

# Federal Public-Private Partnerships:

## The Basics of Finance and Why This Is Important to You

by

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# Federal Public-Private Partnerships

## The Basics of Finance and Why This Is Important to You

### Introduction

Across the globe and at many levels of government, the use of Public-Private Partnerships (P3) is rising. P3s are being implemented across a wide range of industries, including transportation, utilities, healthcare, and real estate. There are many reasons for the increase in P3s. In developing countries, there is a need to build fundamental infrastructure such as electricity grids, water treatment plants, ports, and airports. While the governments have neither the money nor the complicated technical expertise to complete the projects, in many cases, they have the ability to create a long-term cash flow stream from the use of the project—and a *stable, long-term cash flow stream is the key to the financing of a successful P3*.

Similarly, in the US and in developed countries, the need to renew infrastructure is great due to its poor condition or the need to incorporate modern design and technologies. In doing so, the project becomes more efficient to operate and thus more competitive in the region, nation, or across the globe. For example, comparing today's infrastructure to that of the 1950s, ports handle cargo containers differently, airports are bigger and offer more amenities, tollways have more lanes and automated methods of collecting tolls, and the generation of electricity has added renewable technologies such as solar and wind. There are multiple opportunities to recapitalize our nation's infrastructure using modern design, construction, and operational techniques that will result in increased competitiveness for the United States.

The question may arise: What is the fastest, most economical way to upgrade our nation's aging infrastructure? The traditional approach is where the public sector—federal, state, or local government—defines its requirements, issues a request for

proposal, and selects a private company to build or operate the asset. In addition, it is widely known that the federal government's cost of money is less expensive than the private sector's; thus, it might be assumed that the traditional approach would be the most advantageous.

However, governments at all levels—especially the federal government—face budgetary pressures that often delay project funding. Moreover, infrastructure projects are typically complex and large scale, and as such, their total costs are influenced by more than just the government's favorable cost of money. P3s solve these problems by attracting private capital investment, realizing construction and operational cost savings, and aligning risks and rewards. Therefore, on balance, P3s offer an efficient and favorable alternative to effect large-scale infrastructure projects.

### Goals of This Article

The expected growth of federal P3s can be realized only when government leaders create projects that *attract* private investment. These projects are different from traditional government procurements where industry bids on known requirements and money flows from the government to the contractor. Rather, P3 projects are entrepreneurial and involve external stakeholders, with initial monies flowing from private investors into the project. The funding party is central to key decision making. Thus, the government will find itself in the atypical position of persuading industry to invest. To be successful in “selling” a program to the private sector, government officials need to understand the terminology used in these transactions, the metrics the private sector considers most important, and how the building blocks of finance work together to successfully structure P3 projects.

To that end, this article is written primarily for federal sponsors, leaders, and practitioners of P3s. Its purpose is to introduce important financial concepts to those with a limited finance background.

In this article, we will discuss:

- What defines a P3
- The financial imperatives needed to make a P3 successful
- The financial building blocks and ratios that drive go/no-go decisions by the private sector
- How to harmonize all of the financial variables so that the project adapts to the “must haves” by all stakeholders.

We also provide three case studies of completed and operational P3 projects that have proven the concepts in this article can work with perseverance and the right expertise.

## **P3 Overview**

What makes a project a P3? Although there are many descriptions, all P3s involve the public sector and the private sector working together to provide assets or services over a long period of time. While this may not sound different from some traditional models, P3s result when the private and public sectors collaborate in a manner in which risks and responsibilities are shared in non-traditional ways. Successful P3s have elements of investment of private capital, lower construction and operating costs, and increased technical and collaborative expertise. P3s are also characterized and differentiated from traditional government contracts by the following:

- Involvement of more stakeholders
- Investment of capital by the private sector
- A long-term, secure revenue stream
- Increased flexibility for sharing responsibilities and risks.

Federal P3 transactions typically involve a variety of stakeholders. In general, stakeholders can include federal agencies (and their independent strategic

and transaction advisors); state agencies; local government; developers (equity investors); lenders (institutional investors, bondholders, and commercial banks); Engineering, Procurement, and Construction (EPC) contractors; and special interest groups. As an owner’s advisor on a recent project, Booz Allen Hamilton facilitated more than 30 stakeholders.

