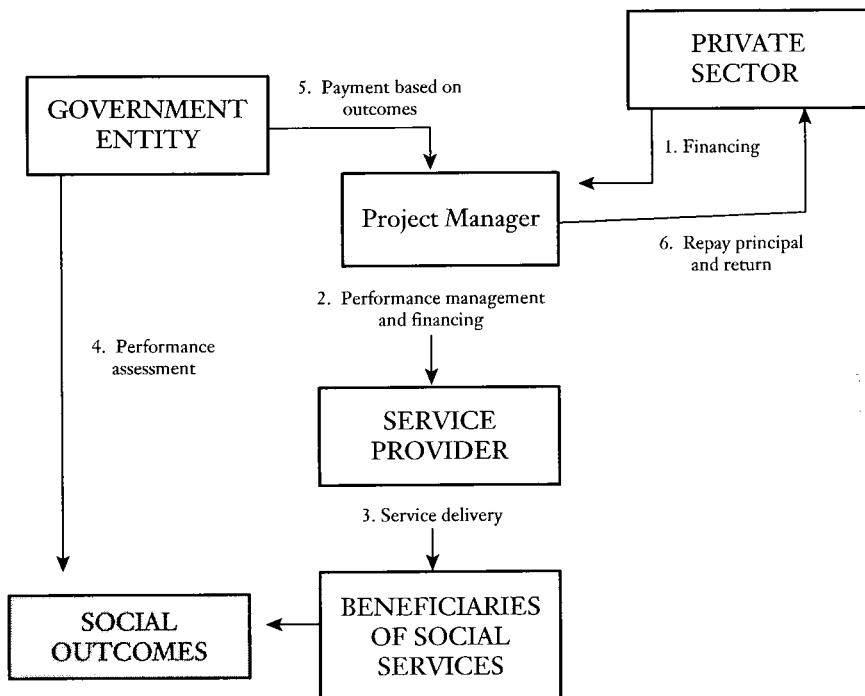


FIGURE 1

At the center of this arrangement is typically a tripartite contract between the government entity, the project manager, and the service provider.¹¹ This agreement will establish the services to be performed and the performance targets; funding levels; oversight and reporting obligations; applicable statutory provisions; the formula for calculating success payments; as well as standard legal provisions, including the representations and warranties of the parties, remedies, and liability provisions.¹² Although the lenders may not be a party to the agreement—they typically finance the project through separate financing instruments—lenders may participate in the project’s oversight committee and may be entitled to certain consent rights that are established in the tripartite agreement. The government entity will also separately contract with the independent evaluator to assess the achievement of project goals. As noted below, there are many potential variations on this

11. See, e.g., *Pay for Success Contract among the Commonwealth of Massachusetts, Roca, Inc., and Youth Services Inc.* (Jan. 7, 2014), http://www.payforsuccess.org/sites/default/files/final_pay_for_success_contract_executed_1_7_2013.pdf.

12. See *id.*

structure, and the parties may change the order in which the transaction steps occur to suit their circumstances.

B. ADVANTAGES OF THE MODEL

There are many potential benefits of the social impact bond financing arrangement. Most immediately, the model fills a gap by connecting private capital with service providers to address public needs, which can be particularly attractive to cash-strapped government entities. Although these services (arguably) should be financed with state or local tax dollars, governments are often unable to identify the necessary up-front funding or face other legal and political hurdles to directly financing such projects. The social impact bond arrangement allows the government to address an unmet need without incurring debt. In addition, because—unlike under standard government contracting methods—the government is only required to pay for successful outcomes, its risk is minimized. This risk transfer allows governments to experiment with new approaches to social services without jeopardizing limited tax dollars.

Importantly, the provision of preventative services allows the government to achieve long-term savings by mitigating the need for costly, mitigation measures. Modern governments tend to be reactionary in responding to social problems—even if policymakers recognize a community challenge, the government may not have the resources to effectively address the problem. Tight budgets, institutional limitations, and legal constraints often result in governments treating the symptoms of these problems, not the causes. As a result, governments invest in mitigation measures—be they homeless shelters, emergency medical services, or prisons—even if it would be far less expensive to address the underlying social issues.

The other parties to the agreement also stand to gain. For the investors, social impact bonds can be an attractive means of fulfilling a charitable mission and, depending on the success of the program, earning a modest return on investment. Most importantly, the public gains because this instrument can provide social outcomes that improve communities and reduce the need for follow-on interventions.

