From: BRUCE KARNEY (Redacted)

Sent: Tuesday, October 12, 2021 6:01 AM

To: Dorothy Roberts (Redacted)

Cc: Girish Balachandran (Redacted)

Subject: Material for the Board Meeting

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Hello Dorothy,

Would you be so kind as to forward this email and attachment to the Board today? I plan to comment about some of the data during public comment on Wednesday.

Thanks in advance.

Cheers,

Bruce Karney

Time Series of Renewable (RE) and Greenhouse Gas-Free (GHG-F) Electricity

(GHG-free includes RE, Large Hydro and Nuclear generation)

Utility or CCA	Pct. From Renewable Electricity				Pct. From GHG-free Electricity			
	2017	2018	2019	2020	2017	2018	2019	2020
CA RPS #	30% of sales averaged over 2017-2020				No state standard for GHG-free			
CA Power Mix	29%	31%	32%	TBD	86%	85%	55%	TBD
PG&E	33%	39%	29%	31%	79%	85%	100%	84%
Central Coast (MBCP)	--	34%	31%	31%	--	100%	100%	87%
Clean-PowerSF	43%	49%	48%	55%	100%	89%	96%	97%
East Bay	--	41%	60%	40%	--	62%	87%	55%
King City*	--	27%	28%	100%	--	27%	28%	100%
MCE Marin	62%	61%	60%	61%	88%	74%	90%	99%
Peninsula	52%	51%	52%	TBD	85%	86%	90%	TBD
Pioneer*	--	33%	30%	TBD	--	67%	30%	TBD
Redwood Coast	44%	47%	43%	38%	89%	94%	99%	73%
San Jose*	--	48%	34%	46%	--	100%	64%	91%
Silicon Valley	55%	54%	46%	46%	100%	100%	100%	100%
Sonoma	45%	49%	50%	49%	87%	91%	97%	93%
Valley	--	48%	45%	TBD	--	85%	77%	TBD

* Does not include unbundled RECs reported in 2019: 3.1% for King City, 3.2% for Pioneer and 13.1% for San Jose. Unbundled REC information for 2020 is not yet available for PG&E or any of the CCAs.

The standard is often expressed as 27% in 2017, 29% in 2018, 31% in 2019 and 33% in 2020. For more information, see https://programs.dsireusa.org/system/program/detail/840/renewables-portfolio-standard

2020 How Green and How Cheap are NorCal CCAs vs. PG&E? Rev. #14

Source: www.cpuc.ca.gov/about-cpuc/divisions/news-and-public-information-office/public-advisors-office/customer-notices

Provider sorted alphabet-ically	Standard offering specs in year shown sorted by percent GHG-free	Premium Offering #1	Premium Offering #2	CCA monthly bill vs. PG&E as of month shown	Avg usage & CCA bill used in resid. rate comparison ^	E-TOU-C resid. gen. rate per MWh
PG&E 2020	84% GHG-free 31% RE	50-100% solar	25-100% loc. solar	N.A.	N.A.	$109.50 - $114.18
PG&E 2019	100% GHG-free 29% RE	50-100% solar	25-100% loc. solar	N.A.	N.A.	$117.52
PG&E 2018	85% GHG-free 39% RE	50-100% solar	25-100% loc. solar	N.A.	N.A.	$111.94
PG&E 2017	79% GHG-free 33% RE	50-100% solar	25-100% loc. solar	N.A.	N.A.	$107.80
Central Coast	87% GHG-free 31% RE	100% RE		= to PG&E March 2021	427 kWh $122.50	$63.25
Clean-Power SF	96.5% GHG-free 54.5% RE	100% RE		0.9% > PG&E June 2021	367 kWh $105.97	$64.49
East Bay	55% GHG-free 39.6% RE	100% GHG-free	100% Cal. RE	0.4% < PG&E Mar. 2021	587 kWh $172.69	$60.90
King City (E1 rate)	100% GHG-free 100% RE	None		0.5% < PG&E May 2021	403 kWh $111.55	$65.31
MCE (Marin) (E1 rate)	99% GHG-free 61% RE	100% RE	100% loc. solar	0.8 – 7.1% > PG&E May 2021	535 kWh $ Varies on year city joined MCE	$87.00
Peninsula	TBD	100% RE		1.8%<PG&E Mar. 2021	675 kWh $197.96	$56.25
Pioneer	TBD	None		3.4%<PG&E June 2021	817 kWh $253.92	$76.68
Redwood Coast	73% GHG-free 38% RE	100% RE		= to PG&E May 2021	903 kWh $273.45	$59.66
San Jose	91% GHG-free 46% RE	100% RE		= to PG&E March 2021	465 kWh $132.22	$64.02
Silicon Valley	100% GHG-free 46% RE	100% RE		= to PG&E March 2021	491 kWh $139.83	$62.80
Sonoma	93% GHE-free 49% RE	24x7x365 * 100% loc. RE		4.4% > PG&E April 2021	497 kWh $148.68	$76.43
Valley	TBD	100% RE		= to PG&E June 2021	432 kWh $121.15	$66.31
RPS	~30% of generation from renewable energy for the 2017-2020 Compliance Period 3					

^ Compares total price including transmission, franchise fee and PCIA, not just generation.