P3s offer increased financial flexibility, which is often a driving motivation because the government is trying to solve a particular problem. P3 agreements can have the private sector as the responsible party for any combination of risks during an asset’s life cycle—including concept, design, bid, finance, build, operation, and maintenance—whether the private sector owns or leases the asset.

Several P3 programs exist within the federal government. Notable examples include the Military Housing Privatization Initiative, the Transportation Infrastructure Finance and Innovation Act (TIFIA), and the Enhanced Use Lease (EUL) programs of the Department of Veterans Affairs and the Department of Defense (DoD). Each has contributed to the growing federal expertise in P3.

## **The Imperatives of a P3**

The overarching requirement for private investment is the ability to earn a level of return that is commensurate with the perceived risks of the investment. Higher risks translate to the requirement for higher returns, and lower perceived risks translate to requirements for lower returns. A project’s cash flow must be sufficient to cover its expenses and the return requirements for its debt and equity investors, and all of the investor’s risks must be understood and mitigated. In other words, the project is considered to be “bankable.” For federal P3 leaders and infrastructure owners (government sponsors), it is critical to understand this concept and apply the “bankability” test early and often during the project screening process. It is easy to focus on other screening elements of a project such as its technical requirements or stakeholder involvement; however, without money available to make the project a bankable one, the project will never succeed.

## Determining the Bankability of a Project

For large-scale P3s, there are typically multiple private sector investors in both debt and equity categories. For example, the pool of equity may originate from several parties, including the initial equity investor (sponsor equity) and subsequent equity investors who may receive preferred returns. Similarly, debt can comprise multiple investors including senior debt, junior debt, and mezzanine debt. Exhibit 1 illustrates the investors in the order of the riskiness of their investment. The level of risk is related to the order of repayment. Those repaid first face the lowest risk; those repaid last face the highest.

For most P3s, there are multiple parties contributing money, and each party has different concerns or risks they want to mitigate. Furthermore, since federal P3 leaders need to *attract* all of the investors contributing capital, an understanding of their concerns and requirements is critical.

In this light, it should be noted that very few commercial projects, especially infrastructure projects, can earn a sufficiently attractive rate of return for investors when funded 100 percent by equity. Sponsor equity investors often seek to maximize lower costing debt to enhance the returns to equity. Therefore, the concerns of the relatively conservative and risk-adverse lenders often are critical to address in order to attract the requisite level of investment, and this fact should inform the overall terms and conditions of the P3 deal structure.

Sponsor equity investors will be the first to get involved in projects. They are the private investors that bid and are awarded projects. Debt investors are brought in when the equity investors are putting the funding package together. There are a number of different ratios and metrics used by the private sector to measure and gauge the financial desirability of a project. Each investor, whether they are investing equity or debt, will look at the operations of the asset as part of their due diligence (evaluation) process and calculate these ratios that become the basis for a go/no-go decision. Equity investors will focus on the internal rate of return (IRR) and the return on equity (ROE), while debt investors focus on the loan-to-cost ratio and the debt service coverage ratio (DSCR).

### Capital Defined

Since federal leaders are often drawn to P3s as a mechanism to solve a funding deficiency, it is important to understand funding from the private sector's perspective. In P3 projects, the necessary funds to complete the construction are termed the "capital." Capital comprises debt and equity, and each type is described as follows.

#### Debt

Debt is an element of capital that has a relatively low risk tolerance and seeks fixed returns (through the interest rate being charged) rather than based on project profitability. Debt can be in the form of commercial loans, or in the form of a bond issuance to the public or institutional investors. Since debt capital has a low risk appetite, it demands collateral security and priority of payment such that a project's cash flow will be used to pay its current debt payments before returns to equity are made. This means less risk and a demand for a lower return. Therefore, it is a less expensive source of capital than equity.

#### Equity

Equity is the other basic element of capital and differs from debt in that it receives no fixed or guaranteed return, is unsecured, and is subordinated in payment priority to debt. As a result, equity is a riskier investment than debt and requires a higher return. Equity investors typically receive their return from the project's cash flow after payment of expenses and debt. In P3s, equity can be cash invested by project sponsors and other equity partners. It can also be supplemented with grants or other contributions designed to make the project more feasible.

