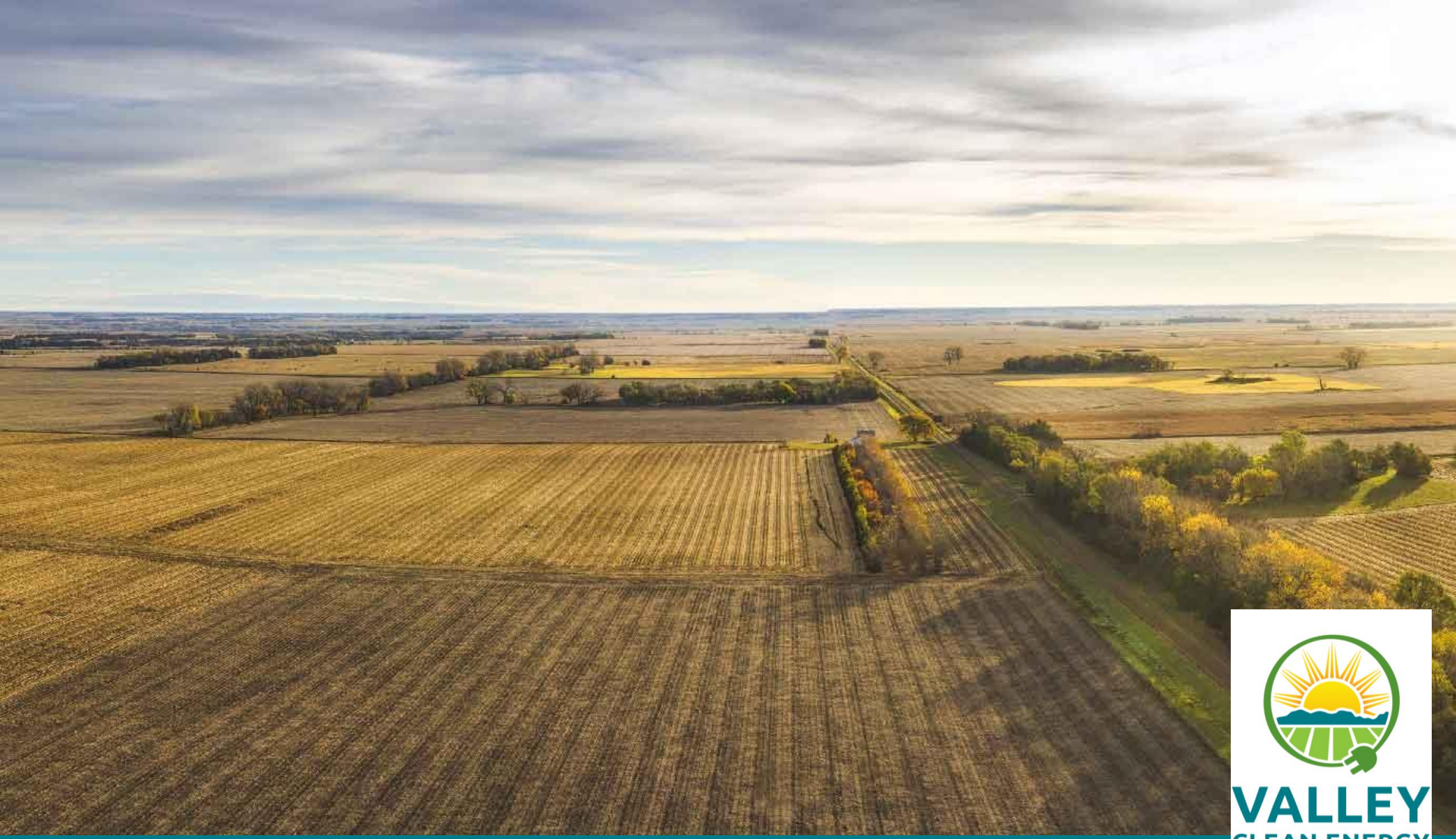


Valley Clean Energy Community Advisory Committee

Thursday, September 26, 2019 Meeting
Woodland City Council Chambers

Item 8 - 2021 Short Term Procurement Planning/Local Renewable Solicitation

What we'll cover:

- Procurement Update for 2020.
- Procurement Plan for 2021 Power Needs
- Local Renewable Procurement

