



STATE OF RHODE ISLAND  
**ENERGY EFFICIENCY &  
RESOURCE MANAGEMENT COUNCIL**

---

# 2021-2023 Energy Efficiency Plan EERMC Consultant Team Review

**EERMC Council Meeting October 8, 2020**



# Outline

Overview & Key Findings

Electric Trends & Comparisons

Gas Trends & Comparisons

Sector Highlights

Summary and Recommendations





# Overview & Key Findings

National Grid has been responsive to consensus stakeholder view that 1<sup>st</sup> draft Three Year Plan (3YP) goals were too low  
Led to range of goals ('Base' and 'High') for 2022 and 2023

Prioritization of barriers & plans to overcome them

Costs are critical barrier for 2021 (SBC Cap)

Other barriers discussed by sector teams, tackled in 2021 Plan



# Overview & Key Findings

Driving toward Council- & PUC-approved targets with 'High' scenario

'High' scenario is a linear scaling of 'Base'

Aims to reach MPS 'Mid' levels based on stakeholder input

Rough EM&V adjustment applied to 'Mid' by National Grid

Critical need to continue detailed planning work for 2022 and 2023

Annual plans will certainly deviate from planned values

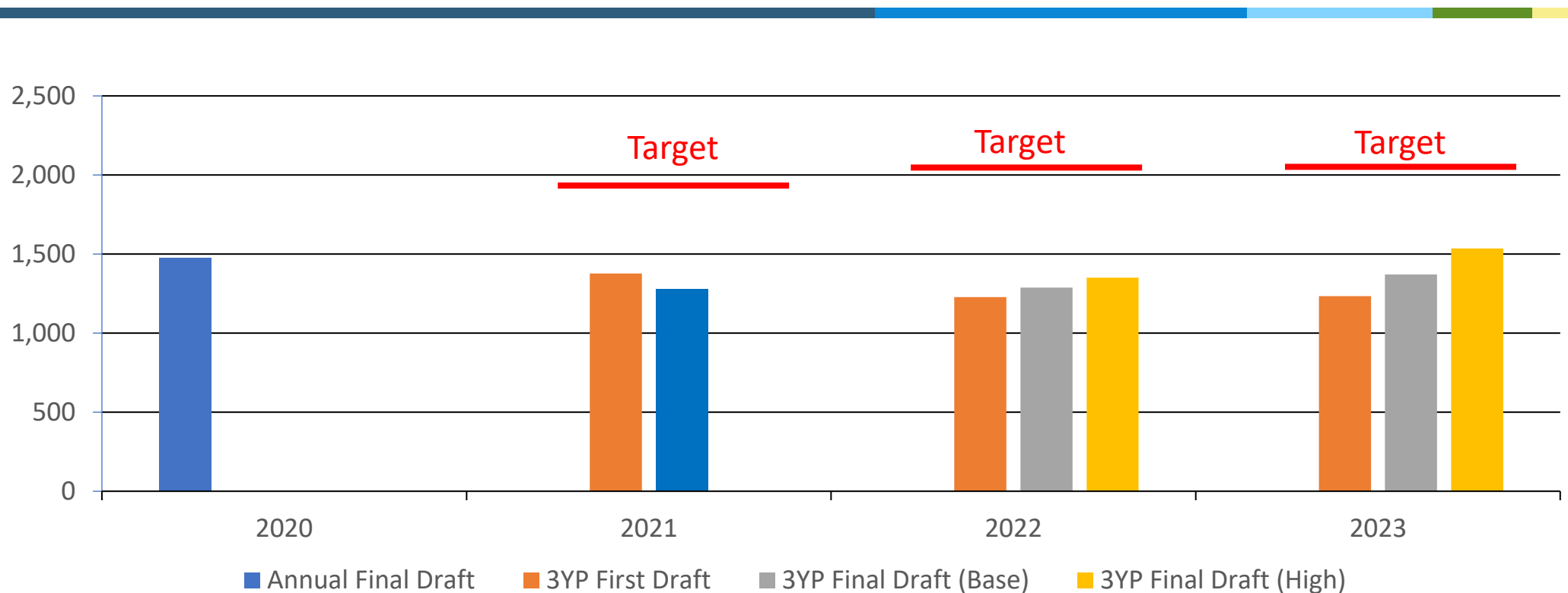


# ELECTRIC TRENDS AND COMPARISONS





# Lifetime Portfolio Electric Savings (GWh)



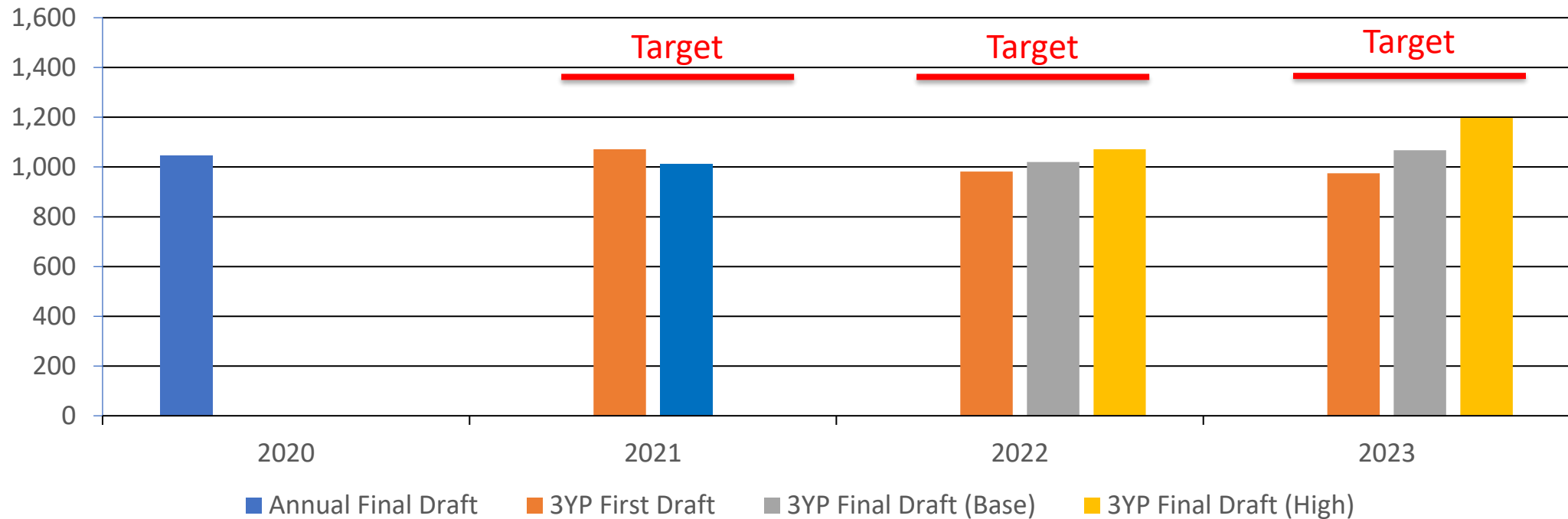
## Key Points

2021 goal lower than 3YP first draft due to SBC ceiling

Goals increase in 2022 & 2023



# Lifetime C&I Electric Savings (GWh)

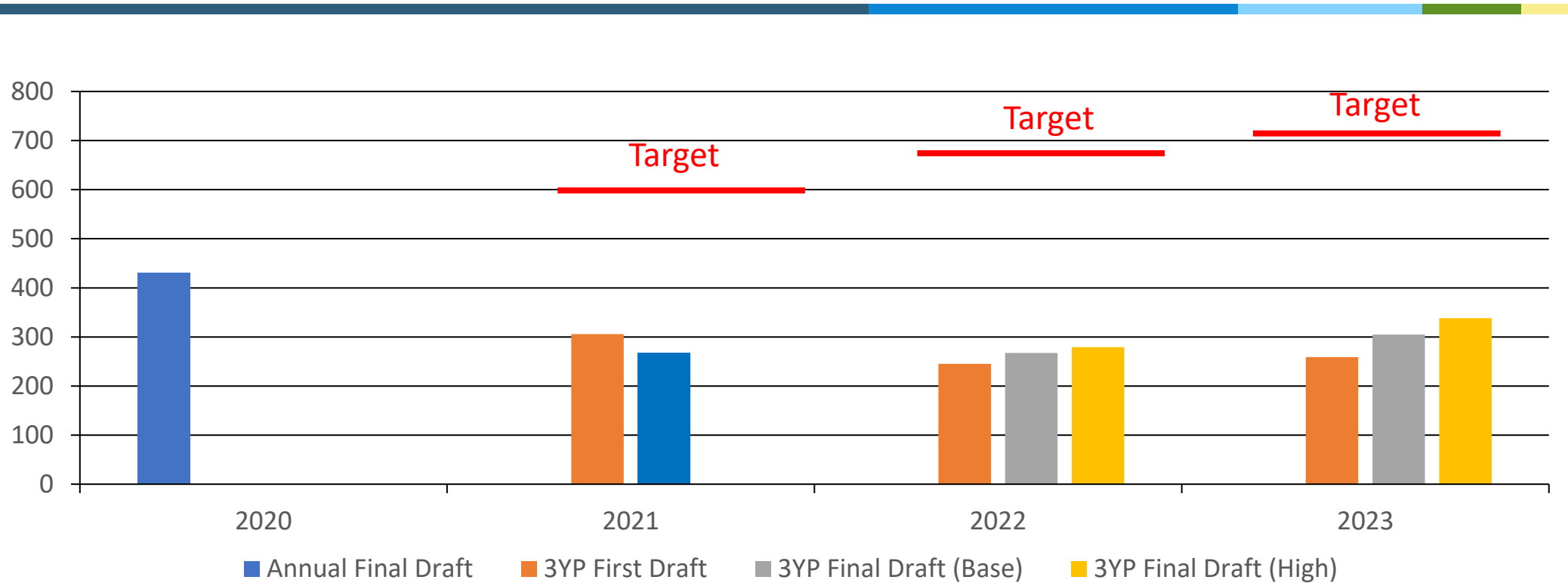


## Key Points

C&I Sector within sight of targets by 2023



# Lifetime Residential Electric Savings (GWh)



## Key Points

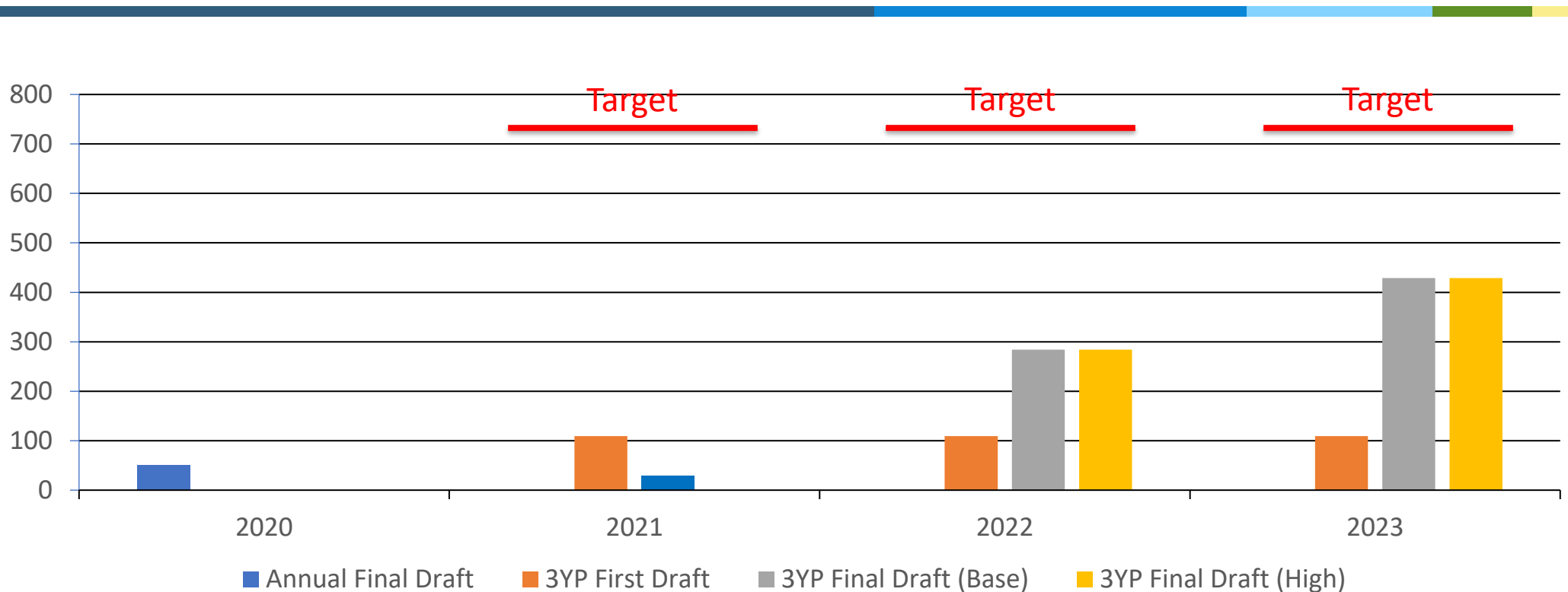
Residential sector falling far short of targets through 2023

