



Alberta & Saskatchewan Renewable Energy Finance Summit

Comparing Financial Concepts: Ontario vs PJM/NJ
June 2, 2016

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Presentation Agenda



- Context
 - Typical Ontario solar finance model
 - PJM/NJ market overview
 - Typical PJM/NJ solar finance model
 - Comparison of the two markets
 - Recent developments & observations
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Context



- Objective – Compare Ontario with PJM/NJ
 - CIT Experience – Mainly solar
 - Examples include generalizations
 - Scale – 4.8 MW's
 - Presenter's Opinions not CIT
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Ontario FIT Program



- Conditional contract offer program
 - Defined application process
 - COD achieved, FIT converts to PPA
 - Fixed price 20 year PPA for all power, whenever
 - Off-taker is the IESO
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Sources & Uses



Item	000's	Notes
System Costs	13,440	Hard costs for 4.0/4.8 MW's (AC/DC)
Other Costs	2,000	Closing costs & Debt Service Reserve
Total Costs	15,440	
Senior Debt	12,352	18 year @ 4.8%
Equity & Jr. Capital	3,088	80/20 leverage & 1.4 debt service coverage
Total	15,440	

Project Cash Flow



Item	Annual	Notes
Power Generation	6,144 MWh	Southern Ontario
Power Purchase Agreement	\$280 per MWh	Fixed for 20 years
Annual Revenue	\$1,720,320	Paid monthly
EBITDA	\$1,470,320	After rent and O&M
Debt Service	\$1,040,220	1.41 DSCR
Equity Distributions	\$430,100	Pre-tax

Results Ontario Example



- Pre-tax equity return of 14%
 - After-tax equity return of 12%
 - Contracted rate of \$280 per MWh
 - Base value for power of \$90 per MWh
 - FIT premium of \$190 per MWh
 - 68% benefit from FIT contract
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PJM Market Drivers



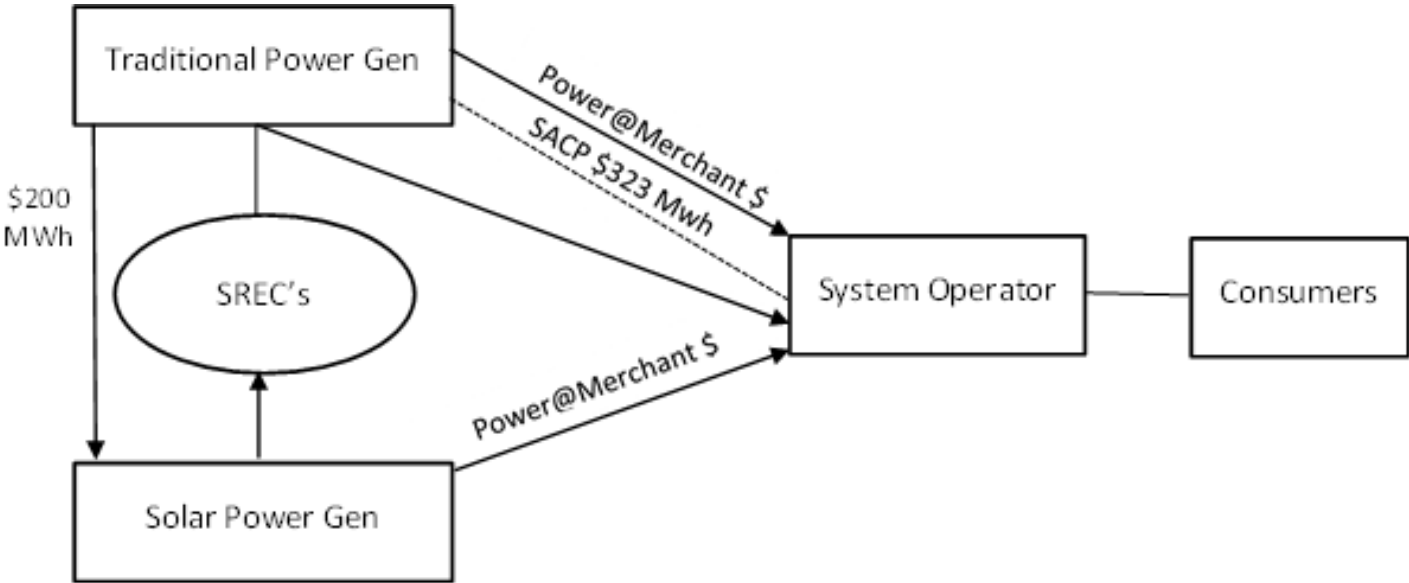
- PJM is regional transmission organization – 14 states
 - Merchant power market – PJM
 - Solar Renewable Energy Credits – State/NJ
 - Investment Tax Credits - Federal
 - Tax depreciation - Federal
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Solar Renewable Tax Credits