C. GROWTH IN THE UNITED STATES

The first social impact bond in the United States was implemented by the City of New York on August 2, 2012.¹³ The program, known as the Adolescent Behavioral Learning Experience (ABLE) program, was designed to provide education, training, and counseling to approximately 3,000 young men incarcerated at the Rikers Island prison, with the goal of reducing the

13. Stu Loeser & Samanthat Levine, *Mayor Bloomberg, Deputy Mayor Gibbs and Corrections Commissioner Schriro Announce Nation's First Social Impact Bond Program*, CITY OF NEW YORK (Aug. 2, 2012), <http://www1.nyc.gov/office-of-the-mayor/news/285-12/mayor-bloomberg-deputy-mayor-gibbs-corrections-commissioner-schriro-nation-s-first#/0>.

likelihood of recidivism.¹⁴ The agreement called for Goldman Sachs to provide a \$9.6 million loan to MDRC, a nonprofit education and social policy research organization that oversaw the ABLE project implementation.¹⁵ Goldman Sachs was to receive its capital back only if the prison readmission rate—measured in total jail days avoided—was reduced by 10 percent or more.¹⁶ Under the loan terms, if the reduction exceeded 11 percent, Goldman Sachs became eligible for a financial return between \$500,000 and \$2.1 million, depending on rate of reduction.¹⁷

The ABLE program was ultimately discontinued in August 2015 after achieving mixed results. The Vera Institute of Justice, which provided the independent evaluation of the program, reported that it did not lead to a reduction in recidivism, and the program did not meet the target required for the city to repay the investors.¹⁸ Goldman Sachs ultimately loaned \$7.2 million to MDRC, of which \$6 million was guaranteed by Bloomberg Philanthropies.¹⁹ Having failed to meet the 10 percent threshold necessary to trigger the city's repayment obligation, Goldman Sachs took a \$1.2 million loss. Despite this result, advocates for social impact bonds have argued that the financing arrangement "worked as it was supposed to"²⁰ because the city (and its taxpayers) did not pay for a program that did not produce the desired results.²¹

14. *Id.*

15. See CITY OF NEW YORK, FACT SHEET: THE NYC ABLE PROJECT FOR INCARCERATED YOUTH (2012), available at http://www.nyc.gov/html/om/pdf/2012/sib_fact_sheet.pdf. The program also benefited from a \$7.2 million grant from Bloomberg Philanthropies, the charity of former Mayor Michael Bloomberg, which guaranteed a portion of Goldman Sachs's loan and thereby reduced its risk.

16. *Id.*

17. *Id.*; see also Donald Cohen & Jennifer Zelnick, *What We Learned from the Failure of the Rikers Island Social Impact Bond*, NONPROFIT QUARTERLY (Aug. 7, 2015), <https://nonprofitquarterly.org/2015/08/07/what-we-learned-from-the-failure-of-the-rikers-island-social-impact-bond/>.

18. VERA INSTITUTE OF JUSTICE, IMPACT EVALUATION OF THE ADOLESCENT BEHAVIORAL LEARNING EXPERIENCE (ABLE) PROGRAM AT RIKERS ISLAND (July 2015) available at <https://www.vera.org/publications/impact-evaluation-of-the-adolescent-behavioral-learning-experience-able-program-at-rikers-island>.

19. See Paul Burton, *No Success Like Failure: N.Y. See Social Impact Bond Pluses*, THE BOND BUYER (July 2, 2015), <http://www.bondbuyer.com/news/regionalnews/ny-city-officials-social-impact-bond-big-plus-1077971-1.html>.

20. See MDRC, MDRC STATEMENT ON THE VERA INSTITUTE'S STUDY OF ADOLESCENT BEHAVIORAL LEARNING EXPERIENCE (ABLE) PROGRAM AT RIKERS ISLAND (July 2015), available at <http://www.mdrc.org/news/announcement/mdrc-statement-vera-institute-s-study-adolescent-behavioral-learning-experience>; see also James Anderson & Andrea Phillips, *Op-Ed: What We Learned from the Nation's First Social Impact Bond*, HUFFINGTON POST (July 2, 2015), http://www.huffingtonpost.com/james-anderson/what-we-learned-from-the-_1_b_7710272.html.

21. By contrast, under a traditional government procurement approach, the city would have been required to pay the service providers pursuant to the contract terms, regardless of whether the program was successful.

