



CHP Project Development and Financing Strategies

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U.S. EPA Combined Heat and Power Partnership
2009 Partners Meeting
October 1, 2009
New York, NY

This Is LS Power Group

- ☑ Industry-focused integrated project developer and private equity investor
- ☑ Started in 1990 in cogeneration, IPP industry's largest origination team

Development, Construction Operation & Asset Management

- Developed, owned, operated 20,000MW, 750MW of CHP
- Managed 3,600MW for 3rd parties
- Thousands of MW of generation and transmission projects
- Active renewable and CHP development pipeline
- Conservative approach, long-term creditworthy contracts
- The first developer to launch a private equity effort

Acquisition & Investment

- Over $4.3 billion of capital dedicated to power, energy
- One of sector's largest private equity businesses
- Active and large acquisitions cultivate bank relationships
- Access to wide variety of capital
- Major holder of CPN, DYN, TAC - lowest CO_2 IPPs
- ~17% indirect stake in 10,000MW in CHP in US, Canada

LS Power Group - In-House Functional Expertise

Project Development	Origination & Marketing	Licensing & Environmental	Regulatory & Transmission	Investment, Tax & Finance	Engineering & Construction	Management & Operations

LS Power Footprint*

* Does not show early stage development generation and transmission projects in early development

LS Power Legacy CHP Examples

Whitewater

- ☑ Location - Whitewater, WI
- ☑ Investment - $198 million
- ☑ Combined cycle - 245MW
- ☑ Power purchaser - WEPCO
- ☑ Steam purchaser - University of Wisconsin and a greenhouse

Cottage Grove

- ☑ Location - Cottage Grove, MN
- ☑ Investment - $173 million
- ☑ Combined cycle - 245MW
- ☑ Power purchaser - NSP
- ☑ Steam purchaser - 3M Plant

Blackhawk

- ☑ Location - Borger, TX
- ☑ Investment - $134 million
- ☑ Topping Cycle - 254MW
- ☑ Up to 1,200,000 lbs/hr
- ☑ Power purchaser - SPS
- ☑ Steam purchaser - Phillips Petroleum

- ☑ Whitewater and Cottage Grove financed via two long-term 144A project bond series
- ☑ Blackhawk financed via a long-term 144A bond issue

LS Power Recent Financing Track Record

☑ Executed large construction financings in a variety of market conditions

Date (2005-2009)	Financing Vehicle	Amount
2005-2007	LS Power Equity Partners I, II	$4,250 million equity funds
October 2005	LSP-Kendall Energy, LLC	$422 million debt
December 2005	Ontelaunee Power Company, LLC	$100 million debt
March 2006 & March 2007	Plum Point Energy Associates, LLC	$750 million in debt
March 2006	LSP Gen Finance I, LLC	$1,690 million in debt
April 2006	Plum Point Energy Associates, LLC	$100 million tax-exempt debt
May 2006	Ontelaunee Power Company, LLC	$150 million debt refinancing
December 2006	LS Power Equity Partners I, II	$1,050 million subscription facilities
March 2007	Plum Point Energy Associates, LLC	$819 million in debt
May 2007	Broadway Gen Funding, LLC	$1,365 million in debt
August 2007	Sandy Creek Energy Associates, L.P.	$1,000 million debt
October 2007 & February 2008	Sandy Creek Energy Associates, L.P.	$100 million tax-exempt debt
May 2008	Luminus Credit Partners, L.P.	$450 million mezzanine fund
May 2008	Luminus Credit Partners, L.P.	$60 million subscription facility
June 2008	Broadway Gen Funding, LLC	$380 million debt refinancing
October 2009 *	Valley Road Funding, LLC	$500 million debt financing
October 2009 *	Port River Funding, LLC	$275 million debt financing
Total		$13.5 billion