VALLEY CLEAN ENERGY

Item 8 - Procurement Update for 2020

Procurement Update for 2020

VALLEY CLEAN ENERGY

Item 8 - Procurement Update for 2020

VCE Net Position

Portfolio Component	2019	2020	2021	2022	2023
Renewable	102.0%	66.5%	0.0%	0.0%	0.0%
Large Hydro	104.2%	100.0%	0.0%	0.0%	0.0%
Resource Adequacy	109.0%	136.0%	89.7%	89.1%	0.0%
Fixed Priced Energy	110.5%	84.5%	0.0%	0.0%	0.0%
Average	106.4%	96.8%	22.4%	22.3%	0.0%

VALLEY CLEAN ENERGY

Item 8 - Procurement Update for 2020

2020 Projected Power Supply Cost

2020 Power Supply Cost	Baseline Forecast	Current Forecast	Net Savings (Costs)
Market Energy	$ 35,190,464	$ 30,865,292	$ 4,325,172
CAISO Variable Fees	$ 133,350	$ 133,350	$ -
REC Costs	$ 2,806,279	$ 3,204,239	$ (397,959)
Resource Adequacy Cost	$ 7,559,691	$ 10,922,100	$ (3,362,409)
CAISO GMC Cost	$ 335,291	$ 335,291	$ -
Market Services Charge	$ 71,176	$ 71,176	$ -
System Operations Charge	$ 252,115	$ 252,115	$ -
SCID Fee	$ 12,000	$ 12,000	$ -
Carbon Free Premium	$ 1,272,271	$ 1,476,091	$ (203,820)
2020 Total Power Cost	**$ 47,297,346**	**$ 46,936,363**	**$ 360,983**

VALLEY CLEAN ENERGY

Item 8 - Procurement Plan for 2021 Power Needs

Procurement Plan for 2021 Power Needs

VALLEY CLEAN ENERGY

Item 8 - Procurement Plan for 2021 Power Needs

2020 Procurement Plan

- Board approval in January
- Apply primarily to 2021 short term procurements
- 2021 clean power mix targets

VALLEY CLEAN ENERGY

Item 8 - Procurement Plan for 2021 Power Needs

Anticipated Long Term Renewables

	Project COD	PPA Capacity	2020	2021	2022	2023
Short Listed Projects						
Project 1 Phase 1	4/1/2021	36 MWs	0	81,560	102,795	102,795
Project 1 Phase 2	7/1/2021	36 MWs	0	48,711	102,795	102,795
Project 2 Phase 1	10/1/2020	50 MWs	21,380	139,281	139,281	139,281
Project 2 Phase 2	7/1/2021	50 MWs	0	65,889	139,281	139,281
Project 2 Option	7/1/2022	50 MWs	0	0	65,889	139,281
Total Supply		222 MWs	21,380	335,440	550,040	623,432
Incremental Contribution to Renewable Content			3.0%	46.9%	76.9%	86.9%

VALLEY CLEAN ENERGY

Procurement Plan for 2021 Power Needs

Power Mix with Long Term Renewables

	2021	2022
Renewable Content	46.9%	76.9%
PCC1	46.88%	100.00%
PCC2	0.00%	0.00%
Required RPS Minimums	35.8%	38.5%
PCC1	100%	100%
PCC2	0%	0%
Incremental Discretional Renewables	11.1%	38.4%
PCC1	100%	100%
PCC2	0%	0%
Large Hydro	33%	23%
Total "Clean"	80%	100%

VALLEY CLEAN ENERGY

Item 8 - Procurement Plan for 2021 Power Needs

Issues for Consideration

- **Delivery risk of long-term projects**
  - **Minimum target for 2021 short-fall?**
  - **PCC1 or PCC2 for any shortfall?**
- **PCC2 power is no longer carbon free**
- **Large Hydro**
- **AB1110 requirement for GHG intensity reporting on Power Source Disclosure**
- **Remaining 2020 Procurements**

VALLEY CLEAN ENERGY

Item 8 - Local Renewables Procurement

Local Renewables Procurement

VALLEY CLEAN ENERGY

Item 8 - Local Renewables Procurement

- **Local renewable development is not robust**
- **Certain minimum requirements for project proposals will have to be relaxed**
- **“Open” solicitation**
- **Staff to return with proposed solicitation criteria**