Building on New York's experience with the ABLE program, several jurisdictions have since launched social impact bond programs.²² By the end of 2016, "pay-for-success" projects, primarily social impact bonds, had been launched in eleven states, and local jurisdictions in several other states were exploring this option.²³ Project issue areas include homelessness, child welfare, criminal justice, early childhood development, behavioral health, and workforce development, among others.

Among the more notable of these programs was the Massachusetts Juvenile Justice Pay for Success Initiative, which was launched by the Commonwealth of Massachusetts in January 2014.²⁴ Like the ABLE program, Massachusetts addressed recidivism among young, male offenders. A tripartite agreement was executed on January 7, 2014, between the Commonwealth of Massachusetts, Roca, Inc. (the service provider), and Third Sector Capital Partners (the project manager).²⁵ Several commercial and philanthropic lenders, including the Goldman Sachs Social Impact Fund as the senior lender, provided the up-front funding for the services.²⁶ This was the first time that a state had used a competitive procurement to select the project manager and services manager under the social impact bond model.²⁷ As of late 2016, the \$27 million that Massachusetts will make available in "success payments" over the seven-year project is the largest financial investment of its type.²⁸ Massachusetts made its first payments under the program in May 2015.²⁹

Along with the expansion of social impact bonds across the United States at the state and local levels, the federal government has continued to study their use. The Office of Management and Budget has encouraged federal

22. Although the ABLE program was a trailblazer in the United States, it involved political actors, namely Bloomberg Philanthropies, which put it in a unique position to succeed. The subsequent programs have tested this model under circumstances without similar forces at play. See Pay for Success U.S. Activity Map, NONPROFIT FINANCE FUND, <http://www.payforsuccess.org/pay-success-deals-united-states>.

23. *See id.*

24. *See FACT SHEET: The Massachusetts Juvenile Justice Pay for Success Initiative*, NONPROFIT FINANCE FUND, <http://www.goldmansachs.com/our-thinking/trends-in-our-business/massachusetts-social-impact-bond/MA-juvenile-justice-pay-for-success-initiative.pdf>.

25. Third Sector formed a subsidiary supporting organization, Youth Services, Inc., to serve as the legal entity for performing the project. *Id.*; see also *Pay for Success Contract among the Commonwealth of Massachusetts, Roca, Inc., and Youth Services Inc.*, *supra* note 11.

26. *FACT SHEET: The Massachusetts Juvenile Justice Pay for Success Initiative*, *supra* note 24. The U.S. Department of Labor made a "first-of-its-kind" grant of \$11.7 million grant to Massachusetts to make success payments under this agreement. *See id.*

27. *See COMMONWEALTH OF MASSACHUSETTS, MASSACHUSETTS RFR 2012*, available at <http://www.payforsuccess.org/opportunity/massachusetts-rfr-2012>.

28. *See FACT SHEET: The Massachusetts Juvenile Justice Pay for Success Initiative*, *supra* note 24.

29. *See U.S. GOVERNMENT ACCOUNTABILITY OFFICE, PAY FOR SUCCESS: COLLABORATION AMONG FEDERAL AGENCIES WOULD BE HELPFUL AS GOVERNMENTS EXPLORE NEW FINANCING MECHANISMS*, GAO-15-646 at 13 (Sept. 2015), available at <http://www.gao.gov/assets/680/672363.pdf>.

agencies to explore the use of pay-for-success contracts, including social impact bonds, “where appropriate,” and at least four federal agencies have awarded pay-for-success grants or are developing such proposals.³⁰ Although there is currently no formal, government-wide program, President Obama proposed the establishment of a \$300 million fund to expand the federal government’s role in supporting state and local pay-for-success initiatives.³¹ Members of Congress have also introduced legislation to expand federal support for these projects.³² Given President Trump’s campaign promise to significantly increase infrastructure spending—relying, in particular, on “new private infrastructure investments”—it is conceivable that social impact bonds will play a broader role at the federal level during his administration.³³

D. USE AS AN INTERNATIONAL DEVELOPMENT TOOL

While the popularity of social impact bonds has grown most rapidly in the United States, the model was first implemented in the United Kingdom and has since been used in several European countries.³⁴ The social impact bond model has also been proposed as a new means of providing assistance to developing countries in service of the world’s poorest people. Referred to as “development impact bonds” in this context, this financing mechanism operates in largely the same manner, except that the (local) government payor is typically replaced by a foundation or foreign donor government.³⁵