* pending

It's Not JUST About Money, It's ALL About Money

☑ CHP will need access to equity, debt capital and private sector involvement

☑ Current situation leaves a lot to be desired. Policymakers can offer help

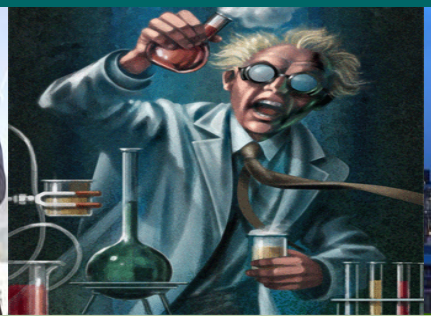
THE GOOD NEWS:	
PRIVATE SECTOR IS READY	
MONEY AVAILABLE:	cash available to finance good CHP
STRUCTURES KNOWN:	proven, familiar financing techniques apply
LENDERS RECEPTIVE:	CHP a welcome diversion from RE epidemic
SPONSORS READY TO GO:	once proper policy incentives are in place
THE BAD NEWS:	
NO CHP W/O FINANCE, LITTLE DEBT W/O INCENTIVES	
BANKS ARE GETTING CRANKY:	emerging with power to dictate terms
HIGH TOLERANCE FOR PAIN NEEDED:	lender scrutiny intrusive and not pleasant
RELATIVE VALUE:	debt origination loses to market purchases
FUNDING GAP:	high costs, soft markets, few incentives in place
BANKABLE CONTRACTS:	no risk appetite, need highly rated customers
POLICY BALKANIZED:	no federal mandate, state policy fragmented
PLAYING FIELD NOT LEVEL:	increasing subsidies to less deserving favorites
INCENTIVE DISCONNECT:	commercial and financing reality disregarded
INCREASING BARRIERS:	new build CHP requires experienced sponsors
ACTION ITEMS:	legislators and regulators have work to do

CHP is Intuitive and Has Many Fans Outside This Room -

fans among those who never heard of the McKinsey Carbon Cost Curve:

ENGINEERS

SCIENTISTS



CUSTOMERS

… and fans among those who never heard of the 2nd Law of Thermodynamics:

FINANCIERS

MY KIDS

LAWMAKERS

Impressive fan club but not enough for CHP to get its place in the political sun:

- ☑ Not as exciting as renewables. Poor sound bite material compared to efficiency
- ☑ Not quite demand-side or stack-free. Stuck between incumbents and environmentalists
- ☑ HR2454 adds insult to injury - fails to reward CHP's attributes, creates disincentives
- ☑ Cap and allocation design dampens bullish CO2 price signal
- ☑ CHP advance will disappoint without clear government incentives
- ☑ Unique opportunity for policymakers to firmly plant CHP industry flag

Energy and Credit Markets Demand Long-Term Contracts

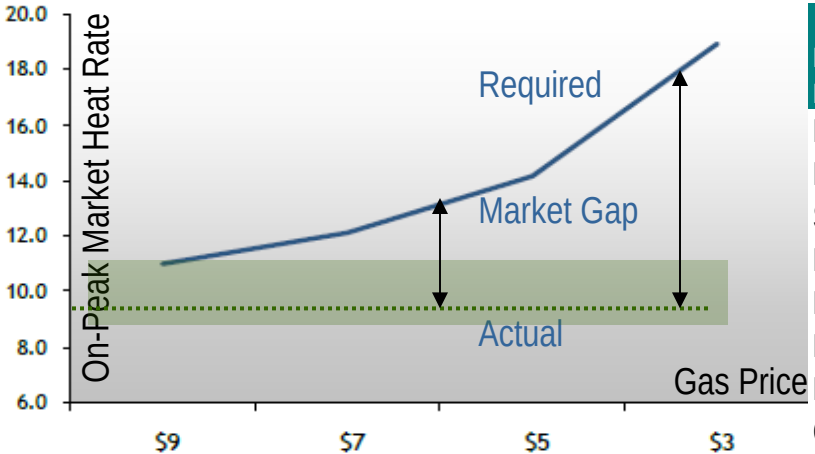
Financing relies solely on PROJECT cashflow. Would merchant CHP stack up?