* From a mix of local geothermal and local solar

Preliminary 2020 Power Content Labels of "Standard" Energy Offerings

Percentages may not add to 100 due to rounding

CCAs sorted alphabet-ically	Eligible Renewable					GHG-free		Not GHG-free		
	Biomass Biowaste	Geo-thermal	Eligible Hydro	Solar Electric	Wind	Large Hydro	Nuclear	Natural Gas	Other	Unspec-ified
PG&E 2020	3%	2%	1%	16%	8%	10%	43%	16%	--	--
PG&E 2019	3%	2%	2%	12%	9%	27%	44%	--	--	--
PG&E 2018	4%	4%	3%	18%	10%	13%	34%	15%	--	--
PG&E 2017	4%	5%	3%	13%	8%	18%	27%	20%	--	2%
Central Coast	2%	9%	3%	15%	2%	56%	--	--	--	13%
Clean-Power SF	--	6.2%	1.1%	31.7%	15.4%	42.0%	--	--	--	3.5%
East Bay	1.9%	3.0%	1.6%	14.1%	19.0%	14.5%	0.9%	0.1%	0.2%	44.7%
King City	--	--	--	13%	87%	--	--	--	--	0%
MCE Marin	2%	6%	3%	23%	27%	36%	1%	--	--	1%
Peninsula #										
Pioneer #										
Redwood Coast	10%	6%	2%	10%	10%	35%	--	--	1%	26%
San Jose	2%	3%	--	17%	24%	31%	13%	--	--	9%
Silicon Valley	3%	2%	5%	18%	14%	48%	10%	--	--	--
Sonoma	--	15%	--	10%	24%	44%	--	--	--	7%
Valley #										
CA Power Mix^										

^ The final 2020 statewide power mix is not yet available. See Page 5 for the 2019 statewide mix.

2020 Power mixes have not yet been published for Peninsula, Pioneer or Valley.

2019 How Green and How Cheap are NorCal CCAs vs. PG&E?

Provider sorted alphabet-ically	Standard offering specs in year shown sorted by percent GHG-free	Premium Offering #1	Premium Offering #2	CCA monthly bill vs. PG&E as of month shown	Avg usage & CCA bill used in resid. rate comparison ^	E-1 resid. gen. rate per MWh
PG&E	100% GHG-free 29% RE	50-100% solar	25-100% loc. solar	N.A.	N.A.	$117.52
Central Coast	100% GHG-free 31% RE	100% RE		0.8% < PG&E May 2020	410 kWh $114.18	$81.20
Clean-Power SF	96% GHG-free 48% RE	100% RE		0.4% < PG&E May 2020	273 kWh $73.97	$82.35
East Bay	87% GHG-free 60% RE	100% GHG-free, 75% RE	100% RE	2.0% < PG&E May 2020	359 kWh $95.20	$81.77
King City	28% GHG-free 28% RE	None		1.4% < PG&E May 2020	351 kWh $91.27	$77.60
MCE (Marin)	90% GHG-free 60% RE	100% RE	100% loc. solar	1.2% > PG&E May 2020	483 kWh $136.74	$87.00
Peninsula	90% GHG-free 52% RE	100% RE		2.1% < PG&E June 2020	415 kWh $113.30	$77.61
Pioneer	30% GHG-free 30% RE	None		2.3% < PG&E May 2020	681 kWh $184.16	$77.19
Redwood Coast	98% GHE-free 43% RE	100% RE		0.4% < PG&E May 2020	457 kWh $132.48	$82.31
San Jose	83% GHG-free 34% RE	100% RE		0.4% < PG&E May 2020	423 kWh $113.31	$82.35
Silicon Valley	100% GHG-free 46% RE	100% RE		1.7% < PG&E May 2020	447 kWh $121.71	$78.85
Sonoma	97% GHE-free 50% RE	24x7x365 * 100% loc. RE		2.5% > PG&E July 2020	477 kWh $137.55	$90.12
Valley	76% GHG-free 45% RE	100% RE		= to PG&E May 2020	486 kWh $130.69	$83.55
RPS	~30% of generation from renewable energy for the 2017-2020 Compliance Period 3					

^ Compares total price including transmission, franchise fee and PCIA, not just generation.