In the international development setting in particular, impact bonds have the potential to be a powerful tool to stimulate public and private donor organizations that seek a clear link between funding and results. Given the political scrutiny that foreign assistance faces in many developed countries, the development bond model can demonstrate aid effectiveness using quantifiable metrics. This focus on rigorous measurement, and learning

30. See *id.* at 5.

31. See *id.* at 2.

32. *Id.* (citing Social Impact Partnership Act, H.R. 1336, 114th Cong. (2015); Social Impact Partnership Act, S. 1089, 114th Cong. (2015); Social Impact Bond Act, H.R. 4885, 113th Cong. (2014); Pay for Performance Act, S. 2691, 113th Cong. (2014)).

33. See Melanie Zanona, *Ryan offers picture of public-private spending in Trump’s infrastructure plan*, THE HILL (Jan. 19, 2017), <http://thehill.com/policy/transportation/315110-ryan-offers-picture-of-private-public-spending-in-trumps-infrastructure>.

34. See Emma Disley, Chris Giacomantonio, Kristy Kruithof and Megan Sim, *The payment by results Social Impact Bond pilot at HMP Peterborough: final process evaluation report*, RAND EUROPE REPORT TO THE U.K. MINISTRY OF JUSTICE, 2015, available at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/486512/social-impact-bond-pilot-peterborough-report.pdf.

35. See generally Adva Saldinger, *Have development impact bonds moved beyond the hype?* DEVEX (July 8, 2016), <https://www.devex.com/news/have-development-impact-bonds-moved-beyond-the-hype-88372>.

from past interventions, also has the potential to provide important “lessons learned” to the entire international development community.³⁶

E. THE FUTURE OF SOCIAL IMPACT BONDS

While social impact bonds have grown in popularity in recent years, their continued growth will depend on overcoming certain challenges. Most importantly, they require pinpointing outcomes that can be linked to a service and are susceptible to objective measurement. To date, a small number of social services have been identified that can attract investor interest. Many social problems are simply too complex or cannot meet the need for near-term results. Although the risk-shifting that is inherent in this mechanism is beneficial to governments, private sector investors may lack mandates to provide social impact funding. As a result, many commercial investors are unwilling to take the financial risk in exchange for a minimal return on investment.

In addition, at the outset of a project it can be challenging to draft requirements and evaluation methodologies that will adequately gauge the effectiveness of the services, particularly when the services are innovative and previously untested. The lack of properly-defined requirements can create ambiguity or inconsistent results, even if the services are otherwise successfully implemented. It can also be costly and labor-intensive to negotiate and draft the large number of agreements that constitute a social impact bond. It can take months, if not years, to properly develop and structure the necessary business arrangements. As a result, the process requires considerable resolve and commitment from all sides to reach a final agreement.

Despite these challenges, social impact bonds offer an attractive financing option for government services. By sustaining a focus on performance and preventative services, social impact bonds may lead to significant advances in how these services are delivered and measured. While they may not be appropriate for all projects, it is likely that—as more projects are implemented—the cumulative results will provide a better model for what works.

36. Of course, the impact bond model faces additional challenges in the developing world. Impact bonds are significantly more complex than standard development instruments and the time and expense of setting up an impact bond may not be justified based on the project scope. In addition, language barriers and the limited number of actors in the development industry, as well as political and legal constraints in host countries, pose potential challenges. See A. Saldinger, *supra* note 35.

III. Evolving Country of Origin Rules for Software Could Have Significant Consequences for United States Government Vendors

The U.S. Government purchases approximately \$6 billion of software each year.³⁷ Federal acquisition laws limit government agencies to purchasing software for which the country of origin is the United States or a “designated country” under the Trade Agreements Act.³⁸ This rule makes products originating in certain software-development hotbeds like Hyderabad, India ineligible for sale to United States government agencies.

However, recent country of origin determinations issued by the United States Bureau of Customs and Border Protection (Customs) have clarified that the location where code is *compiled* is the country of origin for government procurement purposes, regardless of where the code is initially developed. These determinations provide reasons to believe that software manufacturers may leverage lower-cost development work in non-“designated countries” without jeopardizing access to the United States government market.³⁹

The Federal Acquisition Regulation (FAR) implements a number of policies and statutes that observe preferences for goods manufactured in the United States or in countries with which the United States has favorable trade relations.⁴⁰ The FAR implements the Buy American Act (BAA), which establishes a preference for domestic items, *i.e.*, items for which the country of origin is the United States. Federal agencies must purchase only domestic products unless a BAA exception applies.⁴¹

37. See OMB Memorandum M-16-12, *Category Management Policy 16-1: Improving the Acquisition and Management of Common Information Technology: Software Licensing*, June 2, 2016, at 1, available at <https://www.actiac.org/omb-memorandum-m-16-121-category-management-policy-16-1-improving-acquisition-and-management-common>.