- ☑ Some electric customers are re-engaging on PPAs. Thermal users are more receptive to CHP
- ☑ Bank activity and credit valuations have begun to recover

A year-over-year comparison of merchant fundamentals is not so encouraging

- ☑ New build costs near their peak after an increase by 3.2x
- ☑ Finance costs doubled, terms are tougher, credit risk is up on weak outlook
- ☑ Power 48% down, capacity markets 85% lower, demand response tripled since 2008
- ☑ Wind capacity up 60%, 13% drop in industrial demand
- ☑ Gas front month down 80%, bearish outlook despite producer response
- ☑ As gas drops, market heat rate needs to rise to make new build viable. Yet market heat rates are low and volatile. Bad mix when combined with high upfront cost

Breakeven Market Heat Rate vs. Gas Price - New Build

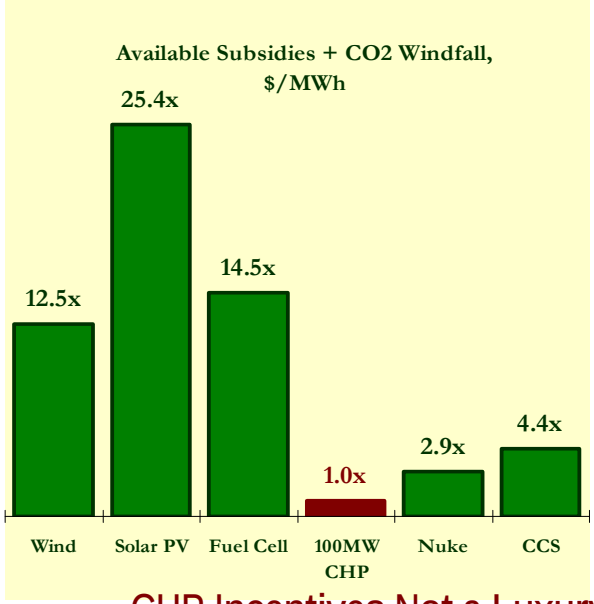


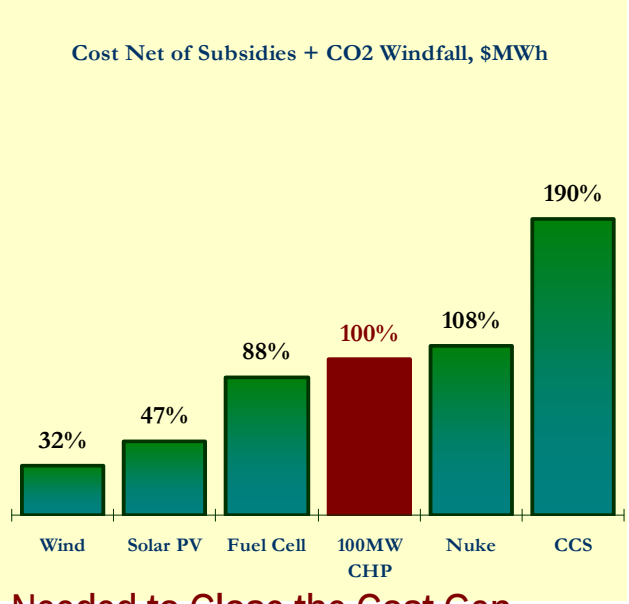
Actual Regional Market Implied Heat Rates as of July 2009

Market Implied Heat Rate	Reference Gas Index	LTM On-Peak	2010-2011 On-Peak, Henry Hub	Forward Off-Peak
NP15	PG&E CityGate	9.25	8.95	6.00
Palo Verde	SoCal	9.30	8.40	6.00
SP15	SoCal	10.50	8.80	6.50
Mead	SoCal	10.25		6.50
ERCOT North	Henry Hub	8.50	8.25	5.75
Ercot Houston	Henry Hub	10.50	8.70	5.75
PJM West	Tetco M3	8.75	9.40	6.25
CinHub	Chicago CityGate	8.50		6.25

