



Woodland-VCEA Impact Analysis

Mar 20, 2017 Presentation

Revised Apr 7, 2017



Agenda

- Background
- Load Analysis
- Financial Analysis
- Costs by Rate Class
- Risks
- Cost/Benefit to Joining VCEA

Background

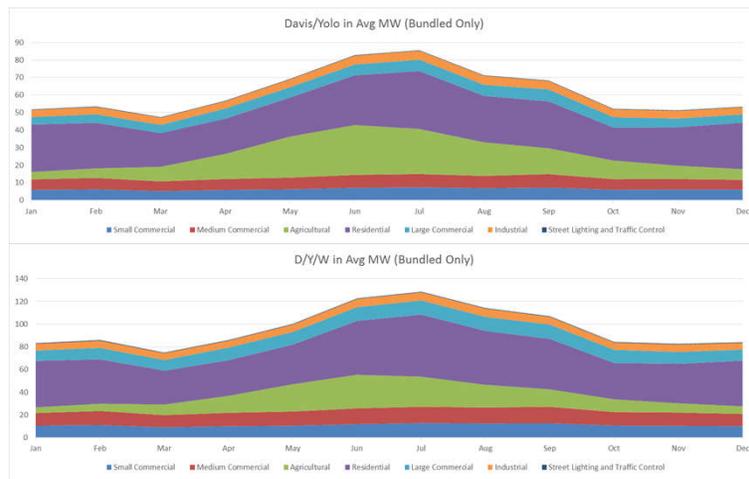
- 2015-2016 TEA prepared report for City of Davis and Yolo County on feasibility of CCE
 - Examined Stand-alone, Joining MCE & Outsourced
 - Supported recommendation by Davis Citizens Advisory Committee to do Stand-alone
- Current Analysis is Update of Davis-Yolo analysis and extended to include Woodland

Current Analysis

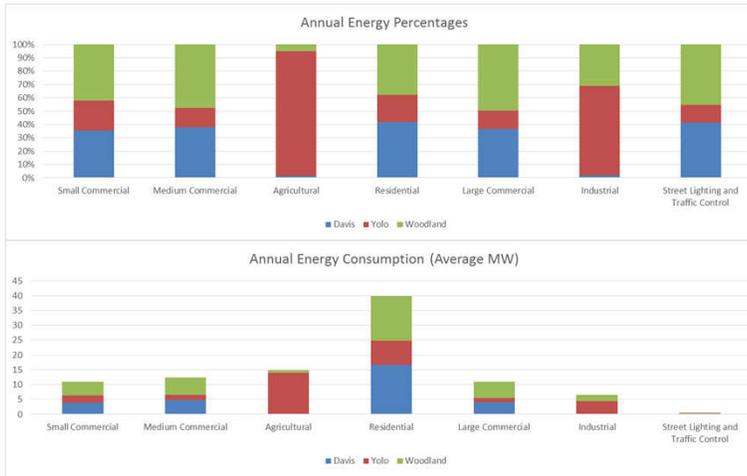
- Updated key inputs
 - New energy, capacity and renewables prices (as of March for energy, and Jan/Feb for Capacity & Renewables)
 - New PG&E generation and PCIA rates and rate forecasts (hired new rates consultant)
- Incorporated Woodland load
- Focus on key issues for Woodland
 - Impact of larger load & load diversification
 - Potential economic contribution