**Exhibit 1** | Risks in the Capital Stack**Ratio Building Blocks**

To calculate these ratios, one must first understand the components or building blocks of each of the respective ratios. First, the investors will consider the project's ability to generate stable and predictable revenues over the life of the project. An example of revenue would be all of the tolls collected during a 1-year time period for a toll road. Investors would want to know the number of vehicles currently using the toll road as well the rate that each vehicle will pay. Understanding the growth projections of the number of vehicles and the toll per vehicle is important for the investors to assess whether the year-by-year revenue projections are reasonable.

The investors will also examine the current and projected operating expenses for reasonableness of their amount and timing. Subtracting cash expenses from revenue results in the *cash flow*, which is one of the building blocks used for ratio analysis and described in the sections that follow.

Another building block for ratio analysis is the debt service of a project. *Debt service* is the combination of the interest and principal payments that must be paid in a given period (month or year) per the loan agreement. As with the payment on a house or car, the debt service goes up if the interest rate is high and/or the repayment term (number of years) is less. *Cash flow to equity* is the cash flow minus the debt service.

Only after annual project expenses and debt service are paid is a "return" to equity possible.

The last major building blocks are the *equity investment* and the *total investment*. Equity investment is the total equity required for the project; total investment is the total debt and equity required for the project.

**Ratios****IRR**

The first calculation that investors will consider for a project is the IRR. It measures the return that a project can generate for the investment. This calculation is made using the projects' total investment and the cash flow generated over the life of the project, taking into account the time value of money.

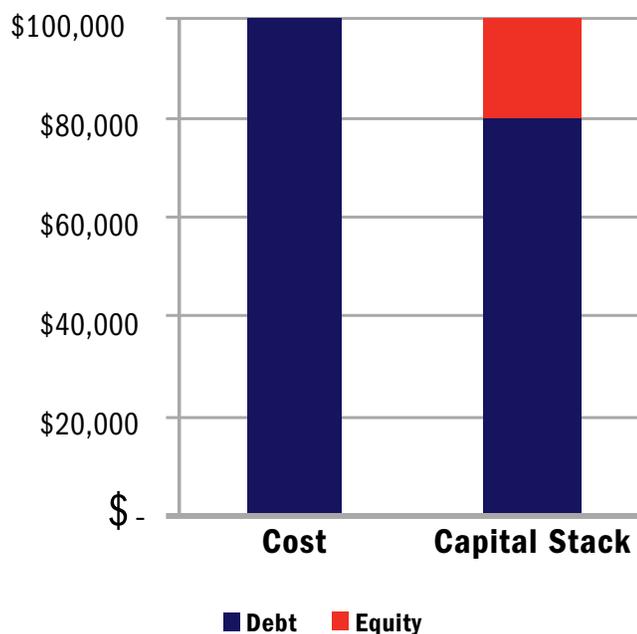
**ROE**

To calculate the returns to equity investors and understand the risks, a ROE ratio is typically used and shown in very basic terms as follows. As stated previously, periodic cash distributions to equity are only possible after project expenses and debt service for each respective period are paid. The remaining cash flow to equity is then compared to the equity investment:

$$\frac{\text{CASH FLOW TO EQUITY}}{\text{EQUITY INVESTMENT}} = \text{ROE}$$

**Loan-to-Cost Ratio**

The loan-to-cost ratio can be visualized in a *capital stack*, which simply refers to the proportion of debt and equity that is pooled together for the purpose of acquiring/constructing the asset. For example, in the purchase of a house, the amount of debt and equity equals the cost of the house, as illustrated in Exhibit 2. In Exhibit 2, the debt is \$80,000, which results in a loan-to-cost ratio of 80 percent.