Growth in 'Base' case due to HVAC and Consumer Products





# Lifetime Portfolio CHP Savings (GWh)

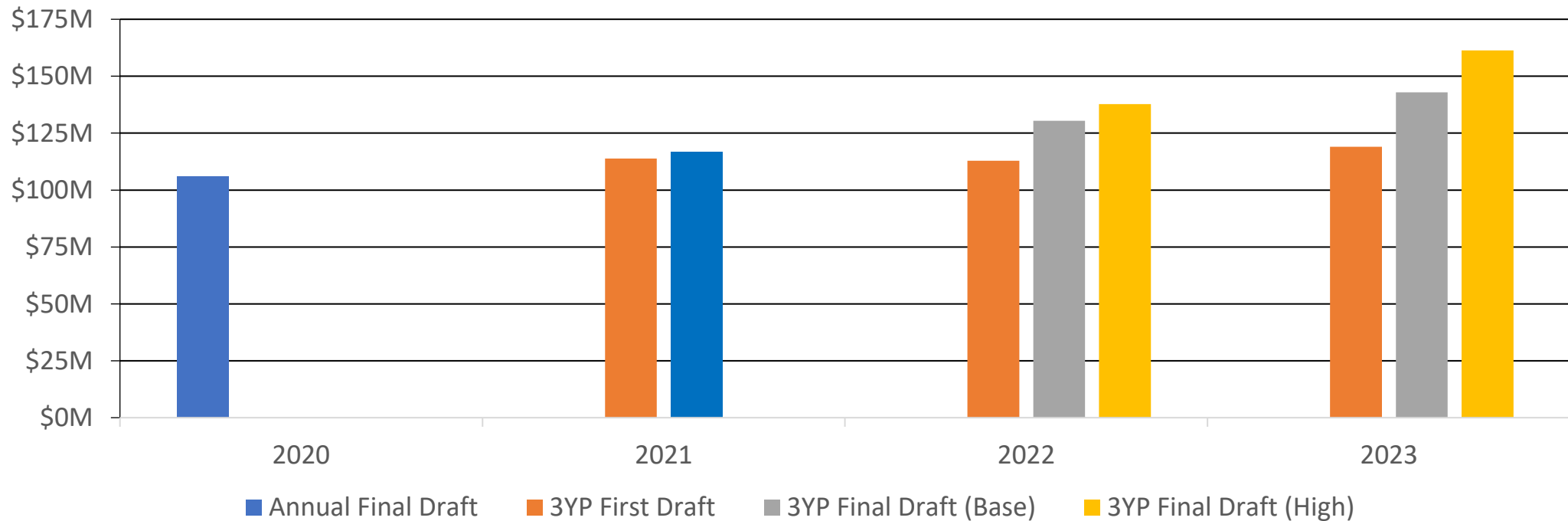


## Key Points

CHP goals rise quickly in 2022 and 2023, drive overall electric savings growth



# Electric Implementation Budget (\$MM)



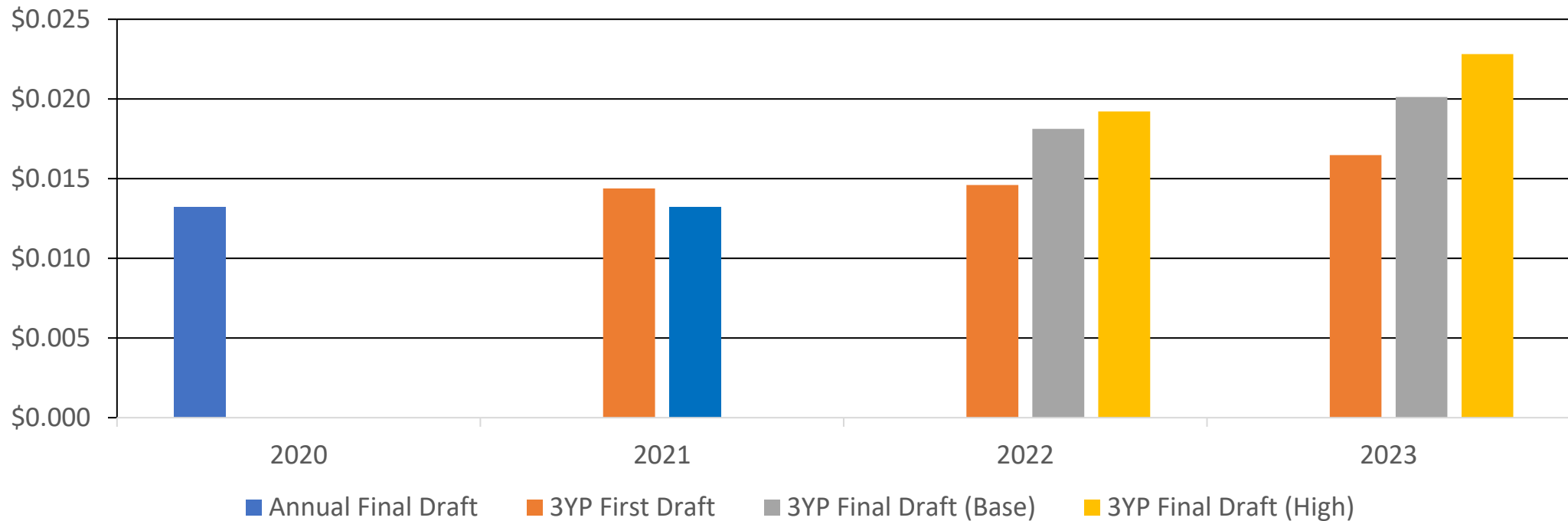
## Key Points

Budget up in 2021, expected to continue rising in 2022 and 2023

