



Performance Contracting 101

**Financing Upgrades via Energy Efficiency
Improvements**

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presented by

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Overview



Facility Owner Challenges

What is Performance Contracting?

How Does Energy PC work?

How are Funds Distributed?

Typical Financing Options

Steps in the Process

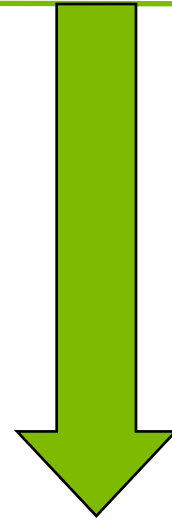


Facility owners are faced with a host of challenges

- Volatile utility costs
- Aging/failing equipment
- Capital Renewal and Deferred Maintenance
- Desire for Sustainable Facilities
- AND
- **Budget/funding challenges**

What is Performance Contracting?

- Reduce energy cost
- Reduce water/sewer cost
- Reduce operating and maintenance costs
- Reduce emissions
- Reduce waste
- Long Term Accountability
- Self-funded Solutions



*In short, Performance Contracting is a **procurement tool** that enables you to use **future energy savings** to **pay** for up-front costs of energy-saving **projects**.*

Benefits of Performance Contracting



What facility owners say they like:

- ✓ Self-funded, holistic implementation (everything at once)
- ✓ Improvements without sacrificing services
- ✓ Real, verifiable cost savings
- ✓ Access to expertise...extension of their staff
- ✓ Single point of responsibility
- ✓ Project cost and savings certainty

Customer Discussion to Identify Goals:
energy efficiency, emissions reduction,
operational savings, water savings, etc.

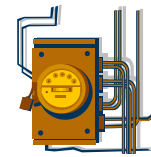
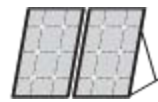
Preliminary audit/Site visit/Benchmarks/MOU

Customer commitment/PDA

Detailed audit- Confirm Benchmarks
Sophisticated analysis tools used to gather data and develop
customized solution

Energy Performance Contract with Savings Guarantee

Improvements
such as:



Lighting, water, HVAC, renewable energy, building upgrades, wireless, meters/controls