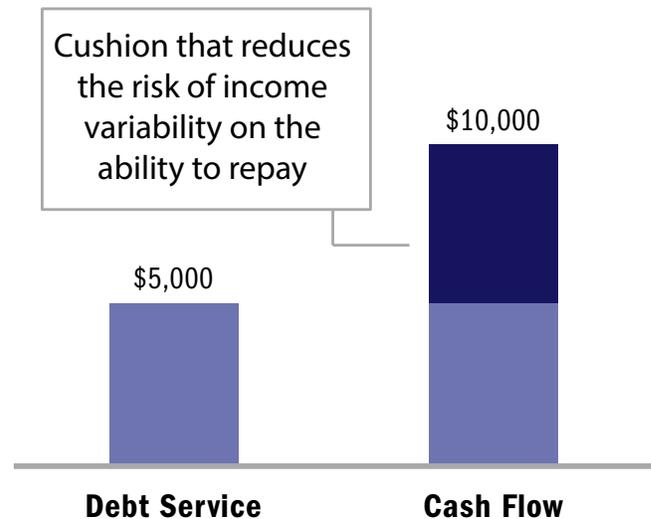
**Exhibit 2** | Cost and Capital Relationship**DSCR**

Lenders are concerned about the stability and sufficiency of cash flow from the project to cover their debt payments, and the DSCR helps with this assessment. The DSCR for any given period (usually annually) measures the ratio of cash flow available to pay the debt service, divided by that debt service (see Exhibit 3).

Lenders want a cushion of extra cash flow so they have some certainty that there is always enough money to pay the debt service. This example, which assumes a DSCR of 2 ( $\$10,000/\$5,000$ ), shows that a person/

**Exhibit 3** | A Key Measuring Stick: the Debt Service Coverage Ratio

## Debt Service Coverage Ratio of 2



entity could experience a reduction in cash flow and still have the capability to continue making their payments to the lenders.

**Getting to Yes**

The preceding section provides the basics of how to calculate the key ratios. The following sections discuss:

- The goals of project structuring and financing
- The risks and how to mitigate them
- How these building blocks and ratios work together.

Just as pushing on one end of a balloon causes the other end to expand, the financial variables of project cost, revenues, expenses, debt and equity proportions, interest rates, and repayment periods all have a cause-and-effect relationship. Thus, each can be adjusted, but all must be harmonized to achieve the project goals, which is the result of “getting to yes.”

As P3 projects are screened and analyzed, two fundamental questions typically surface:

1. How much money can be borrowed to fund the project?
2. How much money does the asset have to generate to pay back the debt?

Federal P3 leaders should recognize that while question 1 typically surfaces early in the government's project screening process, both questions are integrated. Together, they are an example of the cause-and-effect relationship that must be balanced to achieve the goals of the project.

### Goals of Efficient Project Structuring and Financing

Efficient P3 project structures seek to obtain a win/win solution to the capital stack, which can accomplish three objectives:

1. **Maximize the number of years for repayment.** The benefit of longer term loans is that the principal repayments are spread over more years, and thus the size of the annual debt service is lower. To have a long-term repayment period (e.g., 15 to 30 years), a favorable environment for longer term loans must exist—the P3 structure must provide for a long-term, predictable stream of revenue.
2. **Minimize the interest rate.** The benefit of a lower interest rate is lower annual debt service payments and lower interest costs borne by the project. To achieve this objective, P3 structures should incorporate solutions to reduce lenders' real and perceived risk concerns and to accommodate their risk appetites, and use industry best practices for contracts and collateral security rights that are transparent and "lender friendly." When credit rating agencies or internal bank credit committees are able to rate project credit risk lower, then interest rates will be lower too.
3. **Minimize the requirement for a high DSCR.** The benefit of this objective is achieving a higher level of debt, and thus minimizing the equity component of the capital stack. The key to gaining

lender acceptance of a relatively low DSCR is demonstrating long-term stability of the cash flow. The importance of the perceived stability of cash flows cannot be overstated. P3 structures that provide a level of certainty as to a stable minimum level of expected cash flow provide comfort to lenders, which will in turn allow them to accept a lower DSCR. The difference between a group of lenders accepting a DSCR requirement of 1.2 versus 1.8, for instance, means the possibility for an up to 50 percent increase in the level of debt, all other things being equal. This single factor of the required DSCR level often results in a project moving forward or halting because it is financially infeasible.

The result of efficient P3 project and financing structures will be a significantly higher level of bidders attracted to a given P3 opportunity. More private sector bidders will ultimately provide more options, greater solutions, and best value to the federal government.