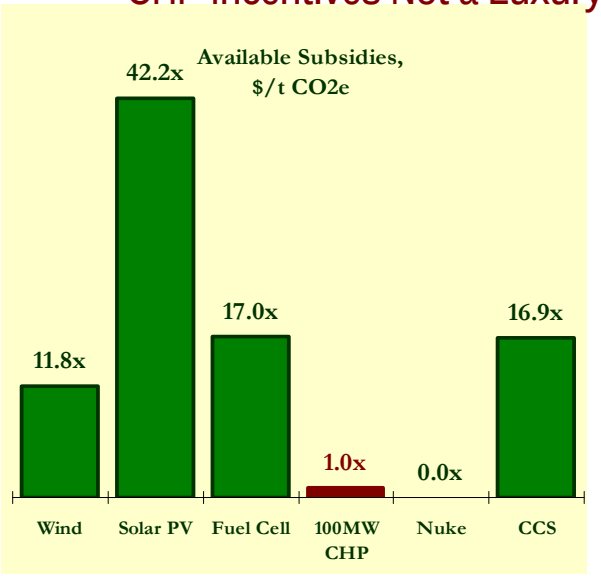
Yet Policy Gap is Wide Open, Leaving CHP Uncompetitive

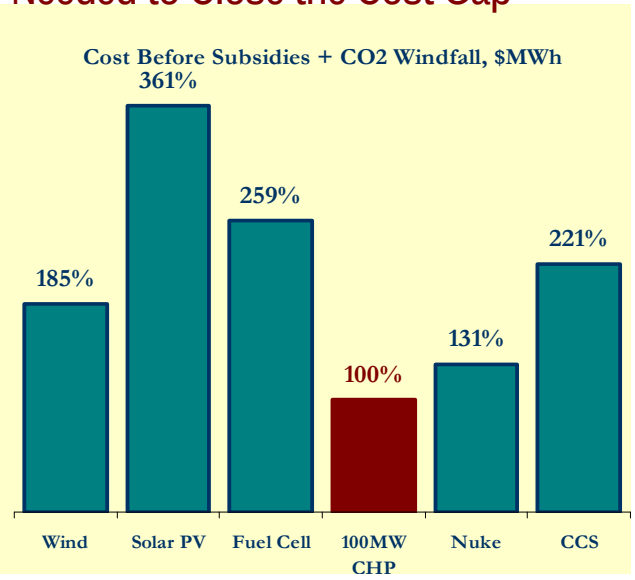
- Federal CHP incentives orders of magnitude lower than renewable
- To be precise, CHP gets 2 to 8 cents for dollar renewables get
- Renewable-only subsidies divert customer and lender attention
- CHP requires less taxpayer money than renewables
- Much more support needed to transform CHP deployment from idea to reality





CHP Incentives Not a Luxury, Needed to Close the Cost Gap





Costs represent levelized cost over useful life of asset including ROIC

Gas price 5$/MMBtu, allowance price 30$/t; Grid 1,339 lb CO2e/MWh, on-peak 9 HR CC, off-peak 60% 11 HR coal, 25% 8 HR gas CC

Cost 2,800$/kW wind, 7,800$/kW solar PV, 6,500$/kW fuel cells, $1,500/kW CHP, 12,000$/kW nuke, $1,200/kW CCS. ITC 30% for wind, solar, fuel cells, 10% of 25MW CHP.

5.5c/kWh renewable adder fuel cells; 50$/ t CO2e allowance bonus CCS, RECs $45/MWh to wind, 100$/MWh to solar; electricity savings value 10$/MWh for 35% output to fuel cells and CHP

Could Some Policy Approaches Inadvertently Stifle CHP?

Ad hoc stimulus measures not backed by a transparent legislative framework

- ☑ 'Surprise attack' announcement, shovel ready expectations out of sync with industry practices
- ☑ Administrative PPAs finalized with OEM but no investor in the room

Half-measures disguised as incentives

- ☑ Only PART of output eligible for EPS? Will lender and contractor accept PART of payment?
- ☑ Portfolio standard should include full CHP electric output

Definitions that deny the 'P' to CHP strike at CHP's Achilles Heel

- ☑ Use 50% of power on-site? Thermal sales make ELECTRIC output clean. No matter who buys
- ☑ Host may not switch from the grid. CHP output is good for the grid and may fit with local utility
- ☑ Eligibility alone will keep PURPA machines out if based on min efficiency and thermal output

Policies that make PERFECT the enemy of GOOD may compromise financeability

- ☑ Ultra-high efficiency mandates dictate unforgiving CHP configurations
- ☑ May be a problem: lenders are focused on performance, remedies if thermal host is lost

Efficiency Gains Years Across Industries Over Past 35 Years

utility grid	refining	steel	cement	paper	chemical	aluminum
None	25%	30%	33%	42%	60%	95%

Source: The NEED Project, 2008

What Incentives Do Private Investors and Lenders Need?