- Tradable certificates (SREC) representing 1 MWh of electricity generated by solar projects
 - Traditional power generators required to buy SREC or pay Solar Alternative Compliance Payment (SACP)
 - Buyers are traditional power generators – 20% of production, annual requirement
 - Market price determined by demand & supply and the SACP amount
 - The SACP (NJ) decreasing each year, currently - \$323
 - Weighted average price for SREC is approximately \$200
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SREC Diagram



Investment Tax Credit

- Federal tax credit
 - Equal to 30% of system cost
 - Available upon COD
 - ITC is transferable
 - Potential buyers are tax payers
 - Sold by solar project
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Tax Depreciation



- Accelerated depreciation
 - 85% over 5 years or 2 times the DB rate
 - Creates additional tax shield
 - Tax equity investor – values tax shield
 - Tax equity exits upon achieving target return
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PJM Sources & Uses



Item	000's	Notes
System Costs	13,440	Hard costs for 4.0/4.8 MWs (AC/DC)
Other Costs	2,000	Closing costs and reserves
Total Costs	15,440	
Bridge Loan	4,032	Repaid from ITC post COD
Term Loan	4,900	6 years
Tax Equity	1,228	Repaid from tax shield, then retired
Equity	5,280	Long term equity
Total	15,440	

Project Cash Flow



Item	Annual	Notes
Power Generation	6,144 MWh	Match Ontario example
Merchant Power Revenue	\$60 per MWh	Subject to PJM market
SREC Annual Revenue	\$200 per MWh	Subject to SREC NJ market
Annual Revenue	\$1,597,400	
EBITDA	\$1,347,440	
Debt Service	\$987,707	1.36 DSCR
Distributions	\$359,733	

Results of PJM Example

- Pre-tax equity return of 13%
 - After-tax equity return of 9%
 - Merchant Power rate of \$60 per MWh
 - SREC premium of \$200 per MWh or 49%
 - ITC benefit of 27% of project costs
 - Other tax benefits of 8% of costs
 - 84% benefit from SREC, ITC and tax
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Key Drivers for PJM



- Involves federal accommodation for tax benefits
 - Requires transferability of tax benefits
 - Merchant power revenue subject to market
 - SREC subject to artificial market and regulation
 - Results in shorter term debt financing
 - Long equity merchant based and SREC's
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Lessons Learned



	FIT Model	PJM/NJ Model	Notes
Tax Benefits	Not so much	Yes, requires Feds	Can vs US
Rate Payer Support	Directly	Indirect for SREC/ SACP program	Greater for FIT
Financial Leverage	Long term support from rate base	Short term from tax base	Debt retired quickly in PJM
Life of Project	Term of FIT – 20 years followed by merchant	Indefinitely – merchant basis	About the same
Investment Opportunity	Attractive for debt & equity due to stability	Long term equity – merchant based	Predictable returns for FIT
Closing Risk	Low – conditional offer with IESO	Involves four programs and regulators	Greater challenge in PJM

Recent Developments



- Ontario - Large Renewable Procurement results in 140 MW @ \$141.5 to \$178.5 per MWh
 - Low pool prices in Alberta due to low NG prices
 - ITC extended – 30% until end of 2019
 - Dubai solar RFP priced at \$US 30 per MWh
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The End
