

VERIZON PENNSYLVANIA LLC
AND VERIZON NORTH LLC
STATEMENT NO. 2.0

VERIZON PENNSYLVANIA LLC AND
VERIZON NORTH LLC

V.

METROPOLITAN EDISON COMPANY,
PENNSYLVANIA ELECTRIC COMPANY
AND PENN POWER COMPANY

DOCKET NO. C-2020-3019347

VERIZON PENNSYLVANIA LLC
AND VERIZON NORTH LLC

STATEMENT NO. 2.0
(DIRECT TESTIMONY)

WITNESS: Mark S. Calnon

DATED: April 21, 2020

PUBLIC VERSION

1 **Q. PLEASE STATE YOUR NAME, TITLE AND BUSINESS ADDRESS.**

2 A. My name is Mark S. Calnon. I am a senior consultant on economic and regulatory policy
3 supporting Verizon's Network Operations & Engineering Group. My business address is
4 One Verizon Way, Basking Ridge, NJ 07920.

5 **Q. PLEASE DESCRIBE YOUR EDUCATIONAL AND PROFESSIONAL**
6 **BACKGROUND.**

7 A. I have a Bachelor of Arts degree in Economics from St. Michaels College and a Ph.D.,
8 also in Economics, from the University of Colorado. My professional experience began
9 over 30 years ago and spans economic and regulatory policy issues in
10 telecommunications and energy markets domestically and internationally. My
11 educational and professional background is more fully described in Exhibit MSC-1.

12 **Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE PENNSYLVANIA**
13 **PUBLIC UTILITY COMMISSION OR OTHER STATE REGULATORY**
14 **AGENCIES?**

15 A. Yes. Prior to the merger of Bell Atlantic and GTE, I presented testimony on behalf of
16 GTE on issues related to access reform, universal service, alternative regulation and
17 network modernization, and the global settlement conference. I have also presented
18 testimony on issues of pricing, incentive regulation and the market opening provisions of
19 the Telecommunications Act of 1996 before public utility commissions in Alabama,
20 Florida, Illinois, Indiana, Iowa, Kentucky, Maryland, Massachusetts, Minnesota,
21 Missouri, New Jersey, New Mexico, New York, North Carolina, Oregon, South Carolina,
22 Texas, Virginia, Washington and Wisconsin.

1 **Q. ON WHOSE BEHALF ARE YOU SUBMITTING THIS TESTIMONY?**

2 A. I am submitting this testimony on behalf of Verizon Pennsylvania LLC (“Verizon PA”)
3 and Verizon North LLC (“Verizon North”) (collectively, “Verizon”).

4 **Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?**

5 A. The purpose of my testimony is to support Verizon’s pole attachment complaint against
6 the Pennsylvania operating subsidiaries of FirstEnergy Corp. known as Metropolitan
7 Edison Company (“Met-Ed”), Pennsylvania Electric Company (“Penelec”), and
8 Pennsylvania Power Company (“Penn Power”) (collectively, “FirstEnergy”).

9 **Q. HAVE YOU PREVIOUSLY PROVIDED TESTIMONY IN THIS CASE?**

10 A. Yes. In the prior phase of this case at the FCC, I executed a sworn Affidavit with six
11 Exhibits on November 19, 2019. My November 19, 2019 sworn Affidavit and Exhibits
12 were filed at the FCC as Exhibit B to Verizon’s November 20, 2019 Pole Attachment
13 Complaint against FirstEnergy in FCC Proceeding No. 19-354, Bureau ID No. EB-19-
14 MD-008 and are attached to this direct testimony as Exhibit MSC-1.

15 **Q. PLEASE DESCRIBE THE TESTIMONY YOU PROVIDE IN EXHIBIT MSC-1.**

16 A. My testimony includes the calculation of pole attachment rates and overpayments under
17 the FCC’s pole attachment regulations, which were adopted by the Pennsylvania Public
18 Utility Commission at 52 Pa. Code § 77.4(a). In a 2011 *Pole Attachment Order*, the FCC
19 revised its regulations to require competitively neutral pole attachment rates among
20 competing providers of telecommunications, video, broadband, and other advanced
21 services. The FCC’s 2011 revisions were designed to reduce pole attachment rates and
22 eliminate the anti-competitive rates investor-owned utilities were charging competing

1 providers based on the regulatory classification of the provider, with incumbent local
2 exchange carriers (“ILECs”) including Verizon paying far higher rates than their
3 competitive local exchange carrier (“CLEC”) and cable company competitors.

4 Citing reports that investor-owned utilities had not complied with the requirement to
5 reduce the pole attachment rates they charge ILECs, the FCC further revised its
6 regulations in a 2018 *Third Report and Order*. The current regulations presumptively
7 entitle ILECs to the same pole attachment rate guaranteed their competitors if an ILEC
8 attaches to an investor-owned utility’s poles under a broadly defined set of joint use
9 agreements. This presumptively guaranteed rate is known as the “new telecom rate” and
10 is set by a formula in the FCC’s regulations that uses the pole owner’s reported cost data
11 and certain presumptive inputs to produce a rental rate that the FCC and courts found
12 fully compensatory for the use of pole space. An investor-owned utility can try to rebut
13 the FCC’s new telecom rate presumption with clear and convincing evidence that it
14 provides the ILEC net benefits under the terms and conditions of the joint use agreement
15 that materially advantage the ILEC as compared to the terms and conditions provided
16 CLECs and cable companies providing telecommunications services on the same poles.
17 If an investor-owned utility establishes that an ILEC enjoys such net material competitive
18 benefits, the maximum rate it may charge the ILEC is a rate known as the “pre-existing
19 telecom rate,” which is about 1.51 times the new telecom rate when calculated using the
20 FCC’s presumptive inputs.