Load Overview

Historical Load by Class



Historical Load – D/Y/W by Class

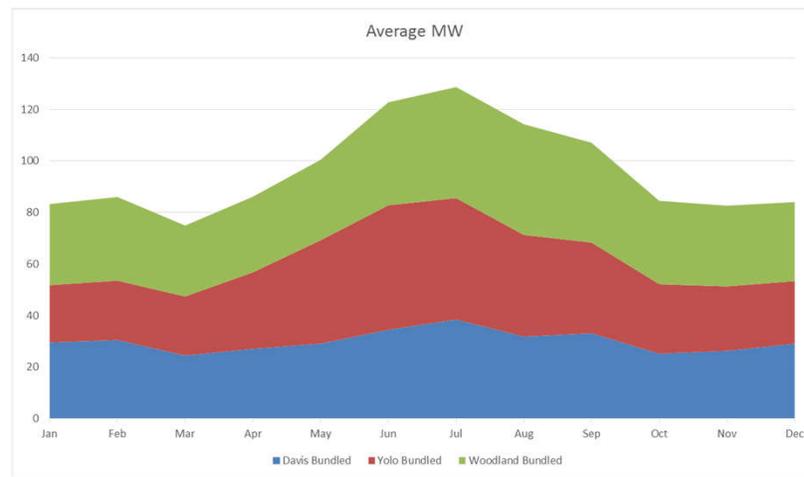


Small Commercial:
load < 17.1 avg kW & demand not > 75 kW for 3 consecutive months

Med Commercial:
demand < 499 kW for 3 consecutive months

Large Commercial:
demand > 499 kW for 3 consecutive months

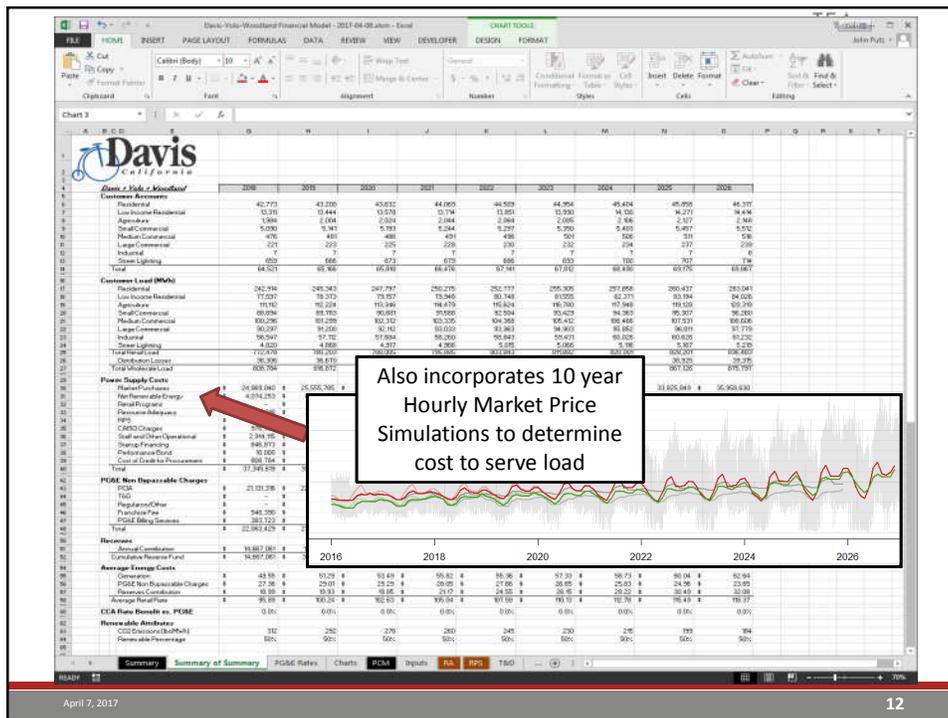
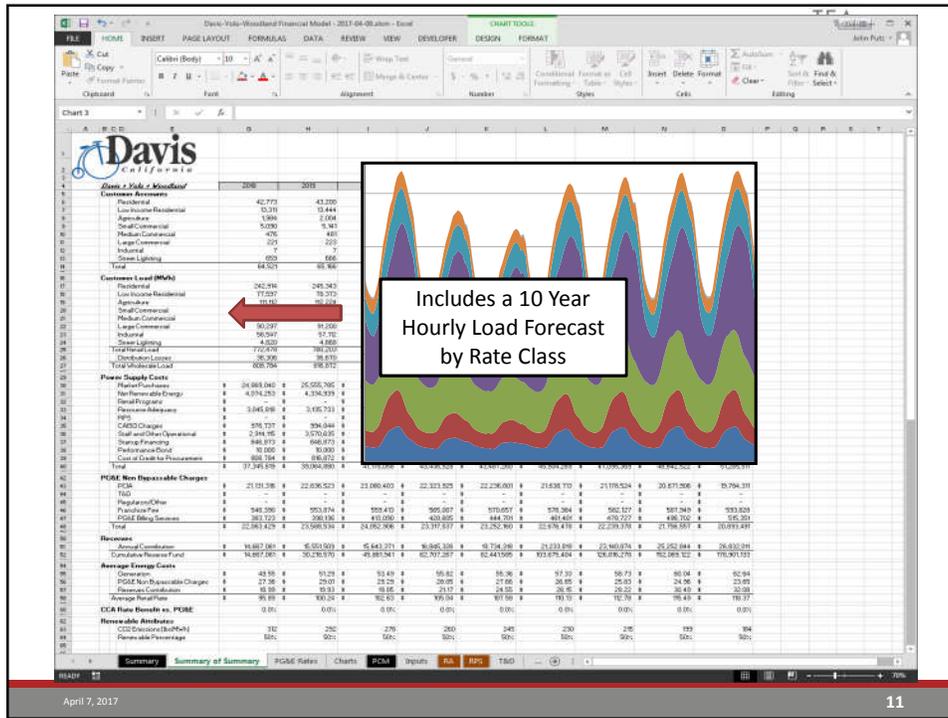
Historical Load – Total Bundled Load