Long-awaited transition from lighting to more comprehensive measures



# Electric System Benefit Charge (\$/kWh)



## Key Points

2021 SBC held to 2020 levels due to COVID-19 concerns

2022 & 2023 levels driven by increased budgets, lower fund balance carry-over

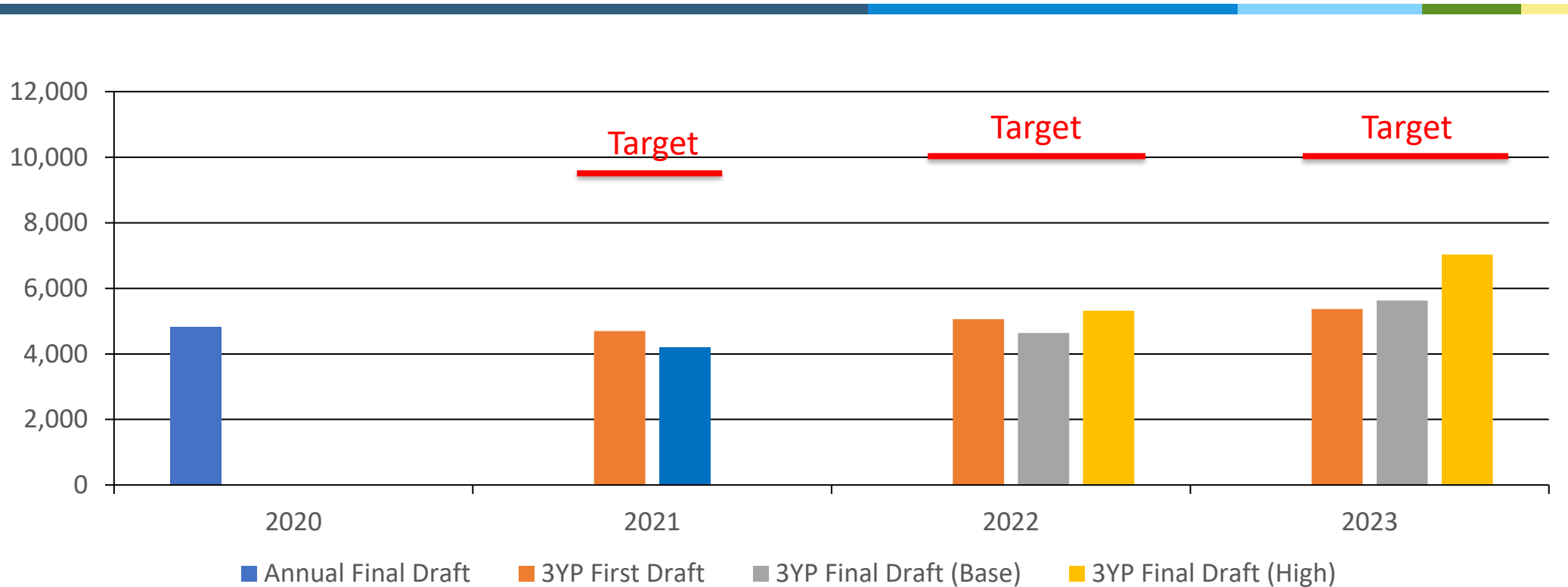


# GAS TRENDS AND COMPARISONS





# Lifetime Portfolio Gas Savings (BBtu)

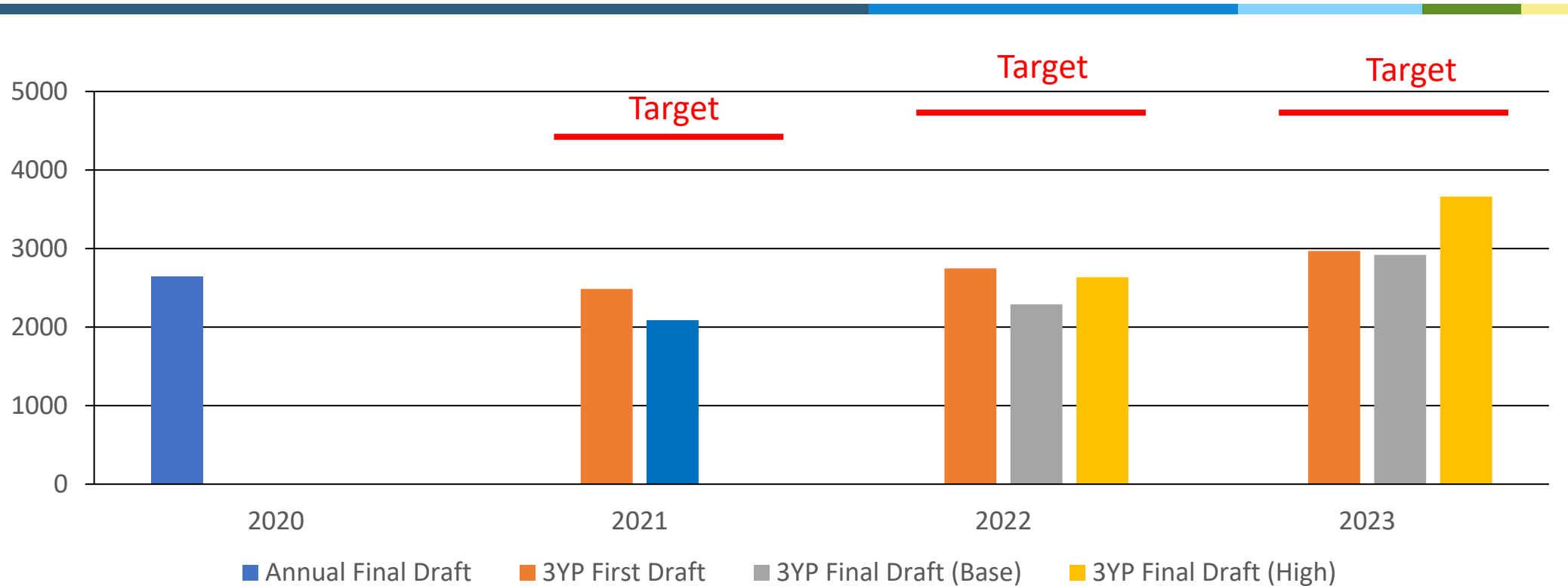