VALLEY CLEAN ENERGY

Item 8 - Nexus to 2020 Integrated Resource Plan

Nexus to 2020 Integrated Resource Plan

VALLEY CLEAN ENERGY

Item 8 - Nexus to 2020 Integrated Resource Plan

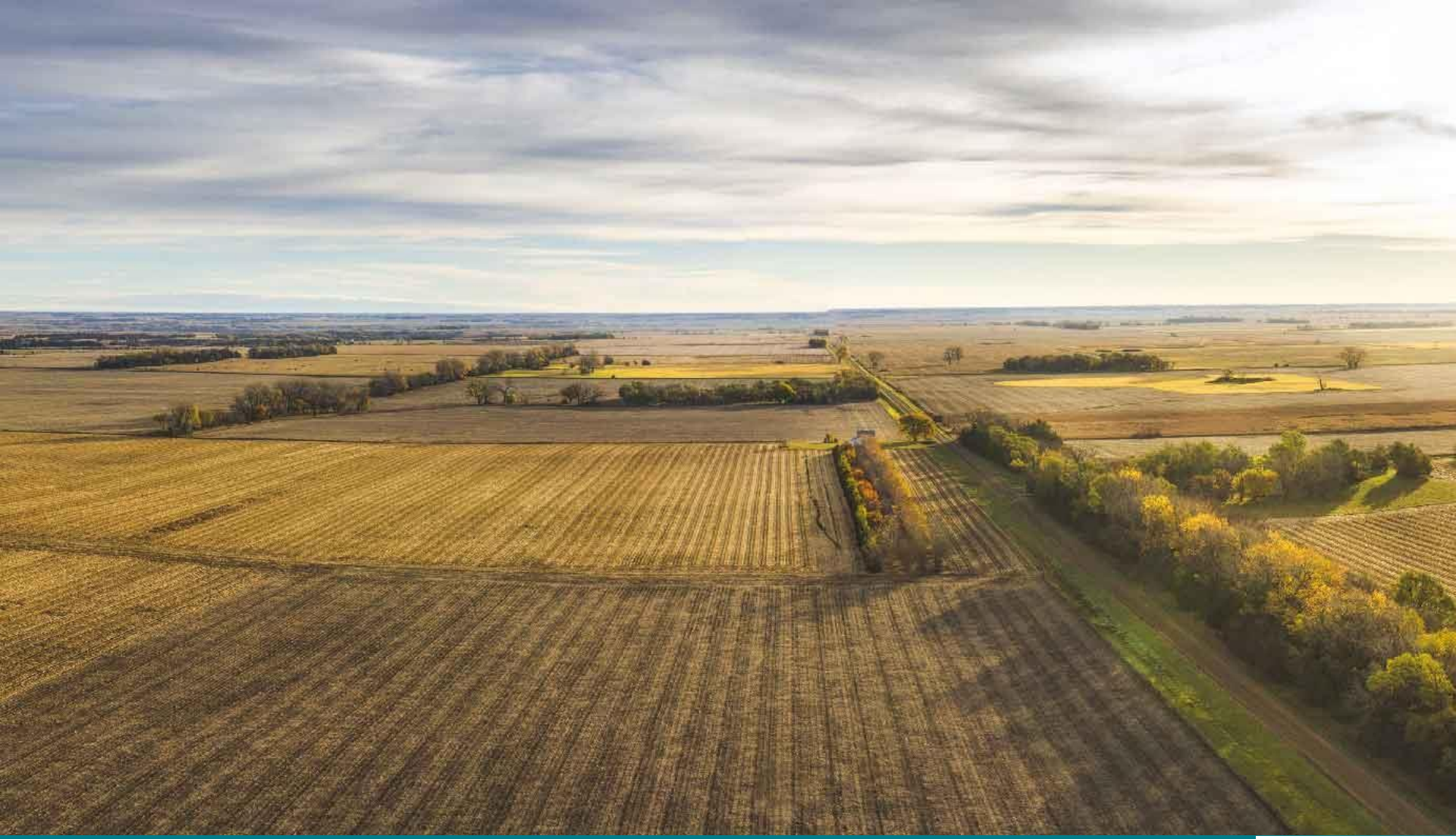
- **Local renewable solicitation and projection of quantities should be factored into the 2020 IRP**

VALLEY CLEAN ENERGY

Item 8 - Additional Discussion

Additional Discussion?