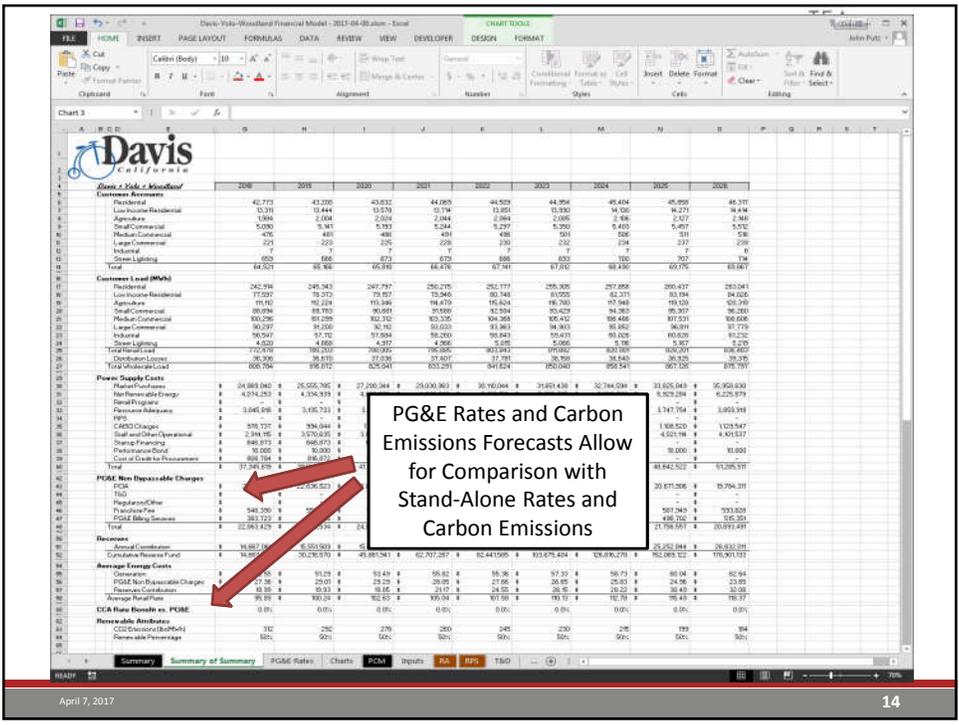
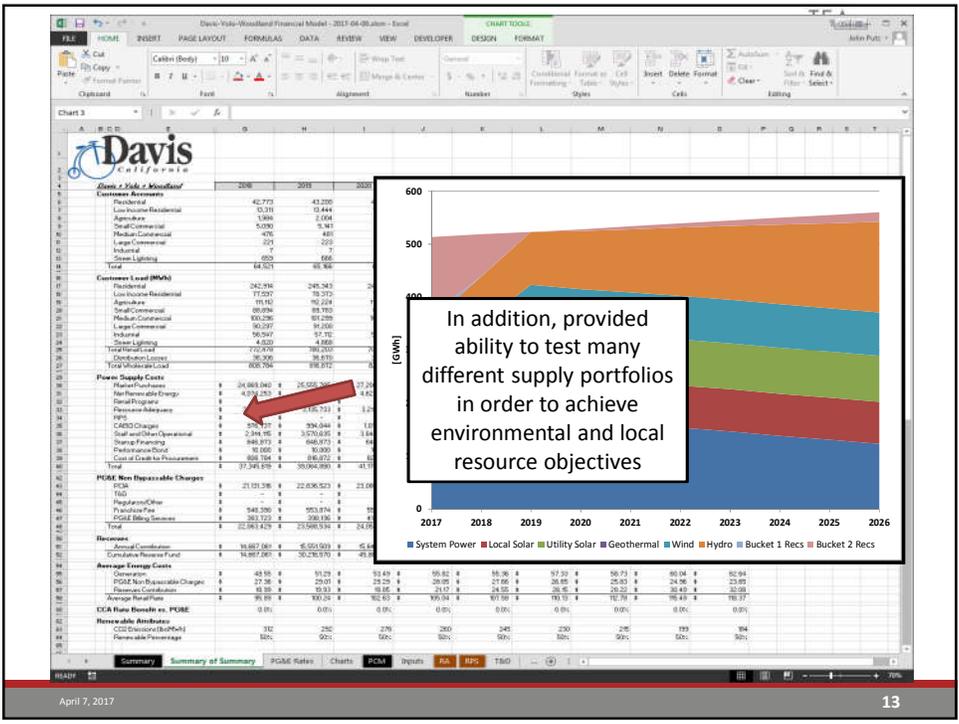