## Key Points

2021 gas goals down from 2020, but show positive trajectory through 2023



# Lifetime C&I Gas Savings (BBtu)



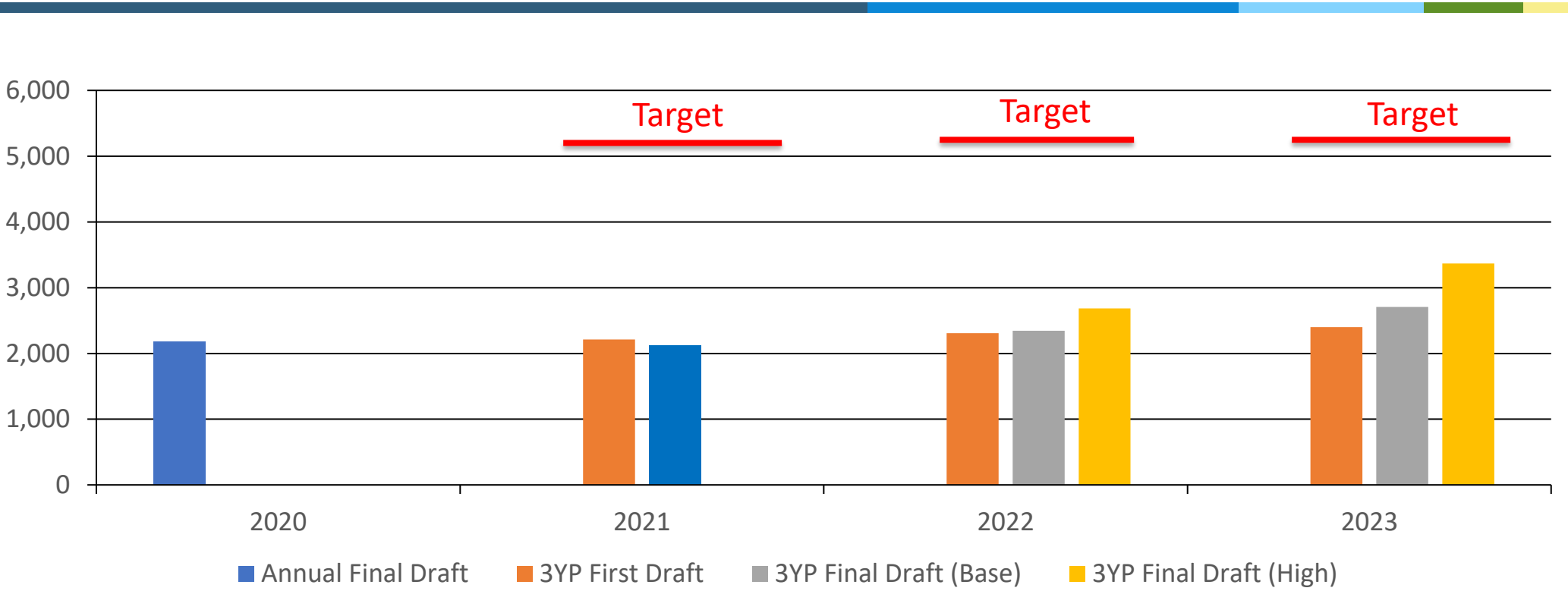
## Key Points

C&I gas goals declined during planning

Expected to reach 2020 levels again within 3YP



# Lifetime Residential Gas Savings (BBtu)

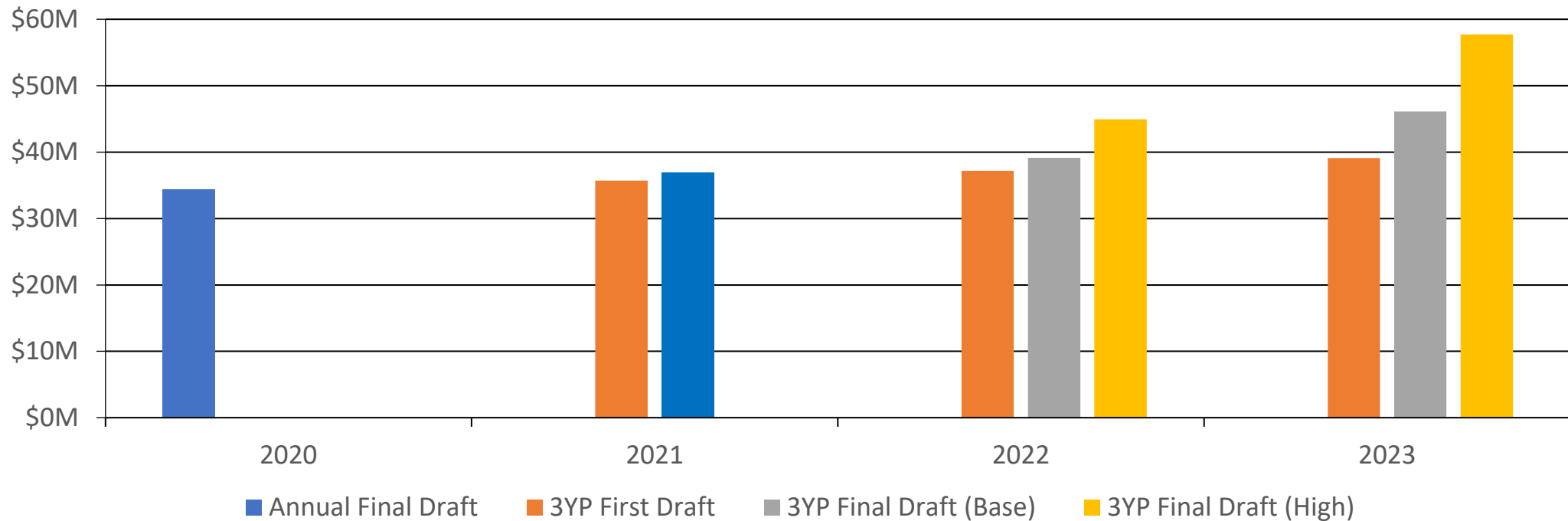


**Key Points**

- Residential 2021 gas goals steady around 2020 levels
- Expected to push higher into 2022 and 2023