38. See Trade Agreements Act of 1979 (19 U.S.C. 2513).

39. Certainly, this assurance could be undermined by further evolution of Customs’ country of origin jurisprudence.

40. See generally 48 C.F.R. pt. 25.

41. See 48 C.F.R. § 25.001(a)(1). The BAA also does not apply if “the contracting officer determines that the price of the lowest domestic offer is unreasonable.” *Id.* There is also an exception to BAA requirements for commercial information technology, such as software. 48 C.F.R. § 25.103(e). Ostensibly, if commercial information technology is exempt from the BAA country of origin restrictions, and the TAA just provides another exception to the BAA, then the information technology exception would seem to be dispositive – *i.e.*, if a contracting officer is not required to purchase domestic items, then a rule partially prohibiting discrimination against non-domestic items would seem not to apply. Contrary to this logic, U.S. Government agencies universally assume that they may only purchase supplies with a U.S. or “designated country” origin in procurements covered by the TAA. See Jeffrey A. Belkin & Donald G. Brown, *The Buy American Act information technology exception: Should it apply to the Trade Agreement Act-covered contracts?* 24:6 WESTLAW J. GOV’T CONTRACT, July 26, 2010, available at <http://www.alston.com/Files/Publication/def44ccb-05d6-4184-8639>. In addition, while TAA requirements typically do not apply unless the value of a procurement meets a certain threshold—\$204,000 as of late 2016, 48 C.F.R. § 25.402(b)—agencies generally assume smaller purchases are subject to TAA limitations based on the overall value of the contract vehicles under which they are

The Trade Agreements Act (TAA) establishes the main exception to the BAA's domestic item requirement. For procurements that meet specific minimum dollar value thresholds, agencies may purchase either domestic items or items with TAA "designated country" of origin and may not discriminate in favor of domestic items.⁴² Practically speaking, commercial software vendors who wish to sell even a modest volume of products to the U.S. Government must offer products with TAA-compliant countries of origin.

In some cases, the country of origin of a product is clear, because it was manufactured entirely within a particular country. In other cases, where different parts of the manufacturing process occur in different countries, the "substantial transformation" test governs the country of origin. Under the "substantial transformation" test, the country of origin is the location where the components of an item underwent the change, or the changes, which caused them to become an end item with a new "name, character, or use."⁴³ Parties that are unsure about a product's country of origin may seek a ruling from Customs, which has authority to issue binding country of origin rulings for purposes of U.S. Government procurement contracts.⁴⁴ Recent Customs rulings on the origin of software have further defined these requirements.

Individual software products are usually developed in multiple jurisdictions and over a long period of time, as bits and pieces of code are repurposed for use in new products and cross-border teams of coders work together to develop and improve products. Prior to 2012, there was very limited guidance for determining the country of origin of software. In 2012, however, Customs issued a non-binding advisory ruling on the topic, identifying seven stages of software development: (1) research; (2) development of a graphical user interface; (3) development and writing of software specifications and architecture; (4) programming of source code; (5) software build; (6) testing and validation; and (7) preparation of the software for distribution (burning the software onto server media from which it will be downloaded when purchased).⁴⁵ Customs explained that the "software build" is "the process of methodically converting source code files into standalone lines, routines and subroutines of software object code files into standalone lines, routines and subroutines of software object code that can be run by a computer"⁴⁶ and concluded that the software build substantially

purchased. *Id.* These factors combine to render wide swaths of software procurements subject to TAA "designated country" origin restrictions.

42. See 48 C.F.R. § 25.502(b)(1).

43. See 48 C.F.R. § 25.001(c)(2).

44. 19 C.F.R. pt. 177, subpt. B.

45. U.S. CUSTOMS AND BORDER PROTECTION, FINAL DETERMINATION HQ H192146 (June 8, 2012), available at <http://www.steptoe.com/assets/html/documents/Talend.pdf>.