21 In my testimony, I describe the proper calculation of new telecom rates under the FCC’s
22 new telecom rate formula and calculate the per-pole new telecom rates that FirstEnergy
23 should have charged Verizon since the July 12, 2011 effective date of the FCC’s *Pole*

1 *Attachment Order*. I also compare the properly calculated new telecom rates to the per-
2 pole rental amounts FirstEnergy charged Verizon and calculate the extent to which First
3 Energy overcharged Verizon as compared to properly calculated new telecom rates. I
4 then explain my conclusion that FirstEnergy has not rebutted the new telecom rate
5 presumption, but nonetheless describe the proper calculation of pre-existing telecom rates
6 under the FCC's pre-existing telecom rate formula. I also calculate the amounts Verizon
7 has overpaid FirstEnergy as compared to properly calculated pre-existing telecom rates.

8 My analysis shows a proper application of the FCC's new telecom rate formula produces
9 the following per-pole new telecom rates for Verizon's use of FirstEnergy's poles for the
10 2011 to 2019 rental years:

New Telecom Rates for Verizon's Use of FirstEnergy's Poles (per pole)									
Rental Year	2011	2012	2013	2014	2015	2016	2017	2018	2019
Met-Ed poles	\$8.29	\$9.87	\$10.07	\$5.02	\$9.35	\$8.79	\$9.55	\$12.20	\$13.83
Penelec poles	\$6.43	\$6.79	\$7.18	\$5.21	\$6.96	\$7.18	\$7.49	\$10.49	\$9.07
Penn Power poles	\$7.30	\$8.47	\$8.51	\$8.21	\$8.94	\$9.40	\$9.08	\$11.18	\$11.80

11 My calculations show that Verizon has overpaid FirstEnergy by [REDACTED] to date in
12 excess of pole attachment rent calculated using these new telecom rates, paired with
13 proportional new telecom rates for FirstEnergy's use of Verizon's poles, since the July
14 12, 2011 effective date of the FCC's *Pole Attachment Order*.

15 My analysis also shows a proper application of the FCC's pre-existing telecom rate
16 formula produces the following per-pole pre-existing telecom rates for Verizon's use of
17 FirstEnergy's poles for the 2011 to 2019 rental years:

Pre-Existing Telecom Rates for Verizon's Use of FirstEnergy's Poles (per pole)									
Rental Year	2011	2012	2013	2014	2015	2016	2017	2018	2019
Met-Ed poles	\$12.57	\$14.96	\$15.26	\$7.61	\$14.16	\$13.32	\$14.47	\$18.49	\$20.96
Penelec poles	\$9.74	\$10.29	\$10.89	\$7.89	\$10.54	\$10.88	\$11.35	\$15.90	\$13.75
Penn Power poles	\$11.06	\$12.83	\$12.90	\$12.44	\$13.54	\$14.24	\$13.75	\$16.94	\$17.88

1 My calculations show that Verizon has overpaid FirstEnergy by [REDACTED] to date in
2 excess of pole attachment rent calculated using these pre-existing telecom rates, paired
3 with proportional pre-existing telecom rates for FirstEnergy's use of Verizon's poles,
4 since the July 12, 2011 effective date of the FCC's *Pole Attachment Order*.

5 **Q. PLEASE DESCRIBE THE SIX EXHIBITS INCLUDED IN EXHIBIT MSC-1.**

6 A. The first three exhibits include my new telecom and pre-existing telecom rate
7 calculations for Verizon's use of Met-Ed's poles (Exhibit C-1), Penelec's poles (Exhibit
8 C-2), and Penn Power's poles (Exhibit C-3). The fourth exhibit (Exhibit C-4) includes
9 my calculation of the rate of return input for use in the new telecom and pre-existing
10 telecom rate calculations. The fifth exhibit (Exhibit C-5) includes my calculation of the
11 proportional new telecom and pre-existing telecom rate calculations Verizon would
12 charge FirstEnergy for use of Verizon's poles if it were charged the new telecom and pre-
13 existing telecom rates I calculated in Exhibits C-1 through C-3. The sixth exhibit
14 (Exhibit C-6) includes my calculation of the amounts Verizon has overpaid FirstEnergy
15 as compared to the properly calculated new telecom and pre-existing telecom rates.

16 **Q. DO YOU HAVE ANY CORRECTIONS TO MAKE TO EXHIBIT MSC-1?**

17 A. No.

1 **Q. DO YOU REAFFIRM AND ADOPT THE SWORN AFFIDAVIT AND EXHIBITS**
2 **ATTACHED AS EXHIBIT MSC-1 AS YOUR DIRECT TESTIMONY IN THIS**
3 **PHASE OF THE PROCEEDING?**

4 A. Yes. Rather than repeating my November 19, 2019 sworn Affidavit and Exhibits, I adopt
5 Exhibit MSC-1 in its entirety as my direct testimony.

6 **Q. ARE YOU SPONSORING ANY OTHER EXHIBITS WITH YOUR DIRECT**
7 **TESTIMONY?**

8 A. Yes. Exhibit MSC-2 includes exhibits that Verizon filed at the FCC as Verizon Exhibits
9 36 through 43. I have maintained the FCC exhibit numbers to limit the potential for
10 confusion. These exhibits include excerpts from the publicly available materials I relied
11 on to calculate the rate of return inputs I use in my new telecom and pre-existing telecom
12 rate calculations.