Lower
Water Use

Lower
Elect/Gas

Reduce
Waste

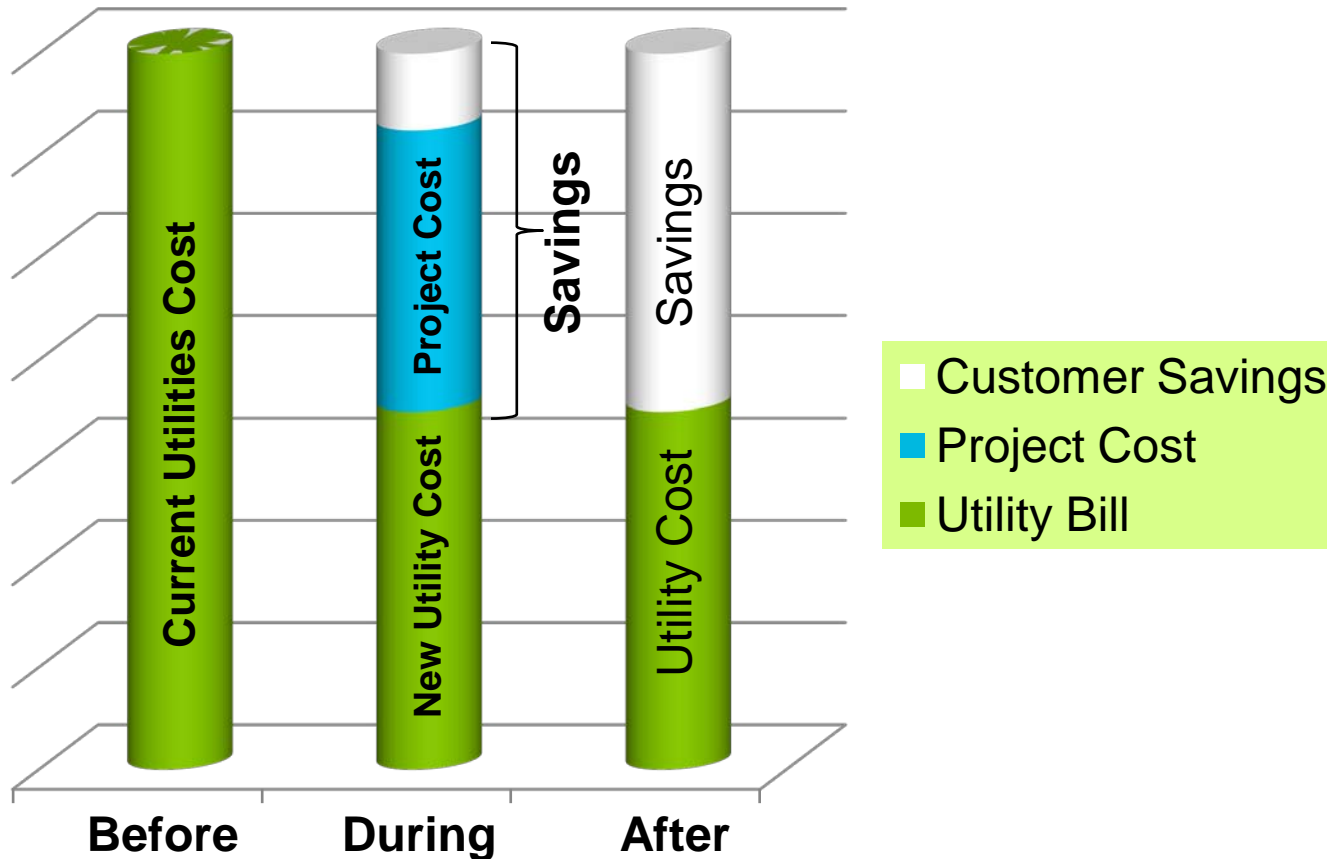
Reduce
Emissions

Reduce
Ops Budget

Reduce
Maintenance

Meet Customer Goals

How does Energy Performance Contracting Work?



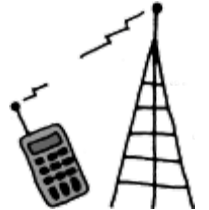
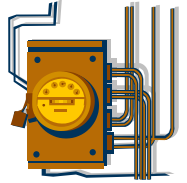
*Re-direct guaranteed **energy and operational savings** to pay for improvements today!*

How do we reduce energy and water use?



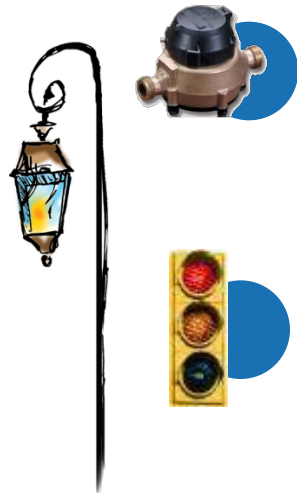
Traditional List of Facility Improvement Measures (FIMs)

- Lighting Retrofits
- Building Automation/Control Systems
- Water/Sewer Conservation
- HVAC Upgrades
 - Chillers
 - Boilers
 - AHUs



Emerging Facility Improvement Measures (FIMs)