Financial Analysis

10 Year Pro Forma to assess feasibility of VCEA w/ & w/o Woodland

	2006	2008	2010	2011	2012	2013	2014	2015
Customer Revenue								
Residential	42,773	43,200	43,832	44,069	44,500			
Low Income Residential	12,371	12,444	12,578	12,776	12,858			
Apartment	1,586	2,004	2,034	2,044	2,064			
Small Commercial	9,000	9,341	9,793	9,244	9,279			
Medium Commercial	476	480	480	481	482			
Large Commercial	273	277	279	279	279			
Industrial	650	660	667	671	674			
Street Lighting	44,503	44,946	45,390	45,736	46,082			
Customer Load (MWh)								
Residential	242,946	245,243	247,797	250,275	252,771			
Low Income Residential	77,527	78,272	79,027	79,246	80,144			
Apartment	19,110	19,204	19,246	19,479	19,524			
Small Commercial	60,874	61,183	61,691	61,995	62,324			
Medium Commercial	800,296	802,280	803,242	803,295	804,309			
Large Commercial	90,297	91,056	92,142	91,023	91,363			
Industrial	94,947	97,102	97,884	98,260	98,643			
Street Lighting	4,420	4,488	4,517	4,566	4,566			
Total Residential	772,476	781,257	787,967	792,586	797,913			
Power Supply Costs								
Market Purchases	24,889,040	25,022,795	27,246,384	29,000,861	30,160,044			
Rate Recovery	4,076,121	4,334,979	4,422,000	4,642,242	4,700,956			
Small Pigeons	3,043,098	3,195,751	3,298,040	3,327,485	3,426,975			
PG&E	576,737	594,044	1,018,828	1,030,300	1,048,005			
Small and Other Commercial	2,344,195	2,370,035	2,442,047	2,744,888	2,795,956			
Energy Performance	848,872	846,872	848,872	848,872	848,872			
Performance Bond	10,000	10,000	10,000	10,000	10,000			
Cost of Distribution	869,764	876,872	883,841	891,228	897,913			
Total	37,341,879	38,068,890	41,198,056	43,436,529	44,497,300			
PG&E Net Responsible Charges								
PG&E	21,131,336	22,036,523	23,086,453	22,323,525	22,226,001			
PG&E	-	-	-	-	-			
Regulatory Office	-	-	-	-	-			
Regulatory Office	446,206	503,674	589,493	566,011	570,657			
PG&E Policy Services	383,122	396,136	410,090	400,895	444,701			
Total	22,961,624	23,946,333	24,086,036	23,390,431	23,241,359			
Revenues								
Annual Commodity	14,867,081	15,051,939	15,442,211	16,045,238	16,724,286			
Customer Payment Fund	14,927,051	15,212,370	15,512,841	16,217,225	16,443,969			
Average Energy Costs								
PG&E	44.18	45.29	52.69	55.81	55.36			
PG&E Net Responsible Charges	27.36	29.01	31.25	29.95	27.66			
PG&E Contribution	16.82	16.28	18.44	25.86	27.69			
Average Retail Price	88.89	90.54	102.85	109.59	109.70			
VCEA Rate Benefits vs. PORE	0.0%	0.0%	0.0%	0.0%	0.0%			
Revenue Available	310	240	276	260	245			
Revenue Percentage	50%	50%	50%	50%	50%			