13 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

14 A. Yes, although I reserve the right to supplement my direct testimony should it become
15 necessary to do so.

Exhibit MSC-1
Redacted Public Version

Exhibit B

Before the
Federal Communications Commission
Washington, DC 20554

<p>VERIZON PENNSYLVANIA LLC and VERIZON NORTH LLC,</p> <p style="text-align: center;">Complainants,</p> <p style="text-align: center;">v.</p> <p>METROPOLITAN EDISON COMPANY, PENNSYLVANIA ELECTRIC COMPANY, and PENN POWER COMPANY,</p> <p style="text-align: center;">Defendants.</p>

Proceeding No. 19-____
Bureau ID No. EB-19-MD-____

AFFIDAVIT OF MARK S. CALNON, PH.D.

COMMONWEALTH OF PENNSYLVANIA)
) ss.
COUNTY OF BUCKS)

I, MARK S. CALNON, being sworn, depose and say:

1. I am a senior consultant on economic and regulatory policy supporting Verizon’s Network Operations & Engineering Group. I am executing this Affidavit in support of the Pole Attachment Complaint of Verizon Pennsylvania LLC (“Verizon Pennsylvania”) and Verizon North LLC (“Verizon North”) (collectively, “Verizon”) against the Pennsylvania operating subsidiaries of FirstEnergy Corp. known as Metropolitan Edison Company (“Met-Ed”), Pennsylvania Electric Company (“Penelec”), and Pennsylvania Power Company (“Penn Power”) (collectively, “FirstEnergy”). I am also executing an Affidavit today in support of a related Pole Attachment Complaint that Verizon Maryland LLC is filing against the Maryland operating subsidiary of FirstEnergy Corp. known as The Potomac Edison Company (“Potomac Edison”). I

PUBLIC VERSION

know the following of my own personal knowledge and, if called as a witness in this action, I could and would testify competently to these facts under oath.

2. I have a Bachelor of Arts degree in Economics from St. Michaels College and a Ph.D., also in Economics, from the University of Colorado. My professional experience began over 30 years ago and spans economic and regulatory policy issues in telecommunications and energy markets domestically and internationally. My specific areas of expertise include demand analysis, strategic planning, pricing and policy analysis focused primarily on the regulated product and service offerings of incumbent telecom and electric distribution companies. My responsibilities have included estimating the demand for wireline telephone service, the demand for the various jurisdictional usage classifications of the wireline network (local, intralata toll, interlata toll and switched access) as well as the demand for various new / advanced service offerings. My work in the area of pricing and costing has included the design of methodologies to determine the proper price levels and rate relationships between the wholesale provision of access services (switched and special) and retail toll and private line offerings. I have also developed pricing methodologies consistent with the market-opening requirements of the Telecommunications Act of 1996 (“TA96”). Following passage of TA96, I have also been responsible for developing studies documenting the level of competition in various market areas and advocating market-appropriate levels of regulatory relief. I have also provided economic analysis supporting litigation in the areas of damage claims regarding alleged delays in provisioning new services and claims of unreasonable discrimination relating to the pricing and costing practices associated with third party make-ready costs and pole rental rates.

3. Over the course of my career I have participated in over 30 regulatory proceedings before 20 state commissions. My responsibilities in these proceedings have

included the development and filing of written testimony, participation in industry workshops, settlement conferences and ex parte presentations for Commissioners and their staff. I have also filed Affidavits with the Federal Communications Commission to support Pole Attachment Complaints filed by Verizon Florida LLC against Florida Power and Light Company and by Verizon Virginia LLC and Verizon South Inc. against Virginia Electric and Power Company d/b/a Dominion Virginia Power.¹

4. I have relied on the best data available to Verizon in calculating the rental rates detailed in this Affidavit. I reserve the right to supplement or revise this Affidavit upon review of additional data and information, including data and information provided by FirstEnergy during the course of this proceeding.

A. FirstEnergy's Rental Rates Are Much Higher than Properly Calculated New Telecom Rates.

5. I calculated the per-pole new telecom rates that apply to Verizon's use of FirstEnergy's poles for the 2011 through 2019 rental years using the best information available to Verizon. My new telecom rate calculations are attached as Exhibits C-1 (Met-Ed), C-2 (Penelec), and C-3 (Penn Power).

6. In this section, I explain the formula, inputs, and data that I used to complete the calculations at Exhibits C-1 through C-3. My analysis shows that, for the 2011 through 2018 rental years for which all three FirstEnergy companies have invoiced and collected rent from

¹ See Docket No. 15-190, File No. EB-15-MD-006, Pole Attachment Complaint Ex. A (Aug. 3, 2015) and Pole Attachment Complaint Reply Ex. A (Feb. 9, 2016); Docket No. 14-216, File No. EB-14-MD-003, Pole Attachment Complaint Ex. B (Jan. 31, 2014) and Pole Attachment Complaint Reply Ex. A (Nov. 24, 2015); Pole Attachment Complaint Ex. A, Docket No. 15-73, File No. EB-15-MD-002 (Mar. 13, 2015).

Verizon,² the average new telecom rate for Verizon’s use of FirstEnergy’s poles was \$8.42 per pole. FirstEnergy instead charged Verizon an effective per pole rental rate that averaged ██████ per-pole,³ which is ██████ times this average \$8.42 per pole new telecom rate.⁴

7. My calculations use the FCC’s new telecom formula, which has two basic components: (1) the annual cost of pole ownership and (2) the percentage of that annual cost assigned to an attaching party, which reflects the direct space occupied by the attaching party and a share of the unusable space on the pole.⁵ Stated otherwise, the maximum rate that may be charged under the new telecom rate formula, is calculated as follows:

<p>Rate = Space Factor x Cost</p> $\text{Where Space Factor} = \left[\frac{\left(\frac{\text{Space Occupied}}{\text{Pole Height}} \right) + \left(\frac{2}{3} \times \frac{\text{Unusable Space}}{\text{No. of Attaching Entities}} \right)}{\text{Pole Height}} \right]$ <p>And Cost = Net Cost of Bare Pole x Carrying Charge Rate x Cost Allocator</p>
--

8. When calculating the space factor for determining a new telecom rate for Verizon’s use of FirstEnergy’s poles, I used the presumptive inputs from the Commission’s regulations, which provide that the space occupied by a telecommunications attacher is 1 foot, the amount of unusable space is 24 feet, pole height is 37.5 feet, and the average number of

² To date, Penn Power is the only defendant that has invoiced pole attachment rent for the 2019 rental year.