### Appreciating Risks

For federal and private sector P3 leaders to achieve these goals—and get to yes—all parties need to understand the risks involved, not only from their own perspective but also from the other parties' perspective. This appreciation of the risks will enable a project structure that allows the most suitable party to shoulder each risk. Thus, as risks are carried by the party with the lowest cost of mitigating the risk, employing this strategy across each risk category will result in an optimally structured project that provides the greatest scope and the lowest cost to project stakeholders. Exhibit 4 lists the key risk categories.

While much could be written on each of these risk categories, the key take-away point is that federal P3 leaders should be prepared for detailed risk discussions. If the government enters into a transaction with the goal of transferring every risk to the private sector, it will likely overpay, receive less construction, or otherwise receive a sub-optimized deal. The government's real goal should be a thoughtful sharing of risks so that the greatest overall benefits are received.

## Exhibit 4 | Key Risk Categories

| Risk Category                                     | Comments  |
|---|---|
| <b>Market Demand/<br/>Repayment Risk</b>          | <p>For lenders to offer the best financing terms, the risks related to the revenue of the project must be understood. In other words, how certain is the project's revenue? If the revenue stream is based upon user fees, is the market demand strongly supported, and what is the approval process to adjust the fee? This is where the government's desire for control must be balanced with the amount of risk it is shifting to the private sector.</p>  |
| <b>Project Development/<br/>Construction Risk</b> | <p>The development and construction risks are largely driven by potential changes in scope and who is responsible for the resulting changes in the cost. Other considerations in this category include the quality of the construction management, the price risk of construction materials and labor, as well as penalties or bonuses for meeting construction deadlines.</p>  |
| <b>Interest Rate Risk</b>                         | <p>The interest rate is the cost of borrowing money, and is directly related to the project's perceived risk by the lender. Interest rates are comprised of the market cost of funds and a lender risk premium. The risk premium is one of the lender's tools to be compensated for the risks it assumes, and federal P3 leaders should seek to mitigate risks wherever possible, since this action will result in lower interest rates. For example, <i>loan guarantees</i> or commitments to certain levels of demand mitigate the risk of nonpayment, and the government should evaluate these options with the goal of achieving the best overall deal. Interest rates also vary in relation to the length of the repayment term; longer terms are riskier and result in a higher interest rate. Since P3 projects involve long-life assets, the desire is to have the debt payments made over the life of the asset. Thus, the goals of low interest rate and long repayment terms conflict and must be balanced.</p> <p>An additional aspect of interest rate risk for infrastructure projects, with long construction periods, includes the risk that market interest rates will rise from the time of the initial lender commitment to the time of the lenders' disbursements of the loan. This risk is market based and external to the project's expected cash flow. Thus, financial advisors are needed to evaluate various interest rate risk management tools for both commercial loans and bond issues.</p> |
| <b>Operating Risk</b>                             | <p>Since P3 projects are typically long term, the risks of day-to-day operations must be balanced for the situation. For example, the parties must decide who takes the risk that expenses will increase beyond projections.</p>  |

**Harmonizing the Variables**

Exhibit 5 discusses the impact that key debt variables have on the building block of debt service. By understanding these relationships, it helps the project leaders reach the goal they are seeking: “Yes, the project is bankable.”

Typically, the financial goals of the project are to maximize debt funding (reducing the necessary equity) while minimizing the debt service payments. Since these two goals compete with each other, the overarching goal should be to remove inefficiencies, such as unnecessary risk and longer construction

periods, and focus on construction and operating practices that produce the lowest life-cycle cost to the asset.

Another set of relationships exists for cash flow, as illustrated in Exhibit 6.

As P3 projects are executed, the real “art of the deal” is a collaborative discussion among the parties to synchronize all of these variables such that the project is bankable and each party accepts the risks it can reasonably bear.