* From a mix of local geothermal and local solar

Final 2019 Power Content Labels of "Standard" Energy Offerings

See https://www.energy.ca.gov/programs-and-topics/programs/power-source-disclosure/power-content-label/annual-power-content-0

Percentages may not add to 100 due to rounding

CCAs sorted alphabet-ically	Eligible Renewable					GHG-free		Not GHG-free			Un-bun-dled RECs #
	Biomass Biowaste	Geo-thermal	Eligible Hydro	Solar Electric	Wind	Large Hydro	Nuclear	Natural Gas	Other	Unspec-ified	
PG&E	3.2%	1.5%	2.3%	12.3%	9.4%	27.2%	44.3%	--	--	--	--
Central Coast	2.4%	9.5%	3.3%	8.1%	7.7%	69.1%	--	--	--	--	--
Clean-PowerF	0.2%	12%	--	4.9%	30.9%	47.5%	0.1%	2.4%	--	2%	--
East Bay	3.6%	12.3%	4.9%	3.5%	35.7%	25.3%	1.5%	0.1%	0.2%	13.1%	--
King City	--	--	--	--	27.9%	--	--	--	--	72.1%	3.1%
MCE Marin	1.6%	3.3%	6.1%	20%	29%	29.3%	1%	--	--	9.7%	--
Peninsula	8%	9.2%	5.3%	11.9%	17.8%	36.9%	0.8%	--	--	10.1%	--
Pioneer	--	11.5%	11.3%	--	6.9%	--	--	--	--	70.4%	3.2%
Redwood Coast	25.8%	--	--	2.2%	14.7%	55.3%	0.1%	0.3%	0.8%	0.8%	--
San Jose	3.7%	2.3%	--	18.8%	9.1%	29.2%	0.6%	0.2%	0.6%	35.5%	13.3%
Silicon Valley	1%	3.9%	8.3%	17.6%	15.6%	53.5%	--	--	--	--	--
Sonoma	--	17.5%	--	7.7%	25.1%	46.2%	0.3%	--	--	3.2%	--
Valley	--	0.6%	1.2%	20.8%	22.6%	31.3%	--	--	--	23.4%	--
CA Power Mix ^	2.4%	4.8%	2%	12.3%	10.2%	14.6%	9%	34.2%	0.2%	7.3%^	--

^ The 2019 statewide power mix also included 3.0% from coal.

From Power Content Label "Percentage of retail sales covered by retired unbundled RECs." Unbundled renewable energy credits (RECs) represent renewable generation that was not delivered to serve retail sales. Unbundled RECs are not reflected in the power mix or GHG emissions intensities above.

Final 2018 Power Content Labels of "Standard" Energy Offerings

See https://www.energy.ca.gov/programs-and-topics/programs/power-source-disclosure/power-content-label/annual-power-content-0

Percentages may not add to 100 due to rounding

CCAs sorted alphabetically	Eligible Renewable					GHG-free		Not GHG-free		
	Biomass Biowaste	Geo-thermal	Eligible Hydro	Solar Electric	Wind	Large Hydro	Nuclear	Natural Gas	Other	Unspec-ified
PG&E	4%	4%	3%	18%	10%	13%	34%	15%	--	--
Central Coast (MBCP)	<1%	12%	--	11%	11%	66%	--	--	--	--
Clean-PowerSF	1%	10%	--	1%	36%	40%	--	--	--	11%
East Bay	--	1%	--	15%	25%	21%	--	--	--	38%
King City	--	--	--	3%	25%	--	--	--	--	73%
MCE Marin	4%	3%	2%	11%	39%	13%	--	--	13%	13%
Peninsula	5%	2%	5%	7%	33%	35%	--	--	--	14%
Pioneer	2%	1%	7%	17%	6%	--	--	--	--	67%
Redwood Coast	23%	8%	--	3%	13%	47%	--	--	--	6%
San Jose	--	--	--	--	48%	52%	--	--	--	--
Silicon Valley	1%	8%	3%	12%	31%	46%	--	--	--	--
Sonoma	1%	18%	--	8%	23%	42%	--	--	--	9%
Valley	--	--	--	--	48%	37%	--	--	--	15%
CA Power Mix ^	2%	5%	2%	11%	11%	11%	9%	--	<1%	11%

^ The 2018 statewide power mix also included 3% from coal

Final 2017 Power Content Labels of "Standard" Energy Offerings

See https://www.energy.ca.gov/programs-and-topics/programs/power-source-disclosure/power-content-label/annual-power-content-0

Percentages may not add to 100 due to rounding

CCAs sorted alpha-bet-ically	Eligible Renewable					GHG-free		Not GHG-free		
	Biomass Biowaste	Geo-thermal	Eligible Hydro	Solar Electric	Wind	Large Hydro	Nuclear	Natural Gas	Other	Unspec-ified
PG&E	4%	5%	3%	13%	8%	18%	27%	20%	--	2%
Clean-PowerSF	--	--	--	3%	40%	57%	--	--	--	--
MCE Marin	6%	10%	9%	9%	27%	26%	--	5%	1%	6%
Peninsula	7%	6%	9%	7%	24%	33%	--	--	--	15%
Redwood Coast	11%	5%	--	5%	24%	45%	--	--	--	11%
Silicon Valley	6%	1%	2%	10%	36%	45%	--	--	--	--
Sonoma	--	11%	--	11%	23%	42%	--	--	--	13%
CA Power Mix ^	2%	4%	3%	10%	10%	15%	9%	34%	<1%	9%

^ The 2017 statewide power mix also included 4% from coal

These CCAs had not started delivering power in 2017: Central Coast (MBCP), East Bay, King City, Pioneer, San Jose and Valley