³ My calculation of the effective per pole rate that FirstEnergy charged appears in Section B.

⁴ ██████ per pole / \$8.42 per pole = ██████ times.

⁵ 47 C.F.R. § 1.1406(d).

attaching entities is 5.⁶ I used the presumption that there are an average of 5 attaching entities because FirstEnergy serves areas in Pennsylvania that are urbanized under the Commission’s regulations.⁷ Met-Ed’s service territory includes Reading, Berks County, and York County; Penelec’s service territory includes Erie, Cambria County, and Somerset County; and Penn Power’s service territory includes Lawrence County and Mercer County.⁸ Each of these areas has a population greater than 50,000,⁹ and the Commission’s rules state that “[i]f any part of the utility’s service area within the state has a designation of urbanized (50,000 or higher population) by the Bureau of Census, United States Department of Commerce, then all of that service area shall be designated as urbanized for purposes of determining the presumptive average number of attaching entities.”¹⁰

9. Use of these presumptive inputs results in a space factor of 0.1120, which I used to calculate the new telecom rate for Verizon’s use of FirstEnergy’s poles:

⁶ 47 C.F.R. §§ 1.1409(c), 1.1410.

⁷ 47 C.F.R. § 1.1417(c); *Implementation of Section 224 of the Act; A National Broadband Plan for Our Future*, Report and Order and Order on Reconsideration, 26 FCC Rcd 5240, 5304 (¶ 149 n. 449) (2011) (“*Pole Attachment Order*”) (“An urbanized service area has 50,000 or higher population, while a non-urbanized service area has under 50,000 population.”).

⁸ Compl. Ex. A at VZ00004 (Aff. of S. Mills, Nov. 19, 2019, ¶ 5 (“Mills Aff.”)).

⁹ See QuickFacts, U.S. Census Bureau, available at <https://www.census.gov/quickfacts> (Reading = 88,495; Berks County = 420,152; York County = 448,273; Erie = 96,471; Cambria County = 131,730; Somerset County = 73,952; Lawrence County = 86,184, Mercer County = 110,683).

¹⁰ 47 C.F.R. § 1.1409(c).

Space Factor (2011 – 2019 Rental Years):		
Space Occupied by Verizon:		1 ft
Total Usable Space (2/3)		0.667 ft
Total Usable Space	13.5 ft	
Total Pole Height	37.5 ft	
Unusable Space		24 ft
Average Number of Attaching Entities		5
SPACE FACTOR		0.1120

10. To calculate the cost component of the new telecom formula, I required three inputs: net investment per distribution pole, carrying charge rate, and cost allocator. I used a cost allocator of 0.66 when calculating rates for use of FirstEnergy’s poles because Commission rules require that value when the average number of attaching entities input is 5.¹¹ For the other two inputs to the cost calculation, I used each defendant’s reported cost data from the immediately preceding year to calculate a particular rental year’s new telecom rate (*i.e.*, I used 2010 cost data to calculate 2011 new telecom rates).

11. I used the following formula to calculate net investment per distribution pole:

$$\frac{\text{Net Pole Investment} \times (1 - \text{Appurtenances Factor})}{\text{Number of Poles}}$$

where net pole investment is the result of reducing gross investment assigned to the poles account by the amount of the depreciation and deferred tax reserves assigned (or allocated) to these accounts.¹² The appurtenance factor, which eliminates investment in non-pole

¹¹ 47 C.F.R. § 1.1406(d)(2)(i).

¹² *In the Matter of Amendment of Commission’s Rules and Policies Governing Pole Attachments; Implementation of Section 703(e) of the Telecommunications Act of 1996*, Consolidated Partial Order on Reconsideration, 16 FCC Rcd 12103, 12122-23, 12161 (¶¶ 32, 121) (2001).

appurtenances, is presumptively 15 percent for poles owned by an electric utility, and so I used the 15 percent value when calculating new telecom rates for use of FirstEnergy's poles.¹³

12. I calculated the carrying charge rate based on reported data about administrative expenses, maintenance expenses, depreciation, and taxes from the FERC Form 1 filed for each defendant, along with its "weighted average cost of capital, both debt and equity."¹⁴ For the 2011 through 2014 rental years, I used cost of capital inputs that were, at that time, the rates of return most recently set by the Pennsylvania Public Utility Commission ("PUC"). I do not have access to the rates of return that result from confidential settlements that the PUC approved to resolve the defendants' 2014 and 2016 rate cases.¹⁵ A proper application of the new telecom rate formula would use these updated rates of return, although it appears that the defendants continue to use the older, outdated rates of return to unreasonably increase the pole attachment rates that they charge all attachers.¹⁶ Without access to the confidential information (available to FirstEnergy but not to Verizon), for the 2015 through 2019 rental years, I used publicly available documents¹⁷ to calculate the most accurate rate of return possible. My calculations are detailed at Exhibit C-4 and I reserve the right to update my calculations when FirstEnergy produces the information from its 2014 and 2016 rate cases.

¹³ *Amendment of Rules & Policies Governing the Attachment of Cable Television Hardware to Util. Poles*, Report and Order, 2 FCC Rcd 4387 ¶ 19 (1987).