Financial Viability – Headroom

- Headroom = Difference between PG&E’s Gen Rates for Bundled Customers and Cost Paid by a CCE Customer
 - Costs Paid by CCE Customer:
 - CCE’s Costs (overhead, supply)
 - PG&E PCIA – Exit fee charged to CCE customers but not PG&E Bundled Customers
- Headroom with respect to a base-case costs
- Reflects “Surplus” which can be applied to:
 - Building Reserves
 - Rate savings
 - Investment in lower GHG content, local renewables, programs, etc.

Headroom Calculation – Portfolio Assumptions

- Only Bundled Load (no DA customers) w/ 10% Opt-outs
- 50% Renewable, 5% Lower GHG Emissions than PG&E
- No local or owned supply
- No specific reserves set-aside
- No funding for local programs
- Using overhead assumptions from Davis/Yolo Study
- Base case for PG&E rates & current market prices

Headroom

	Davis + Yolo	Davis + Yolo + Woodland	Notes on Differences
<u>2018</u>			
Load (MWh)	495k	772k	
Supply Cost (\$/MWh)	\$42.58	\$42.68	Larger % of Peaking (Res/Com) load
Overhead (\$/MWh)	\$9.49	\$6.88	Costs Spread over more customers
Headroom (\$/MWh)	\$15.39	\$18.97	Difference between PG&E Gen Rates & CCE Customer Costs (= Supply + O/h + PCIA)
Headroom (\$)	\$7.6mm	\$14.7mm	Greater Headroom / customer * more customers
<u>2020</u>			
Load (MWh)	505k	788k	
Supply Cost (\$/MWh)	\$45.66	\$45.75	
Overhead (\$/MWh)	\$10.82	\$7.74	
Headroom (\$/MWh)	\$15.71	\$19.84	
Headroom (\$)	\$7.9mm	\$15.6mm	

April 7, 2017

17

Economic Impact

- CCE Redirects Funds which would otherwise flow out of Davis/Yolo/Woodland Area
- Headroom
 - will primarily flow to local economy through rate discounts, local programs, reserves
 - ~\$14mm/year
- Admin
 - ~\$2mm/year
- Local Supply
 - Fraction of local supply expenditures will go to local economy (solar installers, etc.)
 - Total Supply Cost ~\$40mm/year