46. See generally Daniel S. Lin, Matthew Sag & Ronald S. Laurie, *Source Code versus Object Code: Patent Implications for the Open Source Community*, 18 SANTA CLARA HIGH TECH. L. J. 235, 238 (2002) (Discussing the differences between source code and object code: "Source code has been described as a computer program written in a high level human readable language. In contrast, the related object code is the same computer program written in computer readable

transformed the software into an end item with a different character and use than its predecessor components. Thus, wherever the “software build” process occurs is the country of origin, regardless of where the source code was developed.⁴⁷

In early 2016, a binding customs ruling further clarified and affirmed a rule that the location where source code is compiled into object code is the country of origin. In that case, Customs ruled that source code developed in Malaysia (not a “designated country” under the TAA) by a Malaysia-based firm called e-Lock was substantially transformed when it was compiled into usable object code in the United States.⁴⁸ The final software product in that case was a U.S.-origin item, despite the fact that *all* of the source code was developed in Malaysia. The e-Lock determination solidified the principle that compilation of source code into object code constitutes substantial transformation.

A primary reason companies outsource software development is to reduce costs. A number of jurisdictions in which software development is especially affordable, like India and Malaysia, are not “designated countries” under the TAA. The recent Customs determination concerning e-Lock gives software vendors greater assurance that they may outsource software development to non-“designated countries” without jeopardizing their ability to meet country of origin requirements for United States government contractors.

IV. Advanced Biofuels: American and Japanese Perspectives

As the earth’s temperature continues to rise, with potentially dire consequences, governments around the world have begun to take steps to combat climate change. These steps include initiatives to encourage renewable or alternative energy, both in the form of statutes and regulations, as well as through grants and contracts.⁴⁹ The United States and Japan are two notable “super economies” that have focused on developing alternative energy.⁵⁰ This section will review recent developments in each country’s renewable fuel economy.

format, which is required for the program’s execution by a computer. One important difference between source code and object code is that source code is generally platform-independent, meaning that it does not refer to the intricacies of any particular type of computer. In contrast, object code is platform-specific and must necessarily refer to the inner workings of the particular computer.”).

47. U.S. CUSTOMS AND BORDER PROTECTION, FINAL DETERMINATION HQ H192146 (June 8, 2012), available at <http://www.steptoe.com/assets/html/documents/Talend.pdf>.

48. See 81 Fed. Reg. 8733, 8735 (Feb. 22, 2016) (discussing Final Determination HQ H268858, Feb. 12, 2016).

49. See Collin O’Mara, *Climate Prosperity: A New Way of Thinking Forging A Responsible Environmental Policy Can Offer Big Economic Benefits*, DEL. LAW, Summer 2009, at 14; see also Peter M. Goodloe, *Simplification-A Federal Legislative Perspective*, 105 DICK. L. REV. 247 (2001).

50. See Jim Lane, *Biofuels Mandates Around the World: 2016*, BIOFUELDIGEST (Jan. 3, 2006), <http://www.biofuelsdigest.com/bdigest/2016/01/03/biofuels-mandates-around-the-world-2016/>.

A. ADVANCED BIOFUELS IN THE UNITED STATES

The U.S. Government has expended considerable political energy to foster the alternative fuel sector and has established a mandate-driven alternative fuel economy.⁵¹ The EPA is required to set an annual standard (*i.e.*, usage requirement) for cellulosic biofuels⁵² under the Renewable Fuel Standard if the “projected volume of cellulosic biofuel production is less than the volume specified in the statute (*i.e.*, the mandate).”⁵³ Under these standards, there has been a continued increase of mandated cellulosic biofuels, including a notable jump in fiscal year 2016.⁵⁴ The system is dependent on sufficient production of each fuel to meet the mandated volume requirements, which has been highly problematic.⁵⁵

To jump-start the production of biofuel, the U.S. Government has awarded contracts and grants to assist in the development of the industry. Notably, funding has come from several agencies, including the EPA and the Department of Agriculture (USDA), as well as the Departments of the Navy, Transportation, Treasury, and Energy. To encourage cellulosic biofuel production, the Department of Energy’s Loan Guarantee Program,⁵⁶ the USDA Biorefinery Renewable Chemical Program, and Biobased Manufacturing Assistance Program,⁵⁷ as well as various tax incentives, have been implemented to assist in the research, development, development and deployment of cellulosic biofuels.