¹⁴ *See Matter of Multimedia Cablevision, Inc.*, 11 FCC Rcd 11202, 11215 (¶ 36) (1996).

¹⁵ *See* Pa. PUC Docket R-2014-2428745 (Met-Ed); Pa. PUC Docket R-2014-2428743 (Penelec); PA PUC Docket R-2014-2428744 (Penn Power); Pa. PUC Docket R-2016-2537349 (Met-Ed); PA PUC Docket R-2016-2537352 (Penelec).

¹⁶ *See* Compl. Ex. 28 at VZ00648-687 (Email from S. Schafer, FirstEnergy, to J. Slavin, Verizon (May 11, 2018)).

¹⁷ Relevant excerpts of these documents are attached to Verizon's Pole Attachment Complaint as Exhibits 36-43.

PUBLIC VERSION

13. The new telecom formula (*i.e.*, Space Factor x Net Investment per Distribution Pole x Carrying Charge Rate x Cost Allocator), using the inputs described above and each operating company’s cost data, produces the following per-pole rates for Verizon’s use of FirstEnergy’s poles, as set forth in more detail in Exhibit C-1 (Met-Ed), C-2 (Penelec), and C-3 (Penn Power):

Verizon’s Use of Met-Ed’s Poles

Rental Year Using data from	2011 2010	2012 2011	2013 2012	2014 2013	2015 2014	2016 2015	2017 2016	2018 2017
Space Factor	0.1120	0.1120	0.1120	0.1120	0.1120	0.1120	0.1120	0.1120
<i>multiplied by</i>								
Net Investment per Distribution Pole	\$324.00	\$389.35	\$423.90	\$413.20	\$458.77	\$462.43	\$473.97	\$580.94
<i>multiplied by</i>								
Capital Carrying Charge Rate	34.63%	34.31%	32.14%	16.45%	27.56%	25.71%	27.26%	28.41%
<i>multiplied by</i>								
Urbanized Service Area Cost Allocator	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
<i>equals</i>								
New Telecom Rate (per pole)	\$8.29	\$9.87	\$10.07	\$5.02	\$9.35	\$8.79	\$9.55	\$12.20

Verizon’s Use of Penelec’s Poles

Rental Year Using data from	2011 2010	2012 2011	2013 2012	2014 2013	2015 2014	2016 2015	2017 2016	2018 2017
Space Factor	0.1120	0.1120	0.1120	0.1120	0.1120	0.1120	0.1120	0.1120
<i>multiplied by</i>								
Net Investment per Distribution Pole	\$343.23	\$365.97	\$377.45	\$395.05	\$429.80	\$440.74	\$439.88	\$534.63
<i>multiplied by</i>								
Capital Carrying Charge Rate	25.33%	25.11%	25.75%	17.83%	21.90%	22.03%	23.04%	26.56%
<i>multiplied by</i>								

PUBLIC VERSION

Urbanized Service Area Cost Allocator	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
<i>equals</i>								
New Telecom Rate (per pole)	\$6.43	\$6.79	\$7.18	\$5.21	\$6.96	\$7.18	\$7.49	\$10.49

Verizon's Use of Penn Power's Poles

Rental Year Using data from	2011 2010	2012 2011	2013 2012	2014 2013	2015 2014	2016 2015	2017 2016	2018 2017
Space Factor	0.1120	0.1120	0.1120	0.1120	0.1120	0.1120	0.1120	0.1120
<i>multiplied by</i>								
Net Investment per Distribution Pole	\$294.14	\$303.75	\$339.59	\$343.25	\$381.65	\$415.53	\$424.62	\$537.53
<i>multiplied by</i>								
Capital Carrying Charge Rate	33.56%	37.70%	33.92%	32.37%	31.68%	30.60%	28.92%	28.14%
<i>multiplied by</i>								
Urbanized Service Area Cost Allocator	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
<i>equals</i>								
New Telecom Rate (per pole)	\$7.30	\$8.47	\$8.51	\$8.21	\$8.94	\$9.40	\$9.08	\$11.18

14. For comparative purposes, the straight average of the new telecom rates for the defendants for the 2011 through 2018 rental years is \$8.42 per pole:

New Telecom Rates (per pole)	2011	2012	2013	2014	2015	2016	2017	2018	Average
Met-Ed	\$8.29	\$9.87	\$10.07	\$5.02	\$9.35	\$8.79	\$9.55	\$12.20	\$9.14
Penelec	\$6.43	\$6.79	\$7.18	\$5.21	\$6.96	\$7.18	\$7.49	\$10.49	\$7.22
Penn Power	\$7.30	\$8.47	\$8.51	\$8.21	\$8.94	\$9.40	\$9.08	\$11.18	\$8.89
Average	\$7.34	\$8.38	\$8.59	\$6.15	\$8.42	\$8.46	\$8.71	\$11.29	\$8.42

15. As detailed below, Verizon effectively paid FirstEnergy ██████ per pole during these rental years, which is ██████ times this average new telecom rate¹⁸ and ██████ more per pole.¹⁹

B. FirstEnergy Charges Verizon Unreasonably High Pole Attachment Rates in Pennsylvania.

16. FirstEnergy has charged and collected from Verizon pole attachment rates far higher than the new telecom rate since at least the effective date of the 2011 *Pole Attachment Order*. Two of the three FirstEnergy operating companies (Penelec and Penn Power) charged per-pole rental rates, while one operating company (Met-Ed) charged a far higher rental rate on a subset of poles.²⁰ To permit a proper comparison of the per-pole difference between the rental rates charged by FirstEnergy and the per-pole rates that result from a proper application of the new telecom formula, I have converted the rental rates charged by Met-Ed into equivalent per-pole rates across all Met-Ed poles to which Verizon is attached.