VALLEY CLEAN ENERGY



Item 9 - 2020 Integrated Resource Plan

CAC Meeting, Thursday, September 26, 2019
Woodland City Council Chambers

VALLEY
CLEAN ENERGY

Item 9 - 2020 Integrated Resource Plan

Approximate timing	Activity
August 16, 2019	2018 Preferred System Plan LSE Progress Status Data Request Due
September 20, 2019	CPUC staff release proposed data and requirements for 2020 filing
September, 2019	CPUC release of preliminary RESOLVE Reference System Portfolio
October, 2019	CPUC formal release of Reference System Plan
Oct/Nov, 2019	VCE Board introduction/kick-off of VCE IRP Process
December, 2019	CAC and public meeting on IRP scope and scenarios covered
December, 2019	Proposed Decision Released on Reference System Plan
December, 2019	Final templates, tools, and filing instructions released
February, 2020	Commission Decision on Reference System Plan
February, 2020	Draft IRP ready / CAC & Public Review
March, 2020	VCE Board discussion and feedback on draft IRP & CAC Recommendations
April, 2020	VCE Board Adoption of IRP
May 1, 2020	CPUC IRP Filing Due

VALLEY CLEAN ENERGY

Item 9 - Regulatory Developments Affecting the Resource Plan

- **2020 CPUC proposed filing requirements** posted on September 20 – comments due by October 25:
  - All resource portfolios must be "conforming" - use CPUC standard list and assumptions for potential resources, cost of new entry, CEC IEPR load forecast, GHG assumptions, natural gas price
  - Alternative portfolios acceptable but focused strictly on resource portfolio options
  - New GHG Benchmarks based on 2019 load forecast
  - Improved methodology for reporting emissions – GHG as well as criteria pollutants

- **IRP Proceeding ordering (R.16-02-007) procurement of 2,500 MW of new resources for SCE service territory and requesting ARB to delay retirement of OTC units to 2023 for 2,500 MW to 3,750 MW**
  - No new resources ordered in PG&E service territory but OTC delay will make more capacity available and may have favorable impact on capacity prices
  - SCE will procure "system capacity" which means costs may be shared through the cost allocation mechanism and will likely include costs and capacity credit for VCE

- **RPS Proceeding (R.18-07-003)**. Behind-the-meter solar PV to be modeled as a grid resource and assigned ELCC value of 0.1. ELCC values for wind and solar TBD but likely to go down significantly => more capacity must be procured to meet reliability requirements

- **Still pending:** preliminary and final modeling input assumptions from the CPUC

VALLEY CLEAN ENERGY

Item 9 - Potential Considerations for CAC and VCE

- **IRP resource scenarios to consider**
- **2030 GHG goals and path to 2030**
- **Programs – which ones, when and why?**
- **Local resources roadmap– processes that could pave the way for increased local portfolio of renewables, DERs and demand measures, such as:**
  - Simplified or standardized permitting (identifying barriers and solutions)
  - Identify potential locations
  - Potential partnerships
- **Several 2018 IRP Action Plan items may fit better in internal VCE strategy process:**
  - Climate change impacts on load
  - Demand side programs
  - Electrification

VALLEY CLEAN ENERGY

Questions?