Existing policy support fails to mobilize private capital, CHP left outside looking in

- ☑ Incentives exist mostly at state level, are soft and target micro CHP and DG
- ☑ Exist in states with stronger power markets … but not ones that would most benefit from CHP

Private investors need

- ☑ Federal legislation with a menu of long-term energy and climate incentives
- ☑ Policies with maximum statutory clarity, transparent rules, and consistent implementation
- ☑ Clarity in order to commit risk capital and resources to multi-year development

Critical incentives must have customer and lender in mind, address disincentives

- ☑ EPS credit for full electric output based on efficiency hurdle
- ☑ Climate legislation to reward CHP for avoided indirect emissions savings relative to grid
- ☑ Appropriations for EISA2007 Section 373 awards, tenor extended to fit project finance

Value Chain - Incentive Are Not All Created Equal

Increasing attractiveness to private financing

Policy Incentive Type	Incentive	Pros	Cons
Market-based (ACESA2009)	Portfolio standard state RPS/ APS/ AEPS/ EERS and federal CERES	Brings electric customer to table Crucial to project viability Crystallize largest revenue stream	Top-down but indirect, leaves choice to market Favors least-cost resource within each type CHP competes with other resources How will LSEs prioritize on CERES vs. state RPS?
Direct (ARRA2009, EIEA2008)	Cost share grants	Most impactful, buys down cost and risk, project does not have to run	Consideration monetized in yr 1, not available later May impact exit options Competitive, finite amount of total funding The remainder of initial project cost financed
	Investment tax credit	Nearly as robust as a cost grant but discounted by the cost of tax equity	Takes corporate owner with offsetting tax liability Severely limits playing field Projects not tax payers in early yrs, need 3rd party May be handicapped by lack of tax appetite and/or high cost of tax equity in the market
	Climate Allocations, Partial exemptions	Free currency of uncertain value	Ratchet down at least at the rate of the cap decline
Performance-based (EISA2007, ACESA2009)	Production grants, Production tax credit, Low interest rate loans, Credit support	With proper tenor and design, can be effective for better projects	Contingent on project success and operation Awards typically limited in scale
	Climate Incentives Offsets, Credits, Compensatory mechanisms	If not allocated or exempt, the only way to address potential exposure to carbon cost	

Users Should Consider Outsourcing Capital Risk

Power industry is the most capital-intensive, 2x the upfront spend of mining, O&G

- ☑ CHP even more so, due to diseconomies of small scale, higher costs and credit exposure
- ☑ PATIENT DEBT ARRANGEMENTS AND ADEQUATE INCENTIVES ARE A MUST

Users not in a position to commit to fund years before completion and repayment

- ☑ Ability to fund limited by budgets and mandatory expenditures, ratings, liquidity, debt capacity
- ☑ Users can CONTRACT for energy with a 3rd party who develops, finances, builds, operates

Private sector entrepreneurs best positioned to champion CHP - PURPA, wind

- ☑ Since ‘96, independents added as many MW as utilities in two previous decades
- ☑ Mobilize private sector execution skills to underwrite CHP deployment

