



Energy Solutions

**Public-Private Partnerships (P3s)
& Solar Energy:
Market Conditions, Funding
Sources**

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Bruce Dickinson
Director, Business Development**



Solar Power and Energy Efficiency Program San José Unified School District, San José, California



Solar panels on roof of San José High Academy



Solar parking canopies at Corporation Yard

Macro drivers of solar market landscape

Solar Market Landscape

Cost of Financing

- Credit Conditions
- Interest Rates
- Tax-Equity & PPA Market
- Balance sheet of entity & contractor

Cost of Materials

- Solar Panels
- Steel, Concrete, etc.
- Cost of Labor
- Technology Capabilities

Policy & Programs

- Cap & Trade
- Federal RPS
- State RPS
- Incentives & Off-take Programs
- Funding & Financing Programs

← Changing Landscape →



Funding Sources

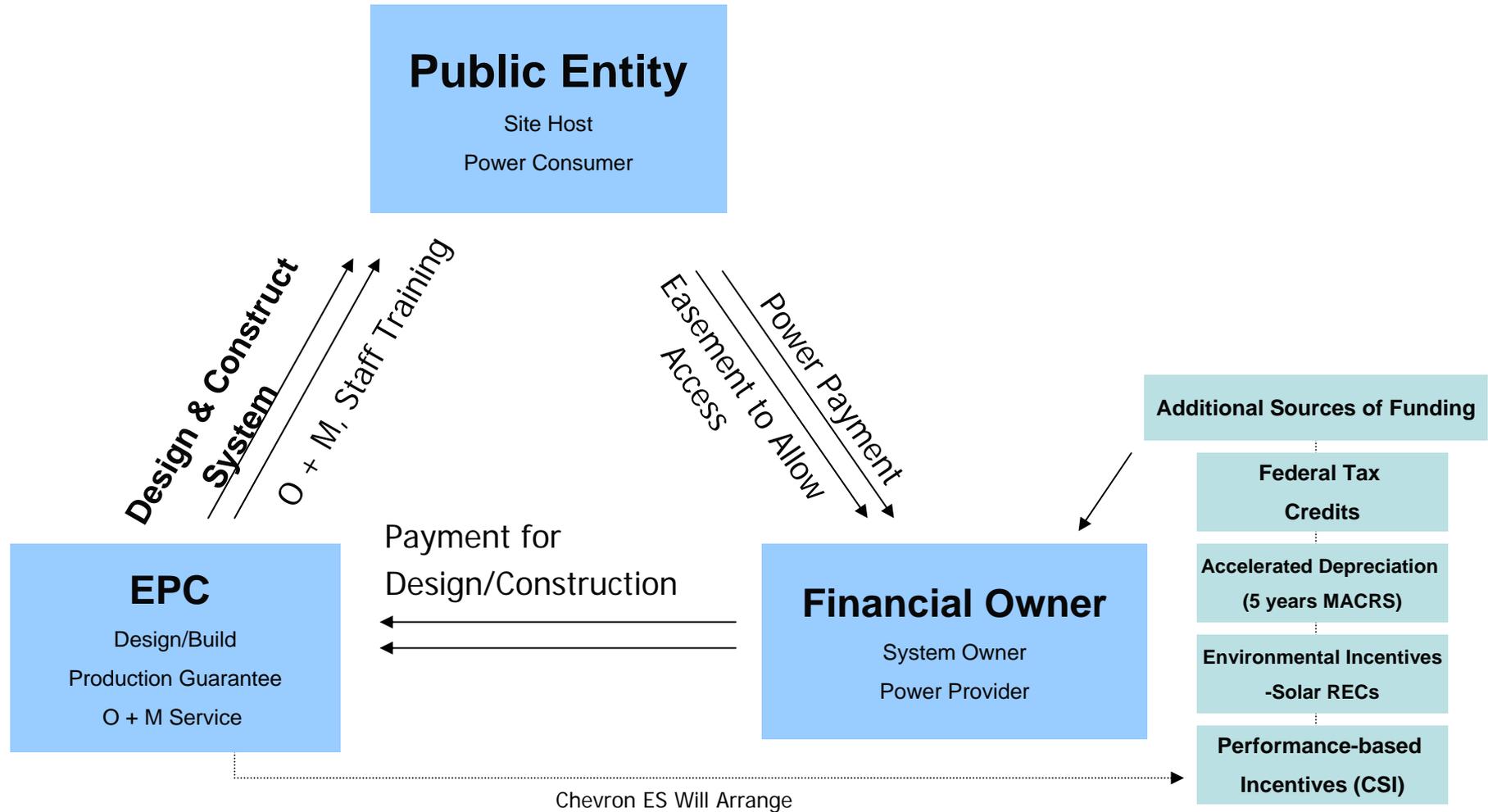
Options	Description	Operating Savings	Capital Preservation	Financial Return	Current Availability
1 Capital Purchase	Buy and own solar with general obligation bond funds or capital				
2 Tax Exempt Lease Purchase	Own solar by financing with lease paid from operating budget via utility savings				
3 3rd Party PPA	Contract to host solar and buy power from 3rd party owner – “take & pay”				
4 Tax Credit Bonds (District Obligation)	Buy & own solar with a federally subsidized borrowing repaid through savings (QSCBs)				
5 Tax Credit Bonds (General Obligation)	Buy and own solar with general obligation bond funds that utilize federal subsidies				
6 Tax Exempt Bonds (District Obligation)	Buy and own solar with revenue bonds that use tax-exempt capital (e.g., COPs)				