17. There are several ways to convert the pole attachment rates that Met-Ed charged into per-pole rates. One way would be to determine the per-pole rate that Verizon would pay for use of Met-Ed's poles if Met-Ed paid nothing for use of Verizon's poles. Using the 2018 rental year as an example, this analysis shows that Met-Ed charged and collected rent from Verizon that was equivalent to charging Verizon ██████ per pole (rounded to the nearest cent) for use of Met-Ed's poles with Met-Ed paying Verizon nothing for use of Verizon's poles:

¹⁸ ██████ per pole / \$8.42 per pole = ██████ times.

¹⁹ ██████ per pole - \$8.42 per pole = ██████ per pole.

²⁰ Compl. Ex. A at VZ00004-05 (Mills Aff. ¶ 7).

PUBLIC VERSION

2018 Invoice	JUA Rental Rate	No. of Poles to which Rental Rate Applies	Rental Amount
Verizon Rent	██████	41,725	██████
Met-Ed Rent	--	--	--
Net Rent Verizon Paid Met-Ed			██████
Alternate Approach	Per-Pole Rental Rate	No. of Poles to which Rental Rate Applies	Rental Amount
Verizon Rent	██████	129,421	██████
Met-Ed Rent	\$0.00	30,027	\$0
Net Rent Verizon Would Pay Met-Ed			██████

This calculation illustrates the unreasonableness of the rental rates that Met-Ed has charged and collected, because Met-Ed requires far more space on utility poles than Verizon requires. There is no reasonable economic justification for setting rental rates that charge Verizon ██████ per pole for use of less space on a pole than Met-Ed uses for free.

18. Another way to compare the rental rates that Met-Ed charged Verizon to the per-pole rates that result from a proper application of the FCC’s new telecom formula assigns the same per-pole rate to Met-Ed’s use of Verizon’s poles as applies to Verizon’s use of Met-Ed’s poles. This so-called “reciprocal rate” approach, which charges both parties the same rate, also fails to account for the fact that Met-Ed uses far more space on a pole than is used by Verizon, and so should pay a higher rate given the FCC’s expectation that electric utilities would pay a rate that accounts for their greater use of space on the pole.²¹ But, by at least assigning some cost to Met-Ed’s use of Verizon’s poles, this reciprocal rate approach provides a useful way to compare the contract rates to the per-pole rates that result from the new telecom formula.

²¹ See *Verizon Va., LLC v. Va. Elec. & Power Co.*, 32 FCC Rcd 3750, 3760 (¶ 21 n.78) (EB 2017) (quoting *Pole Attachment Order*, 26 FCC Rcd at 5337 (¶ 218 n.662)).

PUBLIC VERSION

19. I calculated the reciprocal per-pole rates, rounded to the nearest cent, that are equivalent to the rates Met-Ed charged for the 2011 through 2018 rental years as follows:

Rental Year	Verizon Gross Rent to Met-Ed		Met-Ed Gross Rent to Verizon	
	Met-Ed Poles	Per-Pole Reciprocal Rate	Verizon Poles	Per-Pole Reciprocal Rate
2011	129,306	██████	30,015	██████
2012	129,288	██████	30,018	██████
2013	129,308	██████	30,021	██████
2014	129,324	██████	30,021	██████
2015	129,421	██████	30,023	██████
2016	129,422	██████	30,026	██████
2017	129,422	██████	30,026	██████
2018	129,421	██████	30,027	██████

20. As noted above, I calculated a straight average of these effective per-pole rates (which are equivalent to the rates charged by Met-Ed) and the per-pole rates charged by Penelec and Penn Power for comparative purposes. My calculation shows that the average per-pole rate that FirstEnergy charged and collected from Verizon in Pennsylvania for the 2011 through 2018 rental years (using the per-pole rates that are equivalent to the rates charged by Met-Ed) was ██████ per pole:

Effective Contract Rates (per pole)	2011	2012	2013	2014	2015	2016	2017	2018	Avg.
Met-Ed	██████	██████	██████	██████	██████	██████	██████	██████	██████
Penelec	██████	██████	██████	██████	██████	██████	██████	██████	██████
Penn Power	██████	██████	██████	██████	██████	██████	██████	██████	██████
Average	██████	██████	██████	██████	██████	██████	██████	██████	██████

21. Comparing the ██████ average per-pole rental rate that FirstEnergy charged and collected from Verizon to the average \$8.42 per-pole rental rate that results from a proper

application of the FCC’s new telecom rate formula shows that Verizon has been paying FirstEnergy rates averaging more than [REDACTED] times the new telecom rate since the effective date of the *Pole Attachment Order*, for an average annual per-pole overpayment of [REDACTED] per pole²²:

	Average Per-Pole Contract Rate (2011-2018)	Average Per-Pole New Telecom Rate (2011-2018)	Average Contract Rate Compared to Average New Telecom Rate
Met-Ed	[REDACTED]	\$9.14	[REDACTED] times
Penelec	[REDACTED]	\$7.22	[REDACTED] times
Penn Power	[REDACTED]	\$8.89	[REDACTED] times
Average	[REDACTED]	\$8.42	[REDACTED] times

22. This calculation understates the unreasonableness of the rental rates charged and collected by FirstEnergy because it does not account for more favorable rates that apply to FirstEnergy’s use of more space on Verizon’s poles. Under the FCC’s default presumptions, Verizon occupies 1 foot of space on a pole and FirstEnergy occupies 10.5 feet of space.²³ But, using the 2018 rental year as an example, Penelec paid [REDACTED] per pole to use Verizon’s poles, which is [REDACTED] lower than the [REDACTED] per pole rate Verizon paid Penelec. For 2018, Penn Power paid [REDACTED] per pole to use Verizon’s poles, which is just [REDACTED] times the [REDACTED] per pole rate Verizon paid Penn Power. And, as noted above, Met-Ed charged Verizon rent for the 2018 rental year that was the same as if Met-Ed charged Verizon [REDACTED] per pole (rounded to the nearest cent), but paid Verizon nothing for use of 30,027 Verizon poles.