**Exhibit 5** | Relationships of Debt Service Variables

| Debt Variables             | Variable Direction | Debt Service Direction | Comments   |
|----------------------------|--------------------|------------------------|--|
| <b>Cost of the Project</b> | ↑                  | ↑                      | The project cost can be affected by changes in the scope, construction costs, and time to complete. The higher the cost of the project, the greater the level of debt, assuming a given debt/equity ratio in the capital stack, and thus a higher level of debt service. |
| <b>Debt Amount</b>         | ↑                  | ↑                      | The debt amount is influenced by the cost and the debt/equity ratio chosen. The difference between the total project cost and the level of debt is the required equity. The higher the level of debt, the higher the debt service.                                       |
| <b>Interest Rate</b>       | ↑                  | ↑                      | The interest rate is a market-driven rate influenced by the cost of funding, the length of repayment period and the perceived risk of the project. Since interest is one component of debt service, the higher the interest rate, the higher the debt service.           |
| <b>Repayment Period</b>    | ↑                  | ↓                      | The repayment period has a substantial impact on the level of debt service as longer repayment periods reduce the amount of principal that needs to be paid in any given repayment period. Lenders typically want the repayment period to be shorter than borrowers.     |

**Exhibit 6** | Relationship of Cash Flow Variables

| Income Variables | Variable Direction | Cash Flow Direction | Comments  |
|------------------|--------------------|---------------------|---|
| User Demand      | ↑                  | ↑                   | User demand could be the number of cars on a tollway, the number of barges through a lock, the number of square feet of building space occupied, or any other measure of the productivity of the asset. |
| User Fee         | ↑                  | ↑                   | The user fee is the per-unit charge associated with each unit of demand. For example, \$2 per car for a segment of tollway.   |
| Expenses         | ↑                  | ↓                   | The expenses include all costs associated with the operations of the asset so that the revenue production will remain consistent over time.   |

## Case Examples

To illustrate some of these financial concepts, we considered three completed P3 projects that have proven to be successful. These case studies are Genesis Solar, Fort Detrick Central Utility Plant, and Virginia Midtown and Downtown Tunnels.

### Genesis Solar

#### Challenge

As of 2009, California electric utilities were faced with meeting a fast-approaching Renewable Portfolio Standard mandate for acquiring renewable energy equal to 20 percent of their total load. (In 2011, that requirement became the most stringent in the United States when it was set to 33 percent by 2020.) As a result, the major California utilities had begun an aggressive campaign to leverage the abilities of private power developers that could quickly finance, design, build, own, and operate very large-scale renewable energy generation facilities to supply them with this needed energy. Meanwhile, one major obstacle to that plan was that the US capital markets were, at the time, reeling from the impact of the worst recession

since the Great Depression, and developers were having difficulty obtaining adequate financing for large infrastructure projects requiring long-term debt in amounts within the \$500 million to \$1 billion range.

In late 2009, the Department of Energy (DOE) announced the Financial Institutions Partnership Program (FIPP), administered by its Loan Programs Office. FIPP had an objective to promote renewable energy generation projects by leveraging both private sector lending and equity. In a FIPP financing, DOE offered to guarantee up to 80 percent of a loan with lenders “required to hold at least 20 percent of the credit exposure to the project, which keeps their interest and the Department and project sponsors in alignment.”<sup>1</sup> The amount of actual US government budget scoring against DOE guarantees (the credit subsidy cost) depends on each project’s unique cash flows and the internally assigned risk ratings. Subsidy costs for the DOE loan guarantee program for project finance utility linked projects, such as Genesis, have averaged 12 percent of DOE guaranteed loan amounts.<sup>2</sup>

<sup>1</sup> www.energy.gov/lpo/what-if-i-m-lender

<sup>2</sup> Report of the Independent Consultant’s Review with Respect to the Department of Energy Loan and Loan Guarantee Portfolio. January 31, 2012. Table 4.

### Results

In the midst of this need for new renewable energy projects and in the face of a capital-constrained environment for financing large infrastructure projects, the Genesis Solar, LLC Project—one of the world’s largest concentrating solar power projects—was successfully developed as a P3. The project is a 250-megawatt (MW) concentrating solar power plant located in Riverside County, California, which was inaugurated in April 2014. It began to generate renewable electricity at an annual rate of 700,000 megawatt-hours (MWh), enough to power approximately 88,000 homes. The project’s success depended upon four primary factors:

1. Long-term (25-year) Power Purchase Agreement (PPA) to provide the stability and certainty of revenue
2. Experienced private sector contractors and experienced developers with ample equity
3. Federal tax benefits: 1603 grant to pay down project debt and accelerated depreciation to enhance returns to equity investors
4. \$852 million long-term debt package of bonds and commercial loans, which were 80 percent guaranteed by DOE through FIPP. DOE’s guarantee mobilized debt and did so at favorable pricing and longer repayment periods to improve project economics.<sup>3</sup>

The power purchase agreement for the \$1.2 billion project was completed in September 2009. Construction started in January 2011, and the first 125 MW unit began commercial production in November 2013.