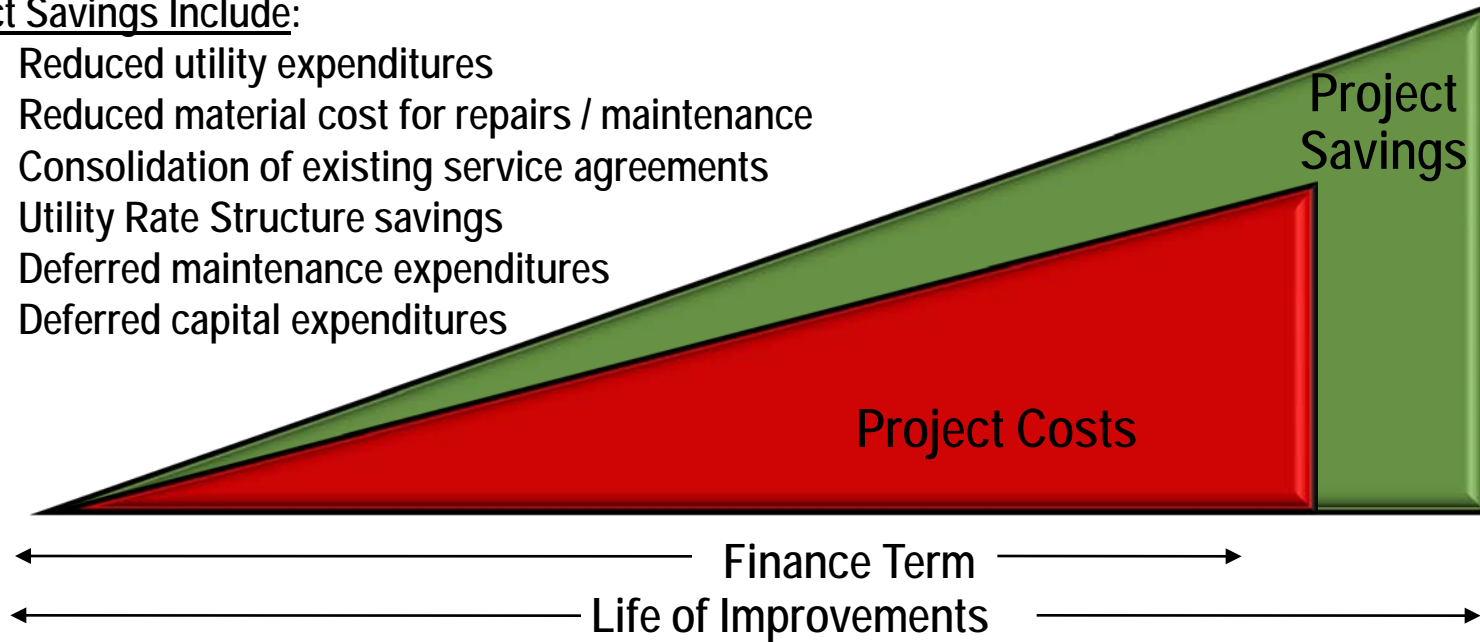
- Sustainable Energy Education and Communication program
- IT Energy Management
- Security Assessment / Systems
- Green Buildings (LEED)
- Energy and Emissions Management Systems
- Renewable – Solar PV/Thermal, Biogas, Biomass, Wind
- Co-generation



Project Savings and Costs

Project Savings Include:

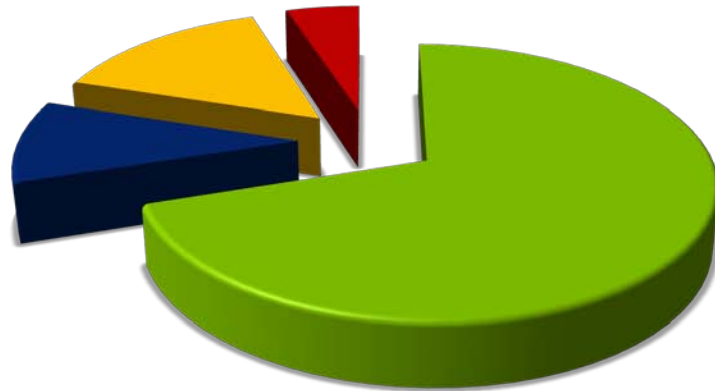
- Reduced utility expenditures
- Reduced material cost for repairs / maintenance
- Consolidation of existing service agreements
- Utility Rate Structure savings
- Deferred maintenance expenditures
- Deferred capital expenditures



Project Costs include:

- Project development / engineering design fees
- Equipment replacement and installation
- Interest charges for Financing
- Out-sourced Maintenance costs
- Guarantee management (Measurement & Verification)

How are Funds Distributed?



Pie represents 100% of savings and/or revenue generated

- Utility/Facility Upgrades (Actual reinvestment in project)
- Finance Charges (Determined by term and rate)
- Annual Maintenance Service
- Positive Cash Flow (if desired)

Objective is to determine the optimal way to distribute energy and operational savings

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Facility Improvement Measures Worksheet Example Performance Contract