²² [REDACTED] per pole - \$8.42 per pole = [REDACTED] per pole.

²³ See 47 C.F.R. §§ 1.1409(c), 1.1410; see also Compl. Ex. A at VZ00029-30 (Mills Aff. ¶ 65).

C. FirstEnergy Collected Over ██████████ in Excess Rent from Verizon Since the Effective Date of the *Pole Attachment Order*.

23. FirstEnergy's decision to continue charging and collecting the contract rates despite Verizon's right to just, reasonable, and competitively neutral rates under federal law has denied Verizon over ██████████, on average, in annual net rent each year since the effective date of the *Pole Attachment Order*, for a total of over ██████████ to date that should be refunded to Verizon. In this section, I explain my calculations of these amounts.

24. I calculated Verizon's overpayments in accordance with FCC regulations, which give the Commission authority to award refunds consistent with the applicable statute of limitations.²⁴ Because I understand that the applicable statute of limitations in Pennsylvania permits recovery as far back as the July 12, 2011 effective date of the *Pole Attachment Order*,²⁵ I included all rental periods since July 12, 2011 in my calculation.

25. To ensure that Verizon and FirstEnergy have proportional rates for use of each other's poles, I first calculated the proportional per-pole new telecom rates that would apply to FirstEnergy's use of Verizon's poles if Verizon pays the new telecom rental rates calculated in Exhibits C-1 through C-3. My calculations of the proportional rates for FirstEnergy's use of Verizon's poles are attached as Exhibit C-5. These calculations follow the same approach detailed above with respect to Exhibits C-1 through C-3, except my annual pole cost calculation is based on Verizon's reported ARMIS data²⁶ and the 5 percent appurtenance factor that

²⁴ 47 C.F.R. § 1.1407(a).

²⁵ Compl. ¶ 57.

²⁶ The rate calculations for Met-Ed's, Penelec's, and Penn Power's use of Verizon's poles are based on the totals reported for the following four study areas: Verizon North LLC – Contel Pennsylvania (COPA), Verizon North LLC – Contel Quaker State (COQS), Verizon North LLC – Pennsylvania (GTPA), and Verizon Pennsylvania LLC – Pennsylvania (PAPA). My

presumptively applies to poles owned by an incumbent local exchange carrier (“ILEC”), and my space factor calculation uses 10.5 feet for the space occupied input to reflect the amount of space the Commission’s default presumptions assume is occupied by an electric utility.²⁷

26. I then calculated the net rental amount (meaning Verizon’s rent for use of FirstEnergy’s poles less FirstEnergy’s rent for use of Verizon’s poles) that results from the proportional new telecom rates calculated in Exhibits C-1 through C-3 and C-5. The following tables include this calculation for each defendant for the applicable Pennsylvania statute of limitations period:

New Telecom Net Rental Calculation: Met-Ed

Verizon Gross Rent		-	Met-Ed Gross Rent		=	Verizon Net Rent
Rental Year	Met-Ed Poles	New Telecom Rate for Verizon Use of Met-Ed Poles	Verizon Poles	New Telecom Rate for Met-Ed Use of Verizon Poles		Net Rent
2011	129,306	\$8.29	30,015	\$9.63		\$368,929 (172 days)
2012	129,288	\$9.87	30,018	\$9.71		\$984,598
2013	129,308	\$10.07	30,021	\$12.44		\$928,670
2014	129,324	\$5.02	30,021	\$12.15		\$284,451
2015	129,421	\$9.35	30,023	\$15.70		\$738,725
2016	129,422	\$8.79	30,026	\$12.48		\$762,895
2017	129,422	\$9.55	30,026	\$14.70		\$794,598
2018	129,421	\$12.20	30,027	\$19.11		\$1,005,120

calculation of the proportional rate for the 2011 through 2018 rental years reflect Verizon’s use of Part 32 Uniform System of Accounts (USOA) accounting. My calculation of the proportional rate for the 2019 rental year reflects Verizon’s transition to generally accepted accounting principles (GAAP) and includes the implementation rate difference referenced at 47 C.F.R. § 1.1406(e).

²⁷ See Compl. Ex. A at VZ00029-30 (Mills Aff. ¶ 65).

New Telecom Net Rental Calculation: Penelec

Verizon Gross Rent		-	Penelec Gross Rent		=	Verizon Net Rent
Rental Year	Penelec Poles	New Telecom Rate for Verizon Use of Penelec Poles	Verizon Poles	New Telecom Rate for Penelec Use of Verizon Poles		Net Rent
2011	145,168	\$6.43	73,079	\$9.63		\$108,233 (172 days)
2012	145,326	\$6.79	73,285	\$9.71		\$275,166
2013	145,419	\$7.18	73,398	\$12.44		\$131,037
2014	146,720	\$5.21	73,398	\$12.15		(\$127,375)
2015	146,732	\$6.96	73,398	\$15.70		(\$131,094)
2016	146,794	\$7.18	73,399	\$12.48		\$137,961
2017	146,814	\$7.49	73,400	\$14.70		\$20,657
2018	146,859	\$10.49	73,400	\$19.11		\$137,877