### Fort Detrick Central Utility Plant

#### Challenge

After the events of September 11, 2001, the federal government was concerned about future bioterrorism attacks and the need to have a coordinated government deterrent and response capability. In response, President Bush approved a

multiagency directive titled “Biodefense for the 21st Century,” which established our nation’s multiagency National Biodefense Strategy. A formal interagency partnership emerged with a primary outcome being the development of a significant multiagency project—the National Interagency Biodefense Campus (NIBC). Fort Detrick, near Frederick, Maryland, was chosen to be home to the 200-acre NIBC campus because of its existing experience in biodefense research and the highest biosafety laboratories already located there, its secure location, and the availability of land for the campus.

The costs to construct such a campus were substantial due in part to the power requirements of the labs. These facilities, which would contain very dangerous organisms, had extreme power reliability requirements for the systems and equipment used to conduct bioterrorism research. The federal government was challenged with identifying the most efficient way to address these power requirements.

#### Results

Recognizing that a central utility plant would be the most efficient way to provide the extreme power and thermal (steam and chilled water) reliability requirements for the unique facilities and equipment in the Biodefense Campus, the Army used its EUL authority to competitively select a private development team to design, finance, construct, operate, and maintain the utility plant. Keenan Development Associates and Chevron Energy Solutions were chosen for the project, which would produce steam, chilled water, power conditioning, and emergency power on a 10-acre parcel provided by the Army. The team worked with multiple stakeholders that would have facilities within the campus including the Department of Homeland Security, Department of Health and Human Services, Department of Agriculture, National Institutes of Health, and the Army to negotiate an Energy Services Contract. This contract provided for strict up-time warranties of 99.99 percent for thermal energy and 99.999 percent for the conditioned, back-up power conditioning. The contract had a 10-year term with

<sup>3</sup> Genesis Solar was one of six FIPP partial guarantee transactions that closed in 2010–2011 to mobilize private equity and debt for utility scale renewable infrastructure projects in the United States during a capital-constrained lending environment.

two 10-year renewal options; this structure was used in part to alleviate Office of Management and Budget (OMB) scoring concerns that the contract would conflict with the criteria in OMB A-11, Appendix B. Another factor that mitigated scoring concerns was the sharing of risk and cost by multiple federal agencies. The contract was also the basis for the project's revenue stream, which comprised fixed availability payments sufficient to cover the equity returns, debt service and fixed expenses of operations and maintenance, and variable usage payments that covered the fuel and variable costs to produce the thermal energy. This structure was needed to secure approximately \$128 million in bonds, which were issued in 2006.<sup>4</sup> The bond had a very competitive interest rate, which was further reduced by Chevron's investment-grade credit rating. The transaction also received a high credit rating from Standard and Poor's. The bond issuance required the term of the government's land out-lease to be longer—36.5 years—with an option for an additional 13.5 years. Over the term of the bonds, the DSCR ranged between 1.19 and 1.27.

The project was completed in April 2008, and the plant has been operating continuously since that time.

This project was DoD's first energy-related project with a PPA completed under its EUL program. The innovative project is viewed as a model for interagency cooperation within DoD and other agencies of the federal government, as well as the adaptability and perseverance of the private sector to meet stringent and unique government requirements.

### **Virginia Downtown Mid-Town Tunnel**

#### **Challenge**

The Downtown Mid-Town Tunnel project was the number one priority for the Hampton Roads Metropolitan Planning Organization for more than 10 years. This project included one new tunnel and the refurbishment of two tunnels approximately 50 years old between Portsmouth and Norfolk, Virginia. The configuration of the tunnels resulted in this segment of road being the most heavily traveled two-lane road east

of the Mississippi River, with drive times occasionally exceeding 1 hour during rush periods for a trip of just over 1 mile. The project was undertaken to improve quality of life issues, for economic development growth, and to assist as an evacuation route during natural disaster emergency situations.