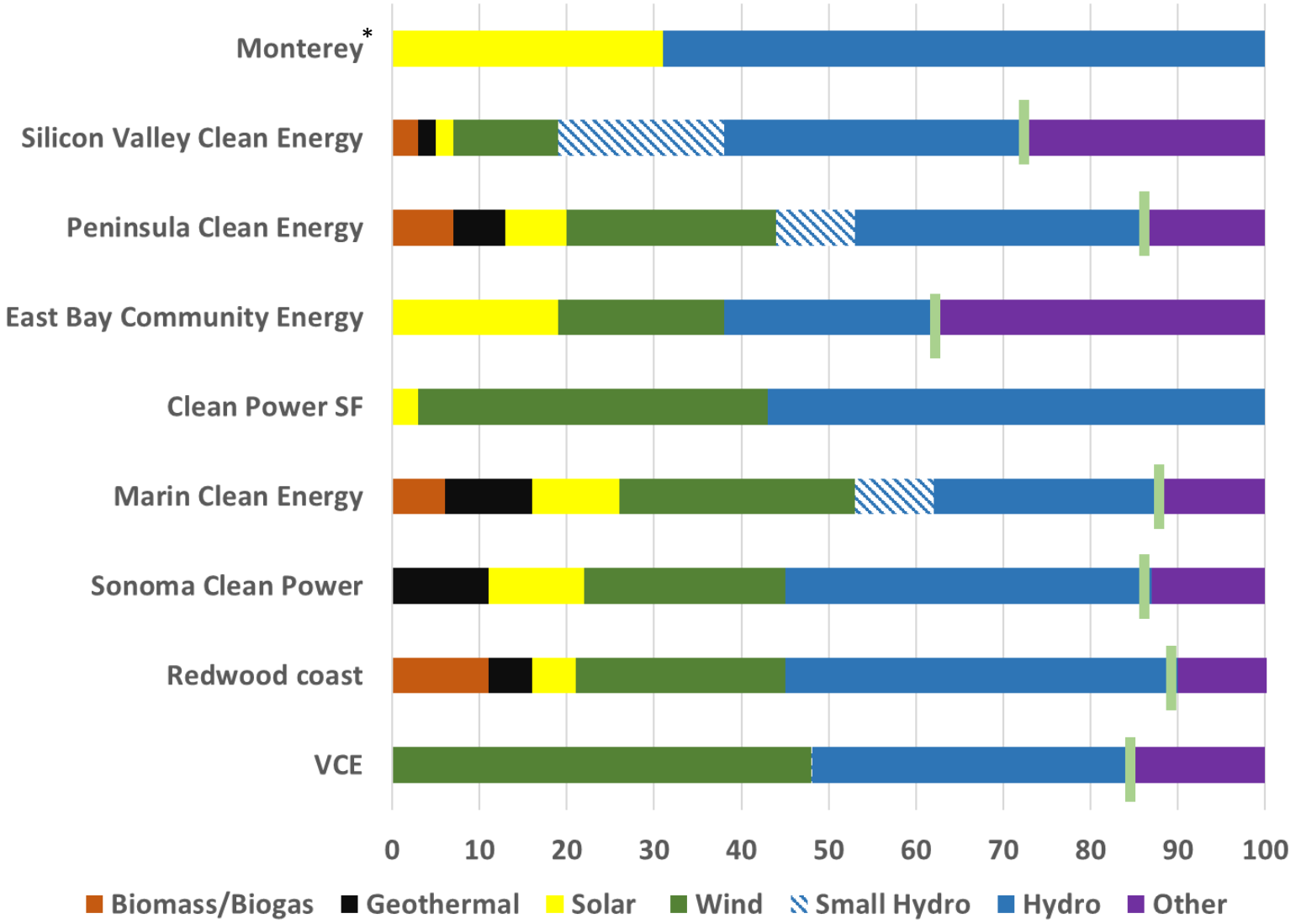
VALLEY CLEAN ENERGY

Item 9 - Snapshot of selected CCAs

CCA	Customer # (000)	RPS (%)	Carbon Free (%)	Storage (MW)	Joint Efforts?	Local
VCE	54.2	42	75	3 MW by 2022		Small hydro
Redwood Cost	62	44	89	Planning Solar+Storage at Humboldt airport	HSU+PG&E for solar+storage microgrid (50% EPIC funded); EDP renewables (Offshore)	Local biomass; offshore wind
SCP	225	48	87	Planning Customer + Grid	Stem (customer sited)	Has local product as option
MCE	470	61	89	1.3MW installed; remainder TBD		Several projects, e.gt. Novato landfill gas; Richmond solar; FIT
CPSF	376	40	100	6.5 MW by 2024		?
EBCE	533	38	62	Announced Solar 100 MW+ Storage 30 MW in Fresno		Alameda solar (57MW)
PCE	293	50	85*	TBD		20 MW local by 2025; local pilot projects
SVCE	270	38	72	150MW solar +45MW storage w Monterey	Joint procurement with Monterey (Kings county)	No. IRP stating intent to issue local RFO
Monterey	277	31	100	150MW solar +45MW storage w SVCE	Joint procurement with SVCE	?

VALLEY CLEAN ENERGY

Item 9 - Resource Mix of selected CCAs



VALLEY CLEAN ENERGY

* Estimate based on stated RPS and carbon goals – exact mix not available

Item 9 - Resource portfolio considerations

- A young, small CCA such as VCE needs to carefully balance costs and renewables. VCE's average, all-in cost for wholesale power is currently $55/MWh
- To manage costs and rapidly build RPS content, VCE will need to focus on lowest cost renewables
- Cost ranges for renewable technologies, provided by the CPUC in the last IRP cycle:

Renewable Resource Type	CPUC Cost Range
Solar	$25 - $55/MWh
Wind	$40 - $55/MWh
Geothermal	$75 - $100/MWh
Biomass	$95 - $125/MWh
Small Hydro	$50 - $120/MWh

- Geothermal, Biomass, and small hydro support round-the-clock RPS portfolio but are typically more costly which puts pressure on rates
- Over time, VCE can consider more diverse renewable types, including emphasizing local resources that provide that diversity, and will consider battery storage, as battery storage costs continue to fall, to provide some of the power characteristics that would otherwise be provided by baseload resources.