Typical Measures

X or B	Building	Facility Improvement Measures "FIM" Description	FIM ID	Simple Payback	Customer Selling Price					Total Annual Savings	
											Total Annual Service
X	Campus-Wide	Lighting Upgrade		5.99	\$1,962,121				\$16,000	\$311,400	\$327,400
X		Sports Field Lighting		8.42	\$142,424				\$8,000	\$8,925	\$16,925
X		Solar PV Walkway Cover		45.99	\$118,182					\$1,700	\$1,700
X		Water Conservation		4.29	\$97,727				\$3,000	\$19,800	\$22,800
X	Campus-Wide	Energy Mgmt Controls		8.40	\$695,455					\$82,800	\$82,800
X	Building A	Chiller Plant Upgrade		16.57	\$477,273					\$28,800	\$28,800
X	Building C	Boiler Replacement		56.57	\$63,636					\$1,125	\$1,125
X	Central Offices	Variable Air Volume Retrofits		2.97	\$101,515					\$34,200	\$34,200
X	Building E	Elevator Modernization		25.22	\$215,152			\$2,500		\$6,030	\$8,530
X	Buildings D,E	Roof Replacement		23.02	\$203,030					\$8,820	\$8,820
X		Window Tinting		12.30	\$57,576					\$4,680	\$4,680
X		Project Development			\$101,515						
X		Project Management			\$272,727						
X		Guarantee Management					\$40,000				
X		Services - Controls & HVAC					\$86,538				
X	Bonds	Bond			\$44,633						
X											
X											
X											
X											
Example Performance Contract				Typical Measures							
Net Present Value "NPV"				\$606,569							
Internal Rate of Return "IRR"				5.14%							
				8.39	\$4,552,966	\$126,538	\$29,500	\$508,280	\$537,780		
					First Year =	\$108,205	\$45,500	\$508,280	\$553,780		
					Install. Year						

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Example Performance Contract

Typical Measures

Finance Decision

Interim Period Finance Cost	\$101,451
Project Cost	\$4,552,966
Total Cost to Finance	\$4,654,417
Interest Rate	4.400%
Term of Financing (Years)	12.00
Payment	Annually Advance
Capital Cost Avoidance?	Yes

(Excludes buy-downs)

Payments
Annual Payments
No. of Payments
Total Payments
Total Interest

	Monthly	Quarterly	Semi-annual
	\$41,509	\$123,965	\$246,277
	\$498,103	\$495,861	\$492,553
	144	48	24
	\$5,977,231	\$5,950,331	\$5,910,637
	\$1,322,815	\$1,295,915	\$1,256,221