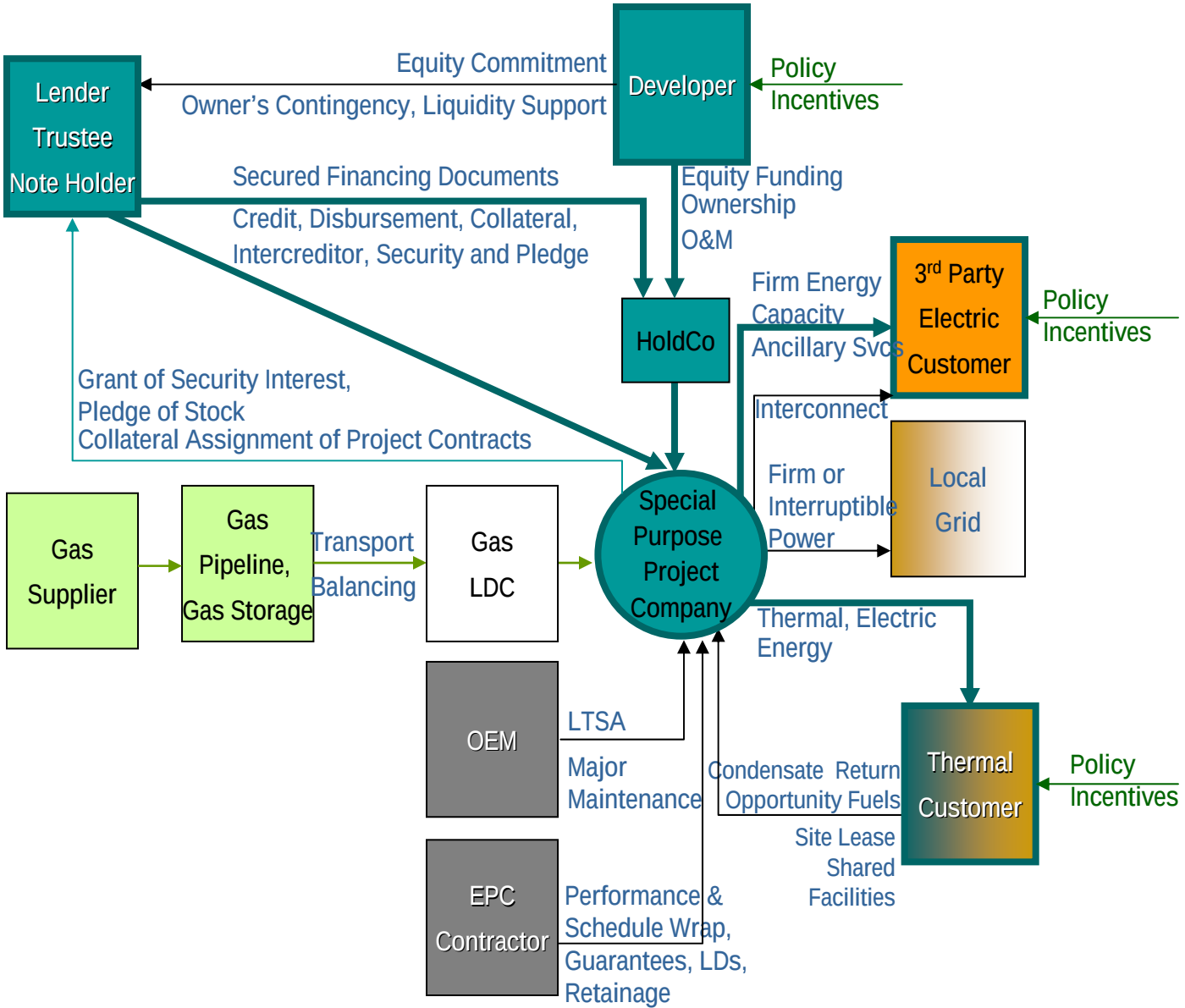
Several efficient nonrecourse debt financing options open to private sector CHP

- ☑ All are HIGHLY STRUCTURED and require LONG-TERM CONTRACTS
- ☑ All require extensive prior EXPERIENCE AND TRACK RECORD

Project Finance Most Efficient Way to Mobilize Capital

- ☑ Larger debt quantum, longer tenor, easier repayment, concentrated ownership
- ☑ Lenders prefer project governance to corporate: no managerial discretion to act