VALLEY CLEAN ENERGY

Item 9 - PPA Contracting

CALCCA shows over 2,000 MW of renewables under long term contracts with California CCAs, including 360MW of energy storage

VALLEY CLEAN ENERGY

Item 9 - Examples of Solar + Storage Deals in 2019

"This week Hawaiian Electric Company sent seven new solar-plus-storage contracts to state regulators. Six come in at record-low prices for the state, **under 10 cents per kilowatt-hour.** The projects, which now await regulatory approval, would add 262 megawatts of solar and 1,048 megawatt-hours of storage distributed over three islands. The company said the projects will provide power "in place of volatile prices of fossil fuels," which it quotes at about 15 cents per kilowatt-hour. " (GTM Research January 4, 2019)

" The Los Angeles Department of Water and Power is preparing to approve a utility-scale solar-battery project that could shatter U.S. records to date, in terms of both storage capacity and low price. 8minute Solar Energy's Eland Phase 1 and 2 projects would each consist of 200 megawatts of solar capacity, along with at least 100 megawatts — and more likely 150 megawatts — of battery capacity, according to Eric Montag, LADWP director of strategic initiatives. The total project would add up to 400 megawatts of solar and 300 megawatts of energy storage, and could be submitted for approval as early as LADWP's next commission meeting on July 23. … The projects would sell their 200 megawatts of solar capacity under a 25-year power-purchase agreement with LADWP at a price **of $19.97 per megawatt-hour**.
That's lower than the sub-$25 per megawatt-hour price that Texas municipal utility New Braunfels Utilities got for its 225-megawatt solar PPA with Engie-affiliated Long Draw Solar back in December…" (GTM Solar, July 1, 2019)

"NV Energy one-upped its huge 2018 solar and storage procurement on Tuesday, announcing three new solar projects totaling 1,200 megawatts paired with 590 megawatts of battery storage. … NV Energy did not disclose power purchase agreement prices for the projects, but 8minute said its project, at 300 megawatts of solar and 135-megawatts of 4-hour storage, will come in around $35 per megawatt hour. That's comparable with the projects NV signed last year, which ranged **between $30.94 and $36.94** per megawatt hour" (GTM Solar June 25,2019)

VALLEY CLEAN ENERGY

Item 9 - 2018 IRP Action Plan Update

Action Plan Item		Status
Procurement of long term renewable energy		
Establish long term renewable and GHG targets for 2030		
Key portfolio performance indicators		
Evaluate impacts of electrification on load forecast		
Evaluate impacts of climate change on load forecast		
Evaluate options for assuming responsibility for EE and DR programs		
Investigate non-battery storage technology and DR options		

VALLEY CLEAN ENERGY

Item 11 – Electrification Program Update

VALLEY CLEAN ENERGY

CAC Meeting, Thursday, September 26, 2019
Woodland City Council Chambers

Item 11 – Agenda

- We heard you
- Why electrification & transportation
- What others CCAs, SMUD, PG&E, Cool Davis, UCD are doing
- Rates & Services Task Group Meeting
- Low cost, high impact
- Next steps: Program Development Plan