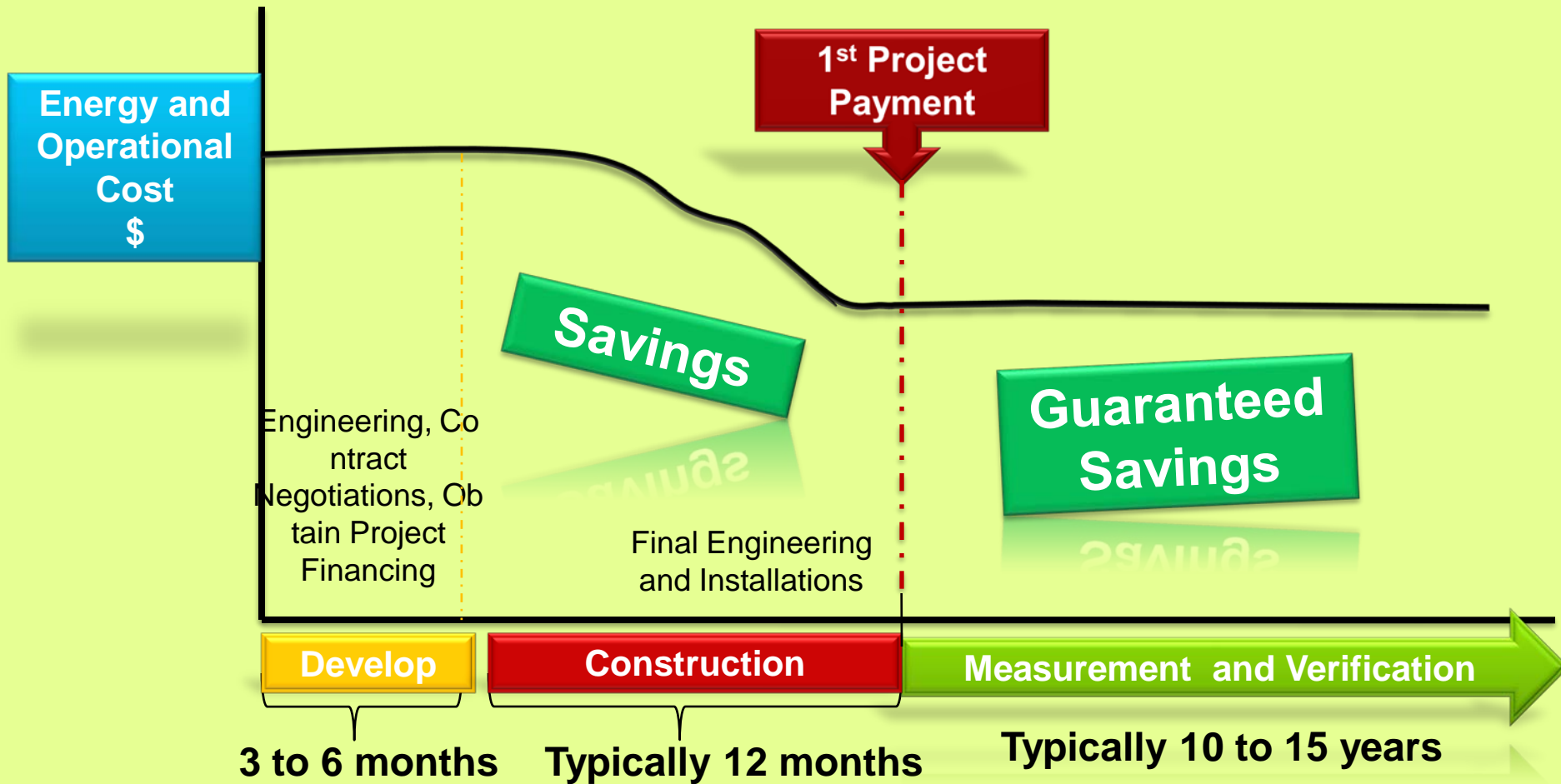
Annual Cash Flow Analysis

Year	Annual Energy Savings	Annual Operational Savings	Energy Rebate/ Incentives	Capital Cost Avoidance	Total Annual Savings	Annual Project Costs	Annual Service Costs	Total Costs	Annual Cash Flow
Installation	\$0	\$0	\$40,000	\$0	\$40,000	\$0	\$0	\$0	\$40,000
1	\$508,280	\$45,500	\$0	\$64,600	\$618,380	\$486,127	\$108,205	\$594,332	\$24,048
2	\$523,528	\$30,385	\$0	\$64,600	\$618,513	\$486,127	\$130,335	\$616,461	\$2,052
3	\$539,234	\$31,297	\$0	\$64,600	\$635,131	\$486,127	\$134,245	\$620,371	\$14,759
4	\$555,411	\$32,235	\$0	\$64,600	\$652,247	\$486,127	\$138,272	\$624,399	\$27,848
5	\$572,074	\$33,203	\$0	\$32,300	\$637,576	\$486,127	\$142,420	\$628,547	\$9,029
6	\$589,236	\$34,199	\$0	\$32,300	\$655,734	\$486,127	\$146,693	\$632,820	\$22,915
7	\$606,913	\$35,225	\$0	\$0	\$642,137	\$486,127	\$151,094	\$637,220	\$4,917
8	\$625,120	\$36,281	\$0	\$0	\$661,402	\$486,127	\$155,626	\$641,753	\$19,648
9	\$643,874	\$37,370	\$0	\$0	\$681,244	\$486,127	\$160,295	\$646,422	\$34,822
10	\$663,190	\$38,491	\$0	\$0	\$701,681	\$486,127	\$165,104	\$651,231	\$50,450
11	\$683,086	\$39,646	\$0	\$0	\$722,731	\$486,127	\$170,057	\$656,184	\$66,547
12	\$703,578	\$40,835	\$0	\$0	\$744,413	\$486,127	\$175,159	\$661,286	\$83,128
Totals	\$7,213,525	\$434,665	\$40,000	\$323,000	\$8,011,190	\$5,833,522	\$1,777,504	\$7,611,026	\$400,163