- No recourse to project parties, only project cashflows
- Contracts allocate risk to parties best suited to control them
- Wise for user to outsource development
- Developer negotiates all contracts, writes the check
- Host is insulated from complexity, project risks
- Host benefits from lender scrutiny
- Keeps sponsor on his toes and ensures timely delivery and performance



Project Finance Market Open Despite Recent Volatility

Reinvented itself after spectacular failures - merchant power, telecom, Eurotunnel

- ☑ PF still highly flexible: prepayable, can co-exist with muni finance, lease or bonds
- ☑ Global market size: $200bn/ 400 deals a year, energy 40% of total

Since 2005, commercial banks disintermediated by institutional loan investors

- ☑ Boosted speed of execution, deal size, relaxed covenants, all at competitive pricing
- ☑ Asset M&A, then top construction bankrolled by loans designed to trade not sit on books

Now back to old days but open to institutional investors

- ☑ Some non-bank investors remain active and like project finance, but now at a steep price
- ☑ Best projects are better off with banks despite pain involved
- ☑ Banks getting used to government incentives that came with the renewable craze

Today debt arrangement is risky, contracting-intensive

- ☑ No underwriting, developer-led club deals, take time and effort
- ☑ Many active creditors are foreign banks – need relationships, deep pockets
- ☑ Project finance at the moment is not for the uninitiated

The Leverage of the Lease - Unavailable, Please Come Back

Capital equipment finance technique

- ☑ 1980s: utilities lease financed coal, nuke build to cushion rate shock
- ☑ 1990s: IPPs leased assets to free up capital for trading from asset ownership

Monetizes tax benefits when lease equity is available

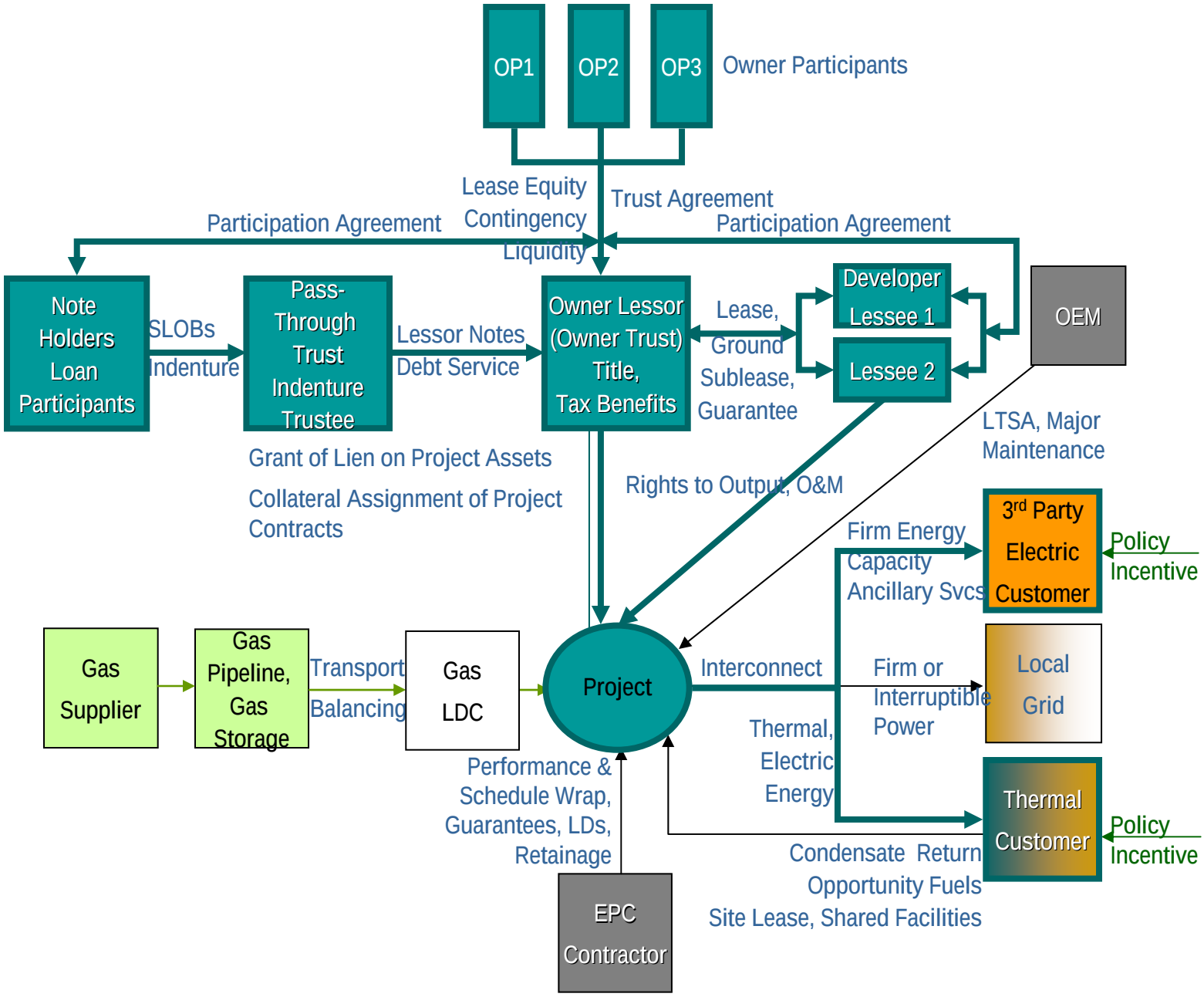
- ☑ Lease investor market illiquid, expensive - lack of tax appetite in corporate America
- ☑ Project finance is more competitive for new build