April 7, 2017

18

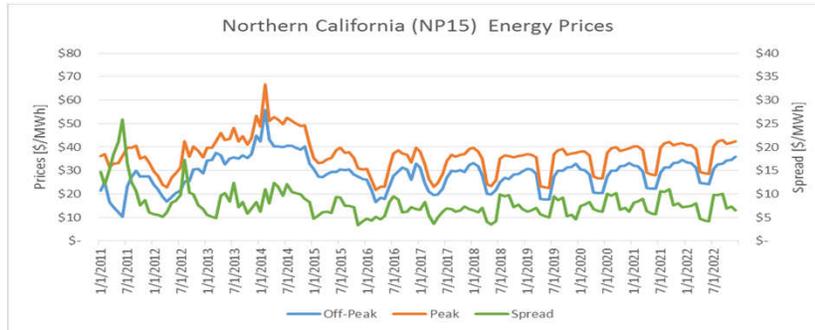
Rate Class Costs/Revenues

Cost to Serve vs Revenue from Rate Classes

- CCE's Rate Structures
 - Generally copy PG&E's but offer discount
 - Relying on PG&E's Cost-of-Service being accurate
 - CCE can structure rates however it likes
- Cost of Rate Class
 - Depends on pattern of energy use
 - summer, peak hours more expensive
 - Depends on when and how large peak use is
 - Coincidence with system peak
 - Cost for capacity higher in peak months (summer)

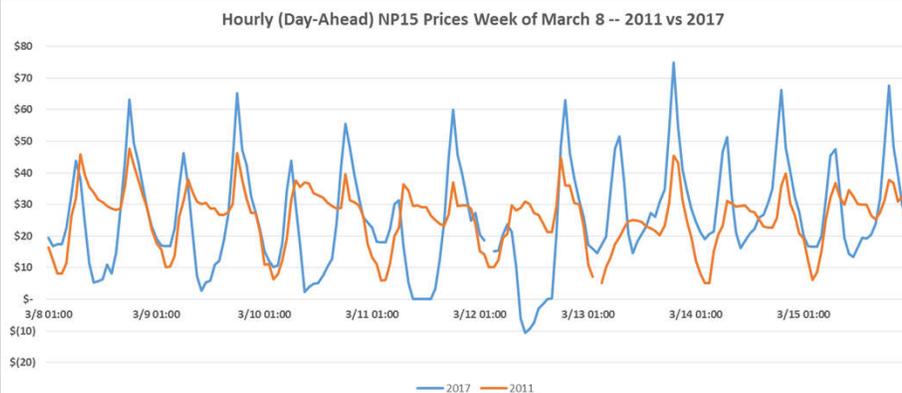
Energy Costs

- Peak – Off-Peak Spreads
 - With \uparrow in solar, Peak – Off-Peak Spreads have \downarrow
- Energy Costs Function of Peak/Off-Peak Ratios



Energy Costs

- Hourly Shapes
 - Solar-based Duck Curve leading to higher afternoon peak, lower midday prices



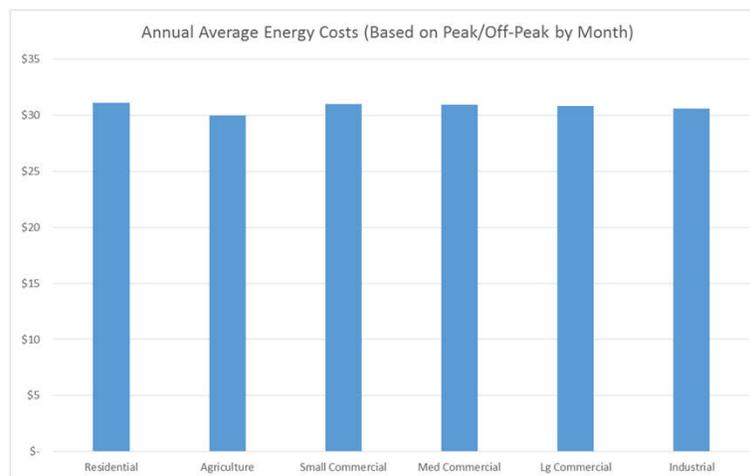
Energy Costs

- Peak/Off-Peak Usage → Determines relative cost to serve for energy
- Presumably PG&E COSA based on average shapes over service area
- Likely Davis/Yolo/Woodland has higher Peak/Off-Peak than average
- However, on daily basis, for non-TOU rates billed based on PG&E load profiles
- As change to TOU rates, usage patterns should correspond more closely to charges