Public entities have a variety of financing choices for solar and energy efficiency





Power Purchase Agreement



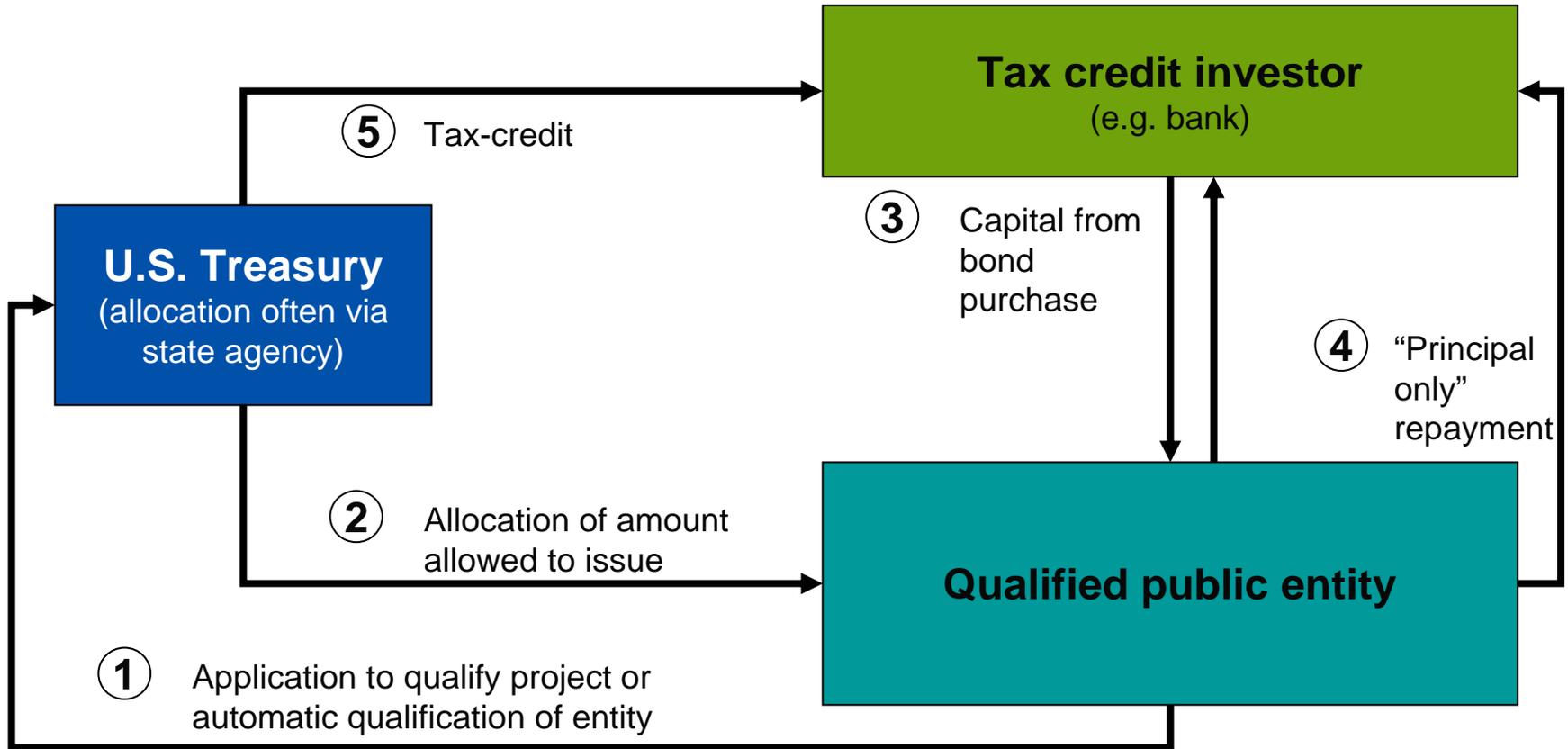


3rd party PPA: The current challenge

- **The “tax-equity” market is crucial to funding solar projects through a PPA**
 - Tax-equity investors provide cash in return for receiving the tax benefits (ITC and depreciation) and energy payments
 - Projects compete to attract tax-equity investors who will fund the solar system at reasonable “interest” rates
- **The financial crisis has impacted the tax-equity market for Solar/Renewable Energy**
 - Most tax-equity investors were banks who are no longer making profits and, hence, have no “appetite” for tax credits
 - The few tax-equity investors left are demanding higher rates of return that reduces the “Market of Interest”
 - In 2007-2008 there were over 25 tax large equity investors in the market
 - 2009 tax-equity activity from Wells Fargo, SunTrust, US Bank, Union Bank, JP Morgan, TD Bank and very few additional



Tax Credit Bonds



Investors receive tax credit from the federal government instead of interest from borrowers thereby lowering borrowing costs



Incentive, Loan and Tax Credit Programs Support Solar Energy