Best used to refinance project after construction if tax equity market comes back

- ☑ Longest tenors, lessor in it for tax - frees up cash for debt service
- ☑ Inflexible – after debt is repaid lease equity is costly to break
- ☑ Owner lessor and operator are different entities, how would incentives apply?
- ☑ Need many investors each with a slice of undivided interest
- ☑ All the headache of PF plus documentation intensity

Simplified Leveraged Lease Structure

- Leveraged sale-leaseback
- Developer sells and leases back from a passive owner
- Owner gets all tax benefits of ownership
- Lessee operates, has rights to output
- Project must have a web of bilateral contracts similar to PF



Preferred Partnership is a Form of Equity Financing

Can minimize shortfall in debt proceeds

- ☑ Used where original developer decides to ratchet back funding
- ☑ Better capitalized entity joins directly as partner to complete
- ☑ Private partnership flip keeps interests of two dissimilar entities aligned

Cheap option for original developer: pari passu but payout 'time subordinated'

- ☑ Larger party gets disproportionate distributions until preferred return is reached
- ☑ Then majority distributions flip to original developer
- ☑ Flip is performance based
- ☑ An 'unwind mechanism' allows original developer to get rid of preferred investor

Offers flexibility

- ☑ No covenants, defaults or remedies
- ☑ Compatible with any debt financing structures
- ☑ Both partners are viewed as equity by lenders, may improve borrowing terms

Public Private Partnership

PPP – a complex cross-border solution gone local

- ☑ Originates in privatization investment - Australia, UK, Canada, emerging countries
- ☑ In the US, state institution and municipal district energy

Mitigates host's concern over public debt and budgets

- ☑ Leverages private sector's experience and execution, mobilizes private capital
- ☑ Private developer finances and maintains new CHP plant, refurbishes old plant
- ☑ Private entity provides 'public' service in partnership with host who retains distribution system
- ☑ The operative arrangement is BOT: at the end of concession, assets return to host
- ☑ Applies in early development, construction, permanent financing stages
- ☑ Is a variation on the theme of project finance

Conclusions

- ☑ Economic and policy stars not exactly aligned for massive CHP deployment
- ☑ Private sector capital ready as long as policy incentives do not disappoint
- ☑ Thermal users should consider leveraging private sector's expertise, capital access, high tolerance for pain
- ☑ Financing options open to best-in-class contracted CHP projects
- ☑ Robust incentives will enable more CHP projects to be financed and deployed
- ☑ Policymakers understand the issues, but need to get it right this time
- ☑ Advice on policy: don't let the perfect be the enemy of the good