# Gas Implementation Budget (\$MM)



## Key Points

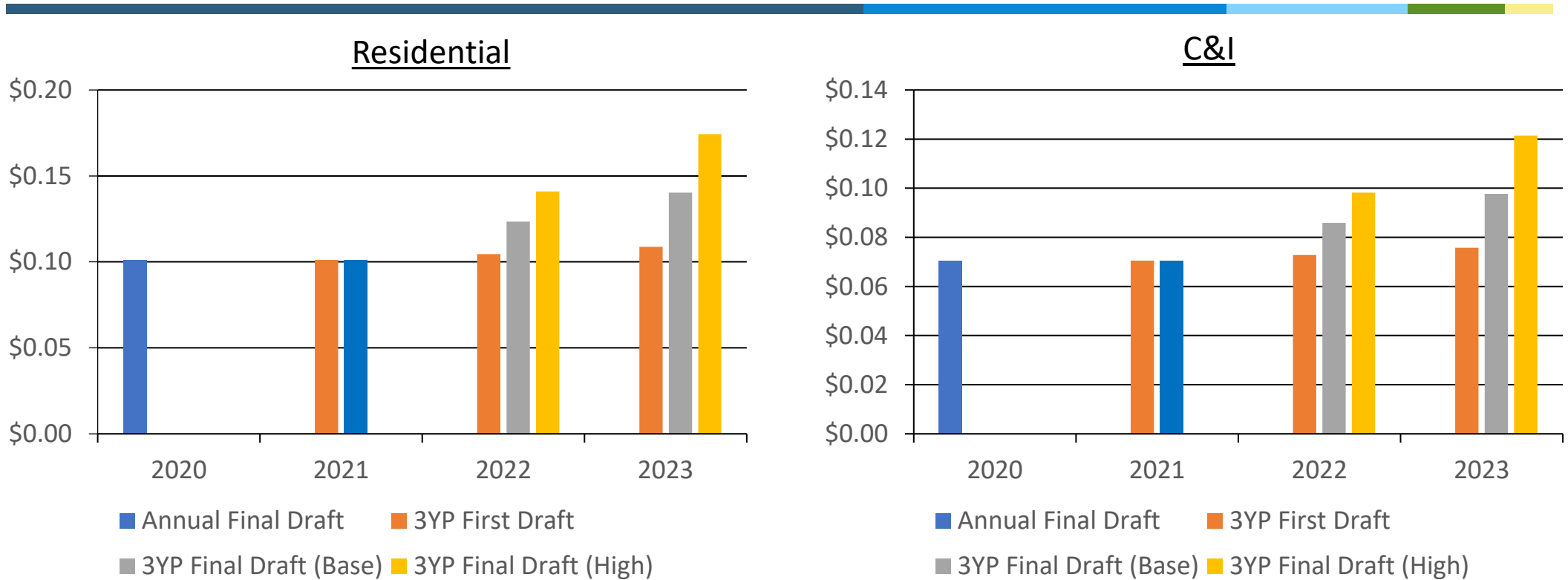
Gas budget up moderately from 2020

Expected to continue rising in 2022 and 2023





# Gas System Benefit Charge (\$/Therm)



Key Points

2021 SBC capped and 2020 levels, flat compared to first draft 3YP

2022 and 2023 SBCs rising with higher budgets and lower fund balance carry-over



# SECTOR HIGHLIGHTS





# 2021-2023 Residential Highlights

Lighting declines with complete exit from market rate programs by 2023

Share of electric savings from HVAC and Products increases as Lighting exits

3-year plan tentatively shows increases in both electric and gas savings for 2022 and 2023, except for electric in the 2022 “Base” scenario





# 2021-2023 C&I Highlights

Declining opportunities from lighting  
– In terms of gross savings opportunity  
and in net claimable savings

Very large CHP project potential in  
2022/2023

3-year plan tentatively shows increases in both  
electric and gas savings for 2022 and 2023





# SUMMARY & RECOMMENDATIONS





# Summary & Recommendations

2021-2023 Plan sufficiently meets all requirements & primary objectives:

- Electric and Gas Programs are Cost-Effective
- Portfolio Costs are less than the cost of supply
- Addresses issues of Prudence & Reliability
- Aligns with Least Cost Procurement Standards
- Reflects responsiveness to EERMC and Stakeholder Priorities





# APPENDICES







# 2021 Electric Program Level Lifetime Savings (MWh)

Program	2020 Plan	2021 (3YP 1st Draft)	2022 (3YP 1st Draft)	2023 (3YP 1st Draft)	2021 (3YP 2nd Draft)	2022 (3YP 2nd Draft Base)	2023 (3YP 2nd Draft Base)	2022 (3YP 2nd Draft Upper)	2023 (3YP 2nd Draft Upper)
Small Business Direct Install	126,066	117,915	110,191	101,559	105,134	108,288	117,750	113,702	132,115
Large Commercial New Construction	147,913	182,604	182,604	182,604	189,441	207,882	181,973	218,277	204,174
Large Commercial Retrofit	823,828	880,510	798,519	800,046	744,562	987,838	1,196,168	1,023,025	1,289,772
<b>C&amp;I Total</b>	<b>1,097,807</b>	<b>1,181,029</b>	<b>1,091,314</b>	<b>1,084,208</b>	<b>1,039,136</b>	<b>1,304,008</b>	<b>1,495,891</b>	<b>1,355,004</b>	<b>1,626,061</b>
Single Family - Income Eligible Services	45,723	45,036	48,915	54,478	39,378	43,190	48,657	45,349	54,593
Income Eligible Multifamily	31,899	28,134	30,237	31,759	31,690	30,663	32,896	32,196	36,910
<b>Income Eligible Total</b>	<b>77,623</b>	<b>73,169</b>	<b>79,152</b>	<b>86,237</b>	<b>71,068</b>	<b>73,852</b>	<b>81,553</b>	<b>77,545</b>	<b>91,503</b>
Residential New Construction	15,846	18,390	17,539	19,066	18,088	18,017	19,964	18,918	22,400
ENERGY STAR® HVAC	33,961	37,725	42,357	47,623	51,309	69,093	82,100	72,548	92,116
EnergyWise	22,310	18,712	16,566	14,842	14,788	13,855	15,370	14,548	17,246
EnergyWise Multifamily	29,344	20,724	24,940	25,064	20,391	25,284	24,434	26,549	27,414
Home Energy Reports	23,239	23,239	23,239	23,239	26,852	26,852	26,852	26,852	26,852
ENERGY STAR® Lighting	195,647	74,308	0	0	26,801	0	0	0	0
Residential Consumer Products	32,041	39,357	41,620	43,168	38,130	40,332	54,361	42,349	60,993
<b>Residential Total</b>	<b>352,388</b>	<b>232,455</b>	<b>166,260</b>	<b>173,003</b>	<b>196,358</b>	<b>193,434</b>	<b>223,081</b>	<b>201,763</b>	<b>247,021</b>
<b>Portfolio Total</b>	<b>1,527,817</b>	<b>1,486,653</b>	<b>1,336,726</b>	<b>1,343,448</b>	<b>1,306,562</b>	<b>1,571,295</b>	<b>1,800,526</b>	<b>1,634,312</b>	<b>1,964,585</b>