B. ADVANCED BIOFUELS IN JAPAN

Like the U.S. Government, the Government of Japan (GOJ) has a keen interest in developing and promoting alternative energy sources, especially cellulosic biofuels. During its industrialization after World War II, Japan’s primary energy use shifted from coal to hydrocarbons, which were mostly

51. Energy Independence and Security Act (“the EISA”), Pub. L. No. 110–140, §§ 201–04, 121 Stat. 1492 (codified as amended at 42 U.S.C. § 7545(o)) (Supp. II 2008) (the implanting policies will be referred to as the Renewable Fuel Standard (“RFS”)).

52. In the United States, cellulosic biofuels are statutorily defined as a “renewable fuel derived from any cellulose, hemi-cellulose, or lignin that is derived from renewable biomass and that has lifecycle greenhouse gas emissions, as determined by the [Environmental Protection Agency (EPA)].” Kelsi Bracmort, *The Renewable Fuel Standard (RFS): Cellulosic Biofuels*, CONGRESSIONAL RESEARCH SERVICE, Report R41106, Aug. 31, 2015, at 6.

53. See *id.* at 5.

54. *Final Renewable Fuel Standards for 2017, and the Biomass-Based Diesel Volume for 2018*, available at www.epa.gov; see also Final Rule: Renewable Fuel Standard Program: Standards for 2017 and Biomass-Based Diesel Volume for 2018, 40 C.F.R. § 80.1405, amend. 40 C.F.R. pt. 80.

55. See Bracmort, *supra* note 63, for a comprehensive overview of the changes that have occurred since EISA’s enactment.

56. The program was first created from the Energy Policy Act of 2005, 42 U.S.C. § 16513 (2005).

57. See Lynn J. Cunningham, Beth A. Roberts, Bill Canis, and Brent D. Yacobucci, *Alternative Fuel and Advanced Vehicle Technology Incentives: A Summary of Federal Programs*, CONGRESSIONAL RESEARCH SERVICE, Report R42566, Jan. 10, 2013, at 20–21.

imported.⁵⁸ In 2012, Japan was second only to China among the largest net importers of fossil fuels worldwide⁵⁹ and, as of November 2016, Japan needed to import approximately 84 percent of its energy requirements.⁶⁰ Although nuclear energy production had been a GOJ strategic priority since 1973, seismic forces have rendered nuclear energy an unreliable fuel source. Nuclear power provided 30 percent of Japan's electricity as of early 2011, and was projected to provide 40 percent by 2017,⁶¹ but consequences of the March 2011 Tohoku earthquake and tsunami have made for a rocky interim. As of September 2016, Japan was receiving only 1 percent of its energy from nuclear power.⁶²

Cellulosic biofuels, however, are poised to ease Japan's energy burdens with little to no apparent political cost. Because their sources do not compete as fiercely with food crops as first-generation biofuels, advanced biofuels are especially attractive to GOJ. The Japanese public is largely suspicious of using farmland for energy production,⁶³ as Japan has a dearth of agricultural and arable land compared to many other industrialized countries. Based on total calories consumed, Japan now imports approximately 60 percent of its food annually.⁶⁴ Unsurprisingly, Japan was among the first countries to invest in advanced biofuel technology and production. In 2007, it began operating the first commercial wood-to-ethanol plant, which had a capacity of 1.4 million liters per year.⁶⁵ Japan remains focused on researching and promoting biofuel sources that do not

58. See VACLAV SMIL, ENERGY TRANSITIONS: HISTORY, REQUIREMENTS, PROSPECTS 93 (Praeger Publishers, 2010)

59. U.S. ENERGY INFORMATION ADMINISTRATION, TODAY IN ENERGY: JAPAN IS THE SECOND LARGEST NET IMPORTER OF FOSSIL FUELS IN THE WORLD (Nov. 7, 2013), available at <http://www.eia.gov/todayinenergy/detail.php?id=13711>.

60. See WORLD NUCLEAR ASSOCIATION, NUCLEAR POWER IN JAPAN, available at <http://www.world-nuclear.org/information-library/country-profiles/countries-g-n/japan-nuclear-power.aspx>.

61. *Id.*

62. Mayumi Negishi, *Japan's Shift to Renewable Energy Loses Power*, THE WALL STREET JOURNAL, Sept. 14, 2016, <http://www.wsj.com/articles/japans-shift-to-renewable-energy-loses-power-1473818581>.