Item 11 – Why electrification

Building codes

Electric Vehicles

Convection stove tops

Forklift Electrification

Electric School Buses

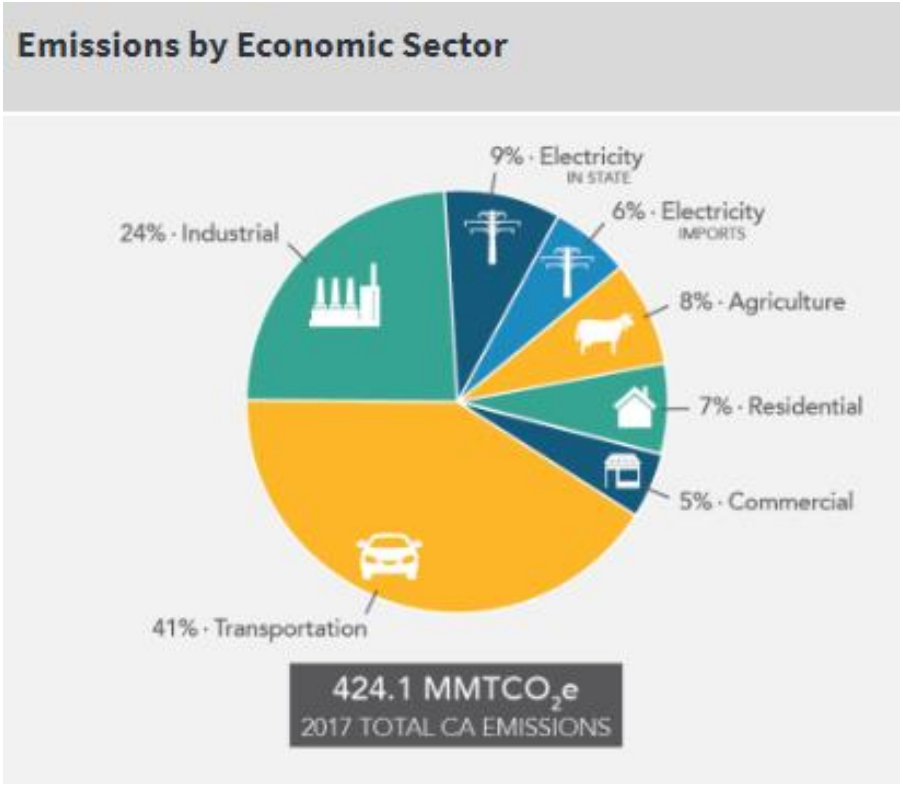
Electric heat pumps

Item 11 – Transportation is a high priority

Programs and products are designed to overcome barriers to de-carbonization

Majority of carbon reduction

Gov Brown's EO: 5 million ZEVs by 2030



California Air Resource Board, https://ww2.arb.ca.gov/ghg-inventory-data

Item 11 – Transportation is a high priority

- EV electricity sales help mitigate declining electricity sales forecast (TOU, direct access, increased efficiency, etc.)
- Finding new revenue sources
- Our customers can benefit from electricity as a transportation fuel
  - Higher performance than ICE
  - Can refuel at home at convenience, never stop at the gas station
  - EV's pay much of their own way

Item 11 – Why electrification & transportation

At Valley Clean Energy, our mission is to

- deliver clean electricity
- product choice
- greenhouse gas emission reductions

all with local control at competitive price

SACOG Grant

Everybody is doing it

- CCAs, SMUD, PG&E, Cool Davis, etc.

Item 11 –EV Programs

Electric Vehicle Utility Programs

Utility	Program Name	Target Audience	Incentives	Description	Additional Information
PG&E	Clean Fuel Rebate	Residential	$ 800	Available to new EV owner for using electricity as a clean fuel.	Additional EV incentives are available from the State--$1500-$2500, and federal tax credits--$2500-$7500.
	EV Fleet	Med/Large Business	Yes	Provide major assistance and cost share to install EV charging infrastructure at fleet locations. Can be customer-owned or PG&E owned.	
	EV Charge Network	Business	Yes	Install charging infrastructure at locations with 10 or more chargers (Muir Commons). Program currently closed.	
SCE	Clean Fuel Reward	Residential	$ 1,000	Available to new EV owner for using electricity as a clean fuel.	SCE pushes other available incentives--State, Fed, SCAQMD, etc.
	Charge Ready	Business	Yes	Install EV infrastructure--wiring, panels--everything except the chargers for installation of 10 or more (5 in low income areas).	Must operate infrastructure for 10 years. Must be networked and able to respond to DR events.
SDG&E	Champions for Clean Air	Teachers and First Responders	$ 1,000	$1000 rebate for EV purchase by teachers and first responders.	
	Power Your Drive	Multifamily	Yes	Provided low cost charger installations in multifamily developments.	Program fully subscribed. No funds currently available.
SMUD	Free Fuel for a Year	Residential	$ 599	Incentive is supposed to equal one year's worth of fuel. Can take a Level 2 charger instead of cash.	
	Charging Forward	Business	$ 6,500	Up to $6500 per connector for Level 2 Chargers.	Partnered with Center for Sustainable Energy and the CEC.
	Charging Forward	Business	$ 80,000	Up to $80,000 for DC fast chargers.	Partnered with Center for Sustainable Energy and the CEC.
LADWP	Charge Up LA!	Residential	$ 500	Rebate for installation of Level 2 charger.	
	Used EV rebate	Residential	$ 450	Provide rebate for purchase of used EV.	
MCE	Income Qualified EV Rebate	Residential	$ 3,500	Focused on low income households. Must meet income guidelines to qualify.	
	MCEv Charging	Multifamily	$ 3,000	Pay $3k/port for 2-20 ports in MF	Bonus of $500 if meter is on 100% renewable offering.
	EV Charge Network	Workplace and multifamily	$ 2,300	10 or more charging ports, $1150-$2300 incentive	Combined with PG&E rebates. $575-$725 from MCE not to exceed $2300.
Sonoma CP	Free Charger	Residential		Pay for charger, customer pays for installation.	Program linked to their demand response program, GridSavvy.
Peninsula CE	PCE DriveForward Electric EV Charging Equipment Incentives	Residential Res/Biz	$ 4,000	Used EV rebate for low/moderate income residents of San Mateo County only. EV Charger installations. $16M budget, but no program yet.	Website highlights state, federal and PG&E rebates also.