#### **Results**

The project's key stakeholders were the citizens of the Hampton Roads Region, the Commonwealth of Virginia, and Elizabeth River Crossings, Inc. (ERC), which serves as the contractor for the project. The Commonwealth of Virginia and ERC entered into a concessionaire contract for a period of 58 years on the \$2.1 billion dollar project. The contract includes the construction, operation, and maintenance of the facilities for the duration of the contract.

The financing of the \$2.1 billion project was a true partnership, as both the state and ERC had significant investment ("skin in the game") from the outset—the state provided a subsidy of \$504 million to reduce and/or defer tolls. The concessionaire team invested equity of approximately \$272 million and was assisted by the Commonwealth of Virginia to acquire a TIFIA loan of approximately \$463 million, with the rest of the contribution consisting of \$675 million in private equity bonds (PABS) plus \$169 million in project revenue during construction.

The revenue stream needed for the project's completion was in the form of tolls. As there is no set formula for delivering P3s, the process to reach commercial close (and ultimately financial close) is unique by project. The tolling levels for this project followed that course of action. Initial negotiations set the tolling limit at approximately \$4.00 (one way), which would have been excessive and prohibitive for especially the residents of Portsmouth. Negotiations were then targeted to reduce the tolls below a \$2.00 threshold (one way). Those negotiations ultimately reduced the tolls to \$1.59 off-peak and \$1.84 peak and were then reduced to \$0.75 and \$1.00 by Governor Terry McAuliffe with an additional state subsidy. Tolling on the project began on February 1,

<sup>4</sup> [http://www.cifg.com/pdfs/CIFG\\_Investor\\_Presentation\\_112906\\_EUR.pdf](http://www.cifg.com/pdfs/CIFG_Investor_Presentation_112906_EUR.pdf)

2014, and will continue until April 13, 2070, when the contract comes to term. The tolls will escalate periodically on a set schedule going forward but will never approach the \$4.00 initial level. The buses and ferry boat service that operate in the area will be able to use the facilities without charge.

Other than the structured state procurement process, there was no scoring involved. Legally, the contracting process involved in any P3 transaction is complicated and lengthy because the P3 procurement process is a true *partnership* and is different from standard procurement processes. Technical working groups were established immediately after awarding the contract (technical, commercial, and legal) to immediately identify and solve contested issues and ensure on-time and on-budget project completion.

The project was delivered on schedule and within budget and will provide a major benefit to the region of Hampton Roads and the residents of Virginia well into the future.

## Conclusions

P3s are increasing because they are an effective tool for the federal government in executing large-scale infrastructure projects. They solve the public sector problem of insufficient funding, and they offer the private sector a stable, long-term investment opportunity. Experience has shown that while the fruits of the effort are worthwhile, the challenge is for the public and private sectors to work collaboratively and creatively together to structure a deal favorable to both sectors. Collaboration between all parties requires strong commitment, leadership, and a get-to-yes mindset.

Since the private sector is typically investing most of the debt and equity, the federal P3 transaction needs to focus on reducing the real and perceived risks of investors, and this in turn leads to an efficient financing structure that benefits both the government and industry. The mechanism for this is as follows:

- Quality P3 project structures and well-developed project documents can provide more certainty and more stability for a minimum stream of project revenue (and thus cash flow) to service debt. Certainty and stability allows lenders to lower their requirement for the DSCR and thus increase debt levels.
- Long-term, clear commitments in P3 project documents that lower risk profiles will allow lenders to both lower their interest rates and increase the length of the loan repayment period. The result is lower debt service for any given period, which allows for increased debt levels.
- Higher levels of debt—in a well-structured project—lower the requirement for project equity and increase the expected return on investment for equity investors.
- Higher expected equity returns will result in greater competition in P3 projects, which leads to more options, better ideas, and lower cost options to the government.

The bottom line is the federal government should keep the perspectives of the debt and equity funding sources in mind from the beginning so that it can *attract* multiple sources of capital and efficiently execute the infrastructure projects critical for our long-term economic and competitive well-being.



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