April 7, 2017

23

Energy Costs by Rate Class



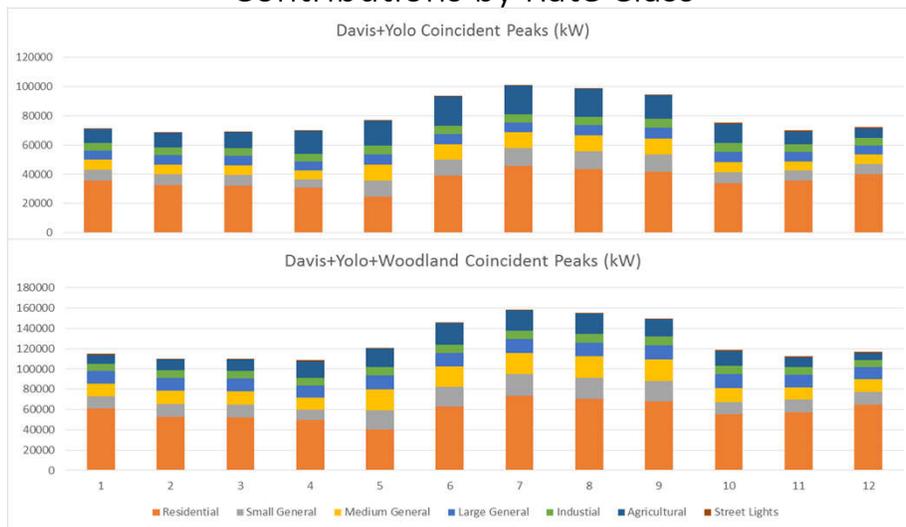
April 7, 2017

24

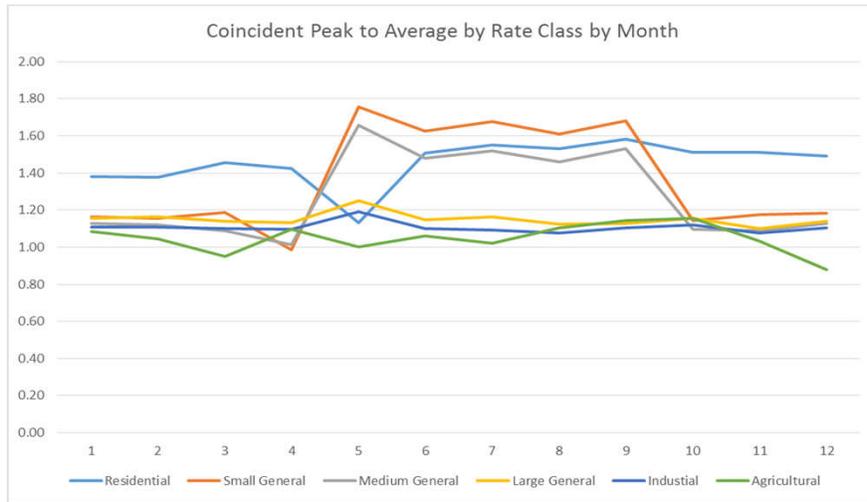
Demand (capacity) Costs

- Relative cost depends on (forecasted) coincidence of peak demand with system peak
- Some rate classes (large commercial, industrial, agriculture) include demand charges
- System peaks likely pretty correlated with D/Y/W peaks