# 2021 Electric Program-Level Spending

Program	2020 Plan	2021 (3YP 1st Draft)	2022 (3YP 1st Draft)	2023 (3YP 1st Draft)	2021 (3YP 2nd Draft)	2022 (3YP 2nd Draft Base)	2023 (3YP 2nd Draft Base)	2022 (3YP 2nd Draft Upper)	2023 (3YP 2nd Draft Upper)
Small Business Direct Install	\$7,568,598	\$8,210,339	\$7,764,587	\$7,256,943	\$8,883,559	\$8,548,647	\$9,225,948	\$8,976,079	\$10,351,517
Large Commercial New Construction	\$5,335,735	\$8,952,826	\$8,994,378	\$8,750,814	\$8,500,175	\$9,845,884	\$8,962,708	\$10,338,179	\$10,056,161
Large Commercial Retrofit	\$23,801,319	\$31,566,395	\$31,697,825	\$33,152,393	\$31,930,242	\$44,260,469	\$47,649,170	\$46,473,493	\$53,462,383
C&I Financing	\$5,216,666	\$5,000,000	\$5,000,000	\$5,000,000	\$5,000,000	\$5,000,000	\$5,000,000	\$5,250,000	\$5,610,002
Community Based Initiatives - C&I	\$66,093	\$74,531	\$84,965	\$93,461	\$74,531	\$84,965	\$93,461	\$89,213	\$104,864
Commercial Pilots	\$106,269	\$183,269	\$139,269	\$622,269	\$0	\$0	\$0	\$0	\$0
Commercial ConnectedSolutions	\$2,078,480	\$4,243,675	\$4,264,619	\$5,206,144	\$2,990,106	\$3,534,384	\$4,111,516	\$4,771,418	\$6,316,521
Commercial Workforce Development					\$468,688	\$544,629	\$580,994	\$571,860	\$651,875
<b>C&amp;I Total</b>	<b>\$44,173,160</b>	<b>\$58,231,034</b>	<b>\$57,945,643</b>	<b>\$60,082,024</b>	<b>\$57,847,300</b>	<b>\$71,818,978</b>	<b>\$75,623,797</b>	<b>\$76,470,242</b>	<b>\$86,553,323</b>
Single Family - Income Eligible Services	\$12,846,109	\$13,936,900	\$15,266,134	\$16,848,146	\$13,759,324	\$15,099,473	\$16,622,274	\$15,854,447	\$18,650,196
Income Eligible Multifamily	\$3,549,006	\$3,857,155	\$4,242,675	\$4,602,944	\$4,830,800	\$4,214,050	\$4,557,458	\$4,424,753	\$5,113,470
Income Eligible Workforce Development					\$114,190	\$156,180	\$172,817	\$163,989	\$193,901
<b>Income Eligible Total</b>	<b>\$16,395,115</b>	<b>\$17,794,054</b>	<b>\$19,508,809</b>	<b>\$21,451,090</b>	<b>\$18,704,314</b>	<b>\$19,469,703</b>	<b>\$21,352,549</b>	<b>\$20,443,188</b>	<b>\$23,957,567</b>
Residential New Construction	\$973,453	\$1,208,739	\$1,142,089	\$1,225,808	\$1,544,335	\$1,419,478	\$1,502,747	\$1,490,452	\$1,686,083
ENERGY STAR® HVAC	\$2,525,126	\$2,930,248	\$3,259,507	\$3,522,343	\$3,487,798	\$4,638,345	\$6,038,106	\$4,870,262	\$6,774,757
EnergyWise	\$15,692,174	\$16,437,333	\$18,216,462	\$19,426,640	\$17,033,340	\$18,008,677	\$21,716,295	\$18,909,111	\$24,365,689
EnergyWise Multifamily	\$2,804,341	\$2,891,050	\$3,391,590	\$3,551,297	\$3,056,836	\$3,581,305	\$3,523,478	\$3,760,370	\$3,953,343
Home Energy Reports	\$2,728,084	\$2,712,998	\$2,733,971	\$2,736,762	\$2,641,681	\$2,624,008	\$2,624,004	\$2,624,008	\$2,624,004
ENERGY STAR® Lighting	\$15,375,810	\$5,587,603	\$0	\$0	\$5,274,753	\$0	\$0	\$0	\$0
Residential Consumer Products	\$2,199,164	\$2,657,384	\$2,978,765	\$3,047,935	\$2,681,236	\$2,851,875	\$3,613,395	\$2,994,469	\$4,054,230
Energy Efficiency Education	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$42,000	\$44,880
Comprehensive Marketing - Residential	\$382,300	\$382,300	\$497,819	\$497,819	\$332,706	\$507,706	\$507,706	\$533,092	\$569,647
Community Based Initiatives - Residential	\$203,884	\$229,197	\$260,500	\$285,989	\$226,161	\$257,465	\$282,954	\$270,338	\$317,475
Residential ConnectedSolutions	\$461,627	\$518,364	\$636,755	\$832,881	\$1,959,725	\$2,527,448	\$3,064,817	\$2,527,448	\$3,064,817
Residential Pilots	\$287,846	\$214,346	\$234,346	\$27,846	\$0	\$0	\$0	\$0	\$0
Residential Workforce Development					\$284,722	\$246,058	\$303,777	\$258,361	\$340,838
<b>Residential Total</b>	<b>\$43,673,811</b>	<b>\$35,809,563</b>	<b>\$33,391,805</b>	<b>\$35,195,322</b>	<b>\$38,563,295</b>	<b>\$36,702,365</b>	<b>\$43,217,278</b>	<b>\$38,279,911</b>	<b>\$47,795,761</b>
EERMC	\$893,686	\$1,020,945	\$1,030,775	\$1,130,318	\$845,559	\$1,188,445	\$1,355,447	\$1,247,867	\$1,520,812
OER	\$893,686	\$1,020,945	\$1,030,775	\$1,130,318	\$845,559	\$1,188,445	\$1,355,447	\$1,247,867	\$1,520,812
<b>Regulatory Total</b>	<b>\$1,787,373</b>	<b>\$2,041,891</b>	<b>\$2,061,551</b>	<b>\$2,260,635</b>	<b>\$1,691,117</b>	<b>\$2,376,890</b>	<b>\$2,710,894</b>	<b>\$2,495,734</b>	<b>\$3,041,624</b>
<b>Portfolio Total</b>	<b>\$106,029,459</b>	<b>\$113,876,542</b>	<b>\$112,907,808</b>	<b>\$118,989,071</b>	<b>\$116,806,026</b>	<b>\$130,367,936</b>	<b>\$142,904,519</b>	<b>\$137,689,075</b>	<b>\$161,348,275</b>





# 2021 Gas Program-Level Lifetime Savings (MMBtu)

Program	2020 Plan	2021 (3YP 1st Draft)	2022 (3YP 1st Draft)	2023 (3YP 1st Draft)	2021 (3YP 2nd Draft)	2022 (3YP 2nd Draft Base)	2023 (3YP 2nd Draft Base)	2022 (3YP 2nd Draft Upper)	2023 (3YP 2nd Draft Upper)
Large Commercial New Construction	776,748	710,111	832,312	853,852	437,398	515,237	595,466	592,523	746,583
Large Commercial Retrofit	1,689,045	1,601,638	1,742,540	1,941,671	1,455,776	1,559,386	2,076,202	1,793,294	2,603,100
Small Business Direct Install	17,662	20,092	20,092	20,092	48,861	73,579	107,173	84,616	134,371
Commercial & Industrial Multifamily	155,596	153,159	153,159	153,159	141,869	141,869	141,869	163,150	177,873
<b>C&amp;I Total</b>	<b>2,639,051</b>	<b>2,485,000</b>	<b>2,748,102</b>	<b>2,968,773</b>	<b>2,083,905</b>	<b>2,290,072</b>	<b>2,920,710</b>	<b>2,633,582</b>	<b>3,661,927</b>
Single Family - Income Eligible Services	201,916	226,500	249,087	274,106	226,500	249,087	274,106	286,450	343,669
Income Eligible Multifamily	447,962	361,865	361,865	361,865	352,022	352,022	352,022	404,826	441,358
<b>Income Eligible Total</b>	<b>649,878</b>	<b>588,365</b>	<b>610,952</b>	<b>635,971</b>	<b>578,522</b>	<b>601,109</b>	<b>626,128</b>	<b>691,275</b>	<b>785,027</b>
Energy Star® HVAC	495,828	555,456	636,093	699,598	667,485	857,579	1,037,670	986,215	1,301,010
EnergyWise	608,029	668,835	668,833	668,837	549,037	564,508	723,459	649,184	907,059
EnergyWise Multifamily	225,079	198,227	201,144	204,061	148,675	148,993	149,311	171,343	187,204
Home Energy Reports	115,426	115,426	115,426	115,426	93,548	93,548	93,548	93,548	93,548
Residential New Construction	82,971	85,272	77,740	75,184	85,272	80,072	75,184	92,083	94,264
<b>Residential Total</b>	<b>1,527,333</b>	<b>1,623,216</b>	<b>1,699,236</b>	<b>1,763,107</b>	<b>1,544,017</b>	<b>1,744,699</b>	<b>2,079,172</b>	<b>1,992,372</b>	<b>2,583,084</b>
<b>Portfolio Total</b>	<b>4,816,261</b>	<b>4,696,581</b>	<b>5,058,290</b>	<b>5,367,851</b>	<b>4,206,444</b>	<b>4,635,880</b>	<b>5,626,011</b>	<b>5,317,230</b>	<b>7,030,038</b>