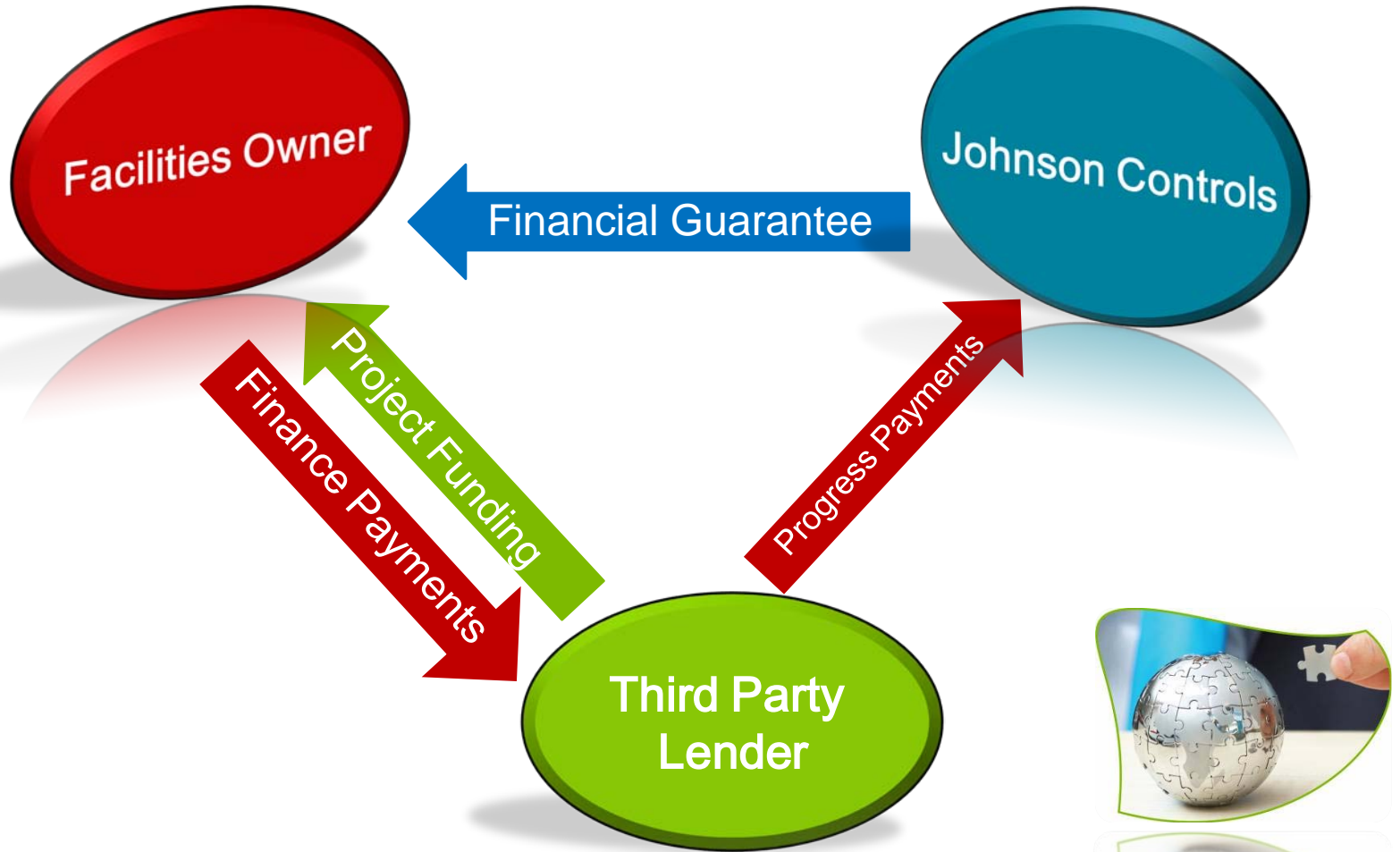
This cashflow is indicative of the current financing conditions, assumptions and savings projections and is subject to adjustment upon final financing arrangements.

Question ... *When does customer start paying for the project ?*

Answer ... *Not until project is complete and savings begin!*



Contractual Relationships



Typical Financing Options

□ Typical Financing Vehicles

- Cash
- Bonds
- Tax Exempt Municipal Lease



Comparison of Financing Options

Criteria	Cash	Bonds	Tax Exempt Municipal Lease
Interest Rate	N/A	Generally lowest, but with up front costs	Low
Other Costs	N/A	Typical closing costs - Underwriting, Legal, Insurance, etc.	Internal only (legal review, financial advisor review)
Approval Process	Internal	Depends on issuance type and local statutes	Governing body approval
Approval Time	Governing Body	Lengthy process, especially in current market	Quick, usually closes within 30 days
Advantage	No Interest	Lowest cost for large projects (\$10+ Million)	Operating Cost, Not Debt, Simple, Flexible
Disadvantage	Depletes Reserves	Debt ceilings may be impacted, time consuming	None – most common financing approach

Steps in the Process:

- Customer makes an informal decision to determine if PC is a viable option and how they would like to proceed-MOU.
- Obtain agreement to conduct Business Case Analysis (BCA) to develop benchmarks/opportunities
- Determine Customer Procurement Process.
 - JCI assumes all costs associated with conducting a preliminary opportunity assessment with no financial obligation from customer.





Any Questions?

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