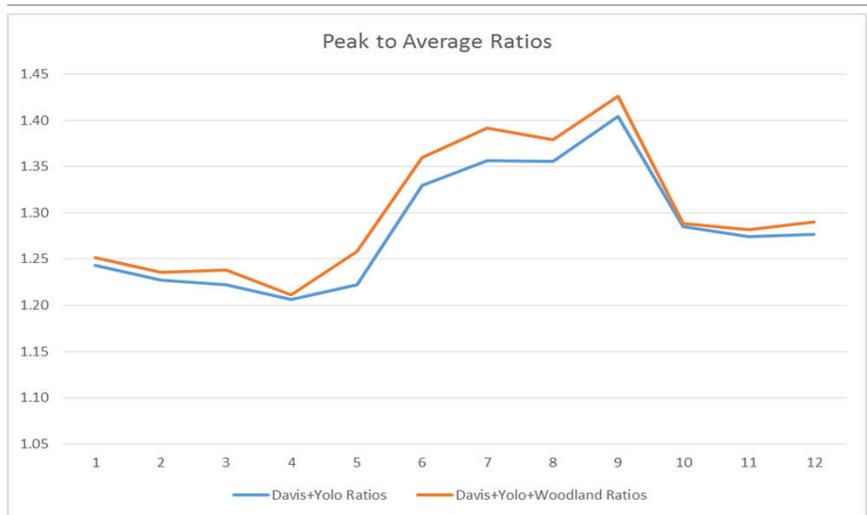
D/Y Peaks vs D/Y/W Peaks Contributions by Rate Class



Rate Class Peaks by Month



Peak/Average Ratios



Overall Rate Impacts of joining VCEA

- Overall Woodland joining VCEA Reduces Costs through spreading overhead cost over larger customer base
- Little impact on Supply Cost and Revenue
 - Supply cost on \$/MWh basis ~ same
 - Revenue on \$/MWh basis ~ same

Specific Rate Classes

- Industrial
 - Expect PG&E COSA, which provides basis for CCE rates is fair
- Direct Access
 - CCE's have not auto-enrolled DA accounts
 - DA accounts can join – function of rates offered & environmental/other objectives
- Net Energy Metering
 - NEM is subsidized by other ratepayers in CCE
 - CCE's pay a premium for surplus power produced in low-priced periods
 - Don't have data to know how big an impact in D/Y/W

Risks

Risks to CCE's Generally – Regulatory

- PCIA has been rising rapidly
 - Still undercompensating IOUs (according to IOUs)
 - If PCIA continues to increase significantly or is reworked, potential for CCE's to have more difficulty competing
- Wild Cards
 - Energy business is highly regulated
 - Many opportunities for Leg/Reg to impact CCE's
- Mitigations
 - Keep cost structure flexible
 - Build reserves
 - Engage in reg/leg efforts w/ other CCE's

Market Risk

- Key Metric is CCE rate competitiveness w/ PG&E
- CCE supply costs can become expensive relative to PG&E
 - Through PCIA, CCE essentially still owns PG&E supply portfolio
 - If CCE locks in its own high-price supply and market prices decline can get upside-down to PG&E
- Mitigations
 - Build reserves
 - Only moderate amount of long-term supply contracts

Opt-Out Risk

- Primarily a Function of Rate Competitiveness
- MCE customers have shown willingness to pay modestly higher premiums for short periods of time
- Mitigations
 - Maintain rate competitiveness
 - Build brand loyalty through local, service and environmental focus

Sensitivities

- PCIA
 - Any increase is \$-per-\$ decrease in headroom
 - Over last 2 years, rose ~\$20/MWh
 - Expect it to rise more slowly, but may be wrong
- PG&E Generation Rates
 - Any decrease is \$-per-\$ decrease in headroom
 - Large hydro gen, low market prices ↓ PG&E gen cost
- Opt-outs
 - Not too sensitive to increased opt-outs within normal range of CCE opt-outs (0%-15%)
 - Larger opt-outs can lead to death spiral as fixed costs are spread over smaller revenue base
- Supply portfolios
 - Higher cost, longer obligation lead to higher risk of rate uncompetitiveness given continued decline in renewable prices
- Customer type / DA participation – low risk / conservative assumptions

Costs / Benefits of Woodland joining VCEA

Entity	Costs	Benefits
Woodland	Reputational risk should VCEA fail (no financial risk); Loss of share of initial startup costs should VCEA fail to launch	Economic benefit; Lower costs to customers & city; Climate action goals
Customers	None (can choose to opt-out at any time)	Lower rates; greener supply; local programs; better service
VCEA	Potential dilution of control	Better economies of scale; greater reach; more stable