# 2021 Gas Program-Level Spending

Program	2020 Plan	2021 (3YP 1st Draft)	2022 (3YP 1st Draft)	2023 (3YP 1st Draft)	2021 (3YP 2nd Draft)	2022 (3YP 2nd Draft Base)	2023 (3YP 2nd Draft Base)	2022 (3YP 2nd Draft Upper)	2023 (3YP 2nd Draft Upper)
Large Commercial New Construction	\$2,652,536	\$2,807,700	\$2,857,628	\$2,931,645	\$2,759,162	\$3,015,867	\$3,237,649	\$3,468,247	\$4,059,299
Large Commercial Retrofit	\$5,030,949	\$5,251,275	\$5,196,887	\$5,414,742	\$5,169,116	\$5,263,010	\$6,281,907	\$6,052,461	\$7,876,127
Small Business Direct Install	\$125,005	\$141,546	\$141,713	\$142,332	\$332,651	\$629,446	\$957,322	\$723,863	\$1,200,271
Commercial & Industrial Multifamily	\$967,907	\$1,060,259	\$1,061,517	\$1,069,270	\$953,219	\$1,026,754	\$1,015,212	\$1,180,767	\$1,272,852
Comprehensive Marketing - Commercial and Industrial	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Commercial Pilots	\$366,015	\$270,012	\$273,252	\$276,492	\$215,780	\$219,020	\$222,260	\$251,873	\$278,665
Finance Costs	\$0	\$500,000	\$500,000	\$500,000	\$0	\$0	\$0	\$0	\$0
Community Based Initiatives - C&I	\$22,031	\$24,844	\$28,322	\$31,154	\$24,844	\$28,322	\$31,154	\$32,570	\$39,060
RIIB	\$0								
Commercial Workforce Development					\$164,510	\$55,604	\$70,119	\$63,945	\$87,913
<b>C&amp;I Total</b>	<b>\$9,164,443</b>	<b>\$10,055,635</b>	<b>\$10,059,318</b>	<b>\$10,365,634</b>	<b>\$9,619,282</b>	<b>\$10,238,022</b>	<b>\$11,815,622</b>	<b>\$11,773,726</b>	<b>\$14,814,187</b>
Single Family - Income Eligible Services	\$5,952,337	\$6,804,369	\$7,453,859	\$8,186,918	\$6,738,774	\$7,378,116	\$8,069,422	\$8,484,833	\$10,117,278
Income Eligible Multifamily	\$3,009,496	\$3,255,931	\$3,255,363	\$3,259,703	\$3,254,067	\$3,223,579	\$3,213,659	\$3,707,116	\$4,029,220
Income Eligible Workforce Development					\$49,623	\$84,432	\$90,245	\$97,097	\$113,147
<b>Income Eligible Total</b>	<b>\$8,961,833</b>	<b>\$10,060,300</b>	<b>\$10,709,221</b>	<b>\$11,446,621</b>	<b>\$10,042,464</b>	<b>\$10,686,127</b>	<b>\$11,373,326</b>	<b>\$12,289,046</b>	<b>\$14,259,645</b>
Energy Star® HVAC	\$2,693,066	\$2,880,097	\$3,252,851	\$3,556,095	\$3,673,047	\$4,568,015	\$5,695,898	\$5,253,217	\$7,141,402
EnergyWise	\$8,117,639	\$9,198,446	\$9,711,821	\$10,268,734	\$10,063,228	\$10,005,776	\$13,398,137	\$11,506,642	\$16,798,312
EnergyWise Multifamily	\$1,512,060	\$1,495,306	\$1,495,047	\$1,497,025	\$1,491,590	\$1,486,966	\$1,482,315	\$1,710,011	\$1,858,497
Home Energy Reports	\$471,510	\$461,524	\$461,434	\$462,123	\$450,864	\$441,290	\$441,290	\$441,290	\$441,290
Residential New Construction	\$624,011	\$655,407	\$578,538	\$596,237	\$674,827	\$609,588	\$611,796	\$701,026	\$767,058
Comprehensive Marketing - Residential	\$79,902	\$79,902	\$79,902	\$79,902	\$64,758	\$79,758	\$79,758	\$91,722	\$99,999
Residential Pilots	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Community Based Initiatives - Residential	\$68,915	\$77,352	\$87,786	\$96,283	\$75,839	\$86,273	\$94,769	\$99,214	\$118,820
Residential Workforce Development					\$118,267	\$137,267	\$176,938	\$157,857	\$221,841
<b>Residential Total</b>	<b>\$13,567,103</b>	<b>\$14,848,035</b>	<b>\$15,667,380</b>	<b>\$16,556,400</b>	<b>\$16,612,419</b>	<b>\$17,414,933</b>	<b>\$21,980,903</b>	<b>\$19,960,980</b>	<b>\$27,447,219</b>
EERMC	\$362,446	\$365,091	\$380,401	\$364,676	\$321,226	\$400,047	\$468,377	\$460,054	\$587,242
OER	\$362,446	\$365,091	\$380,401	\$364,676	\$321,226	\$400,047	\$468,377	\$460,054	\$587,242
<b>Regulatory Total</b>	<b>\$724,892</b>	<b>\$730,182</b>	<b>\$760,801</b>	<b>\$729,352</b>	<b>\$642,453</b>	<b>\$800,094</b>	<b>\$936,754</b>	<b>\$920,108</b>	<b>\$1,174,484</b>
<b>Portfolio Total</b>	<b>\$32,418,270</b>	<b>\$35,694,152</b>	<b>\$37,196,721</b>	<b>\$39,098,007</b>	<b>\$36,916,618</b>	<b>\$39,139,177</b>	<b>\$46,106,605</b>	<b>\$44,943,860</b>	<b>\$57,695,535</b>

2020 Plan values based on 2020 Gas BC Model, not 2021-2023 3YP Attachment Tables, in order to achieve program-level granularity