63. See USDA FOREIGN AGRICULTURAL SERVICE, MARKET FOR LIQUID TRANSPORT BIOFUELS REMAINS STEADY AS JAPAN REMAINS FOCUSED ON ADVANCED FUELS (Aug. 1, 2016), available at http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Biofuels%20Annual_Tokyo_Japan_8-26-2016.pdf.

64. See USDA ECONOMIC RESEARCH SERVICE, JAPAN/TRADE, available at <https://ers.usda.gov/topics/international-markets-trade/countries-regions/japan/trade/>.

65. Renewable Energy Policy Network for the 21st Century, *Renewables 2007: Global Status Report* at 19 (2008), available at <http://www.worldwatch.org/files/pdf/renewables2007.pdf>.

compete with food production,⁶⁶ and Japanese universities and research institutions are expected to expend significant resources to make advances.⁶⁷

In Japan, the terms of resource procurements are generally negotiated between private parties, with the government's role being mainly facilitative. GOJ's 2014 five-year Strategic Energy Plan envisions the government becoming even more involved in encouraging private negotiation and collaboration in this sector, and states as follows:

GOJ needs to improve the environment that enables discussions on diversification of terms and conditions of transactions, such as the pricing mechanisms and destination clauses. They also need to support strategic efforts to procure stable and competitive resources, including strengthening the bargaining power through the strategic use of new joint procurement schemes.

Specifically, communications between energy producers and consuming nations will be facilitated and collaboration between consuming nations will be strengthened by providing many opportunities for international dialogue, such as the LNG Producer-Consumer Conference, and Japan-South Korea Gas Dialogue.⁶⁸

As GOJ hoped, private actors have engaged in discussions. In July of 2015, the Initiative for Next Generation Aviation Fuels, a consortium of forty-six organizations (including Boeing, All Nippon Airways, Japan Airlines, the University of Tokyo, and GOJ), announced a five-year roadmap to both hasten and increase the use of advanced biofuels in anticipation of the 2020 Tokyo Summer Olympic and Paralympic Games.⁶⁹ The roadmap includes a section for future discussion items, including a consideration of costs, the business promotion framework, issues in business implementation, and guidance for dispute resolution.⁷⁰

In conclusion, it is evident that the United States' and Japan's governments have differing approaches to the development of the renewable

66. USDA FOREIGN AGRICULTURAL SERVICE, MARKET FOR LIQUID TRANSPORT BIOFUELS REMAINS STEADY AS JAPAN REMAINS FOCUSED ON ADVANCED FUELS (Aug. 1, 2016), available at http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Biofuels%20Annual_Tokyo_Japan_8-26-2016.pdf.

67. *Id.* Of special interest are algal cellulosic sources for jet fuel. A Tokyo venture firm that owns a farm in Okinawa hopes to produce as much as 125 million liters of algal biomass-based jet fuel annually by 2020.

68. JAPANESE MINISTRY OF ECONOMY, TRADE, AND INDUSTRY, STRATEGIC ENERGY PLAN (Provisional Translation) at 33 (Apr. 2014), available at http://www.enecho.meti.go.jp/en/category/others/basic_plan/pdf/4th_strategic_energy_plan.pdf.

69. See The Boeing Company, *Boeing, Japanese Aviation Industry Unveil Biofuel 'Roadmap' to 2020 Olympics*, (July 8, 2015), <http://boeing.mediaroom.com/2015-07-08-Boeing-Japanese-Aviation-Industry-Unveil-Biofuel-Roadmap-to-2020-Olympics> (citing Initiatives for Next Generation Aviation Fuels, *Roadmap for Establishing Supply Chain for Next-Generation Aviation Fuels*, July 2015, available at http://aviation.u-tokyo.ac.jp/inaf/roadmap_en.pdf) [hereinafter Roadmap].

70. See Roadmap, *supra* note 69, at 44–47.

energy industry. The United States, on one side, has annual mandates that require production volumes by certain dates, and GOJ, on the other side, provides no deadlines or definitive numbers, acting merely as an active observer and facilitator in the economics of the industry. Especially considering changing political climates, only time will tell which approach will achieve the best result.⁷¹

71. See Steven Mufson, *EPA sets new biofuel targets. Troubled program could end up on Trump's chopping block*, WASH. POST (Nov. 23, 2016), https://www.washingtonpost.com/news/energy-environment/wp/2016/11/23/epa-sets-new-biofuel-targets-troubled-program-could-end-up-on-trumps-chopping-block/?utm_term=.fa9bcd8085cf.