Item 9 – A few CCA initiatives

Redwood Coast Energy Authority:

- Take away :
  - Outreach: partner with dealerships to do test drives for free
  - EXPOs with EV Enthusiast Groups, owners provide free educational services
  - Having educational resources and information on website

Sonoma Clean Power:

- Robust transportation program
- Employs *Choose EV*

Helping drivers make smart transportation decisions.

Item 11 – *Choose EV*

VALLEY CLEAN ENERGY

BENEFITS | EV FACTS | SAVINGS CALCULATOR | COMMUTE SAVINGS | CO2 REDUCTION | EV MODELS | PHEV MODELS | TAX CREDITS & REBATES | OFFERS & EVENTS | CHARGER FINDER

Electric vehicles, a smart transportation choice.

Electric Vehicles (EV) Cost Less To Operate Than Gas Powered Cars.
EV operation can be three to five times cheaper than gasoline and diesel powered cars, depending on your local gasoline and electric rates.

EVs Are Environmentally Friendly.
EVs have no tailpipe emissions. The power plant producing your electricity may produce emissions, but electricity from hydro, solar, nuclear or wind-powered plants is generally emission-free.

Never Go To The Gas Station Again.
Electric vehicles do not require gasoline and can be charged at home with a standard 120V outlet or a 240V level 2 charger can be installed for faster, more efficient charging.

EV Performance Benefits.
Electric motors provide quiet, smooth operation, stronger acceleration and require less maintenance than gasoline powered internal combustion engines.

EV Driving Range & Recharge Time.
EV range is typically around 80 to over 300 miles on a full charge. The average American's daily round-trip commute is less than 30 miles. Fully recharging the battery pack can take four to eight hours. A "fast charge" to 80% capacity can take 30 min.*

How to purchase an EV

Purchasing an EV is a little different than purchasing a gas-powered vehicle. It is important to understand key elements, such as vehicle range-per-charge and how tax credits work. Here are the typical steps you can take when considering an EV:

1. Find out if an EV is right for you.
2. Choose an EV model.
3. Find rebates, tax credits, incentives & discounts.
4. Test drive & purchase your new EV.
5. Install a level 2 240V charging system.

Item 11 - SMUD & UCD

- SMUD:
  - “Get butts in seats”
  - Low cost, high impact
- UCD:
  - Lack of information is the biggest barrier to ZEV adoption
  - Consumer consideration of purchasing a ZEV is less than 10% of population for their new car purchase, therefore, they aren't even considering incentives

ITS UCDAVIS
INSTITUTE OF TRANSPORTATION STUDIES

Item 11 - Cool Davis DEVA

- Davis Electric Vehicle Association
- Volunteered at EXPO and Ride and Drive Events
- Sponsored by Sac EV, Yolo and Solano Air Quality district, and others

COOL DAVIS

Item 11 – Rates & Services Task Group

- Drafted short, midterm, long term goals
- Funding opportunities/ partnerships
- Webpage content development
- Platform options
- Networked with other organizations/ lessons learned

Item 11 – Low cost, high impact

- Act as a conduit for state incentives and federal tax credits, informational hub for potential EV owners
- Have community outreach events: ride and drives/ EXPOs
- Work with local Air Quality and local governments to apply for CALeVIP funding for ride and drives, EXPOs, workplace and multi-unit dwelling EV infrastructure

Item 11 – Next Steps: Program Plan

- Identifying our goals and how it related to VCE's mission
- Defining Scope of Work
- Budget
- Timeline
- Logic Model
- Resource development plan

Item 11 - Next Steps

- CAC to comment on program plan
- Develop recommendations
- Request additional information from staff if needed
- Staff to provide updates