New Telecom Net Rental Calculation: Penn Power

Verizon Gross Rent		-	Penn Power Gross Rent		=	Verizon Net Rent
Rental Year	Penn Power Poles	New Telecom Rate for Verizon Use of Penn Power Poles	Verizon Poles	New Telecom Rate for Penn Power Use of Verizon Poles		Net Rent
2011	25,023	\$7.30	7,151	\$9.63		\$53,628 (172 days)
2012	25,063	\$8.47	7,162	\$9.71		\$142,741
2013	25,063	\$8.51	7,158	\$12.44		\$124,241
2014	25,282	\$8.21	7,158	\$12.15		\$120,596
2015	25,552	\$8.94	7,414	\$15.70		\$112,035
2016	25,554	\$9.40	7,413	\$12.48		\$147,693
2017	25,557	\$9.08	7,411	\$14.70		\$123,116
2018	25,574	\$11.18	7,416	\$19.11		\$144,198
2019	25,595	\$11.80	7,415	\$18.28		\$166,475

27. These calculations show that Verizon would have paid the following total net rental amounts to FirstEnergy if rent was appropriately set for Verizon and FirstEnergy at properly-calculated proportional per-pole new telecom rental rates:

New Telecom Net Rental Calculation: FirstEnergy Combined

Rental Year	Net Rent to Met-Ed	Net Rent to Penelec	Net Rent to Penn Power	Net Rent to FirstEnergy Combined
2011 (172 days)	\$368,929	\$108,233	\$53,628	\$530,790
2012	\$984,598	\$275,166	\$142,741	\$1,402,505
2013	\$928,670	\$131,037	\$124,241	\$1,183,948
2014	\$284,451	(\$127,375)	\$120,596	\$277,672
2015	\$738,725	(\$131,094)	\$112,035	\$719,666
2016	\$762,895	\$137,961	\$147,693	\$1,048,550
2017	\$794,598	\$20,657	\$123,116	\$938,371
2018	\$1,005,120	\$137,877	\$144,198	\$1,287,195
2019	Not yet invoiced		\$166,475	\$166,475 to date

28. Verizon paid FirstEnergy rates far higher than new telecom rates for the time period covered by the applicable Pennsylvania statute of limitations. In the next table and at Exhibit C-6, I compare the amounts that Verizon paid FirstEnergy to the amounts Verizon should have paid FirstEnergy if rent was appropriately set at properly-calculated proportional per-pole new telecom rental rates:

Refund Calculation: New Telecom Rates

Rental Year	Net Rent Verizon Paid FirstEnergy	Net Rent at New Telecom Rates	Verizon's Overpayment to FirstEnergy
2011 (172 days)	██████████	\$530,790	██████████
2012	██████████	\$1,402,505	██████████
2013	██████████	\$1,183,948	██████████
2014	██████████	\$277,672	██████████
2015	██████████	\$719,666	██████████
2016	██████████	\$1,048,550	██████████
2017	██████████	\$938,371	██████████
2018	██████████	\$1,287,195	██████████
2019 (to date)	██████████	\$166,475	██████████
Total	██████████	\$7,555,171	██████████

29. For the July 12, 2011 through 2018 rental period (7.47 years) paid in full to date, these overpayments produce an average annual overpayment of over ██████████ per year.²⁸

D. Verizon Also Paid Far More than the Rates that Result from the Pre-Existing Telecom Rate Formula.

30. The Commission set the rate that results from the pre-existing telecom formula as a “hard cap” on the rate that may be charged if an electric utility like FirstEnergy proves by clear and convincing evidence that an ILEC like Verizon “receives net benefits that materially advantage the [ILEC] over other telecommunications providers” under a “new or newly renewed” joint use agreement.²⁹ I reviewed the list of alleged “competitive advantages” that

²⁸ ██████████ of the ██████████ overpayment is attributable to the 2011 to 2018 rental years. ██████████ / 7.47 years = ██████████ average annual overpayment.

²⁹ *In the Matter of Accelerating Wireline Broadband Deployment*, Third Report and Order and Declaratory Ruling, 33 FCC Rcd 7705, 7770-71 (¶¶ 127-29) (2018) (“*Third Report and Order*”).

FirstEnergy provided Verizon on June 7, 2018³⁰ and identified certain foundational flaws that lead me to conclude that FirstEnergy has not identified any such net material advantage.

31. As an initial matter, FirstEnergy failed to provide any quantifications or credible documentation to support the existence of any of the alleged advantages in the list. The sole material offered to Verizon was a draft license agreement.³¹ But the terms of a draft license agreement are only to a limited degree relevant to an analysis of competitive neutrality. A draft agreement, by definition, contains a party's starting point in negotiations, and is not evidence of the actual negotiated terms adopted by contracting parties. Thus, a draft license agreement is only relevant to an analysis of competitive neutrality in that it provides an example of the terms and conditions FirstEnergy considers most favorable, although not necessarily achievable in practice.

32. FirstEnergy also failed to account for any disadvantages to Verizon as compared to its competitors. But any analysis of competitive neutrality must consider both burdens and benefits associated with the use of FirstEnergy's poles. As the Commission explained, "[a] failure to weigh, and account for, the different rights and responsibilities in joint use agreements could lead to marketplace distortions."³² As a result, a proper calculation of a competitively neutral rental rate must consider the net difference between an ILEC and its competitors, accounting both for unique costs imposed on the ILEC and unique benefits given the ILEC, if any. FirstEnergy did not account for the unique pole ownership costs that increase Verizon's costs as compared to its competitors. It also did not factor in unique offsetting burdens imposed

³⁰ See Compl. Ex. 29 at VZ00690 (Email from D. Karafa, FirstEnergy, to B. Trospen, Verizon (June 7, 2018)).

³¹ See Compl. Ex. 13 at VZ00486-503 (Draft License Agreement).

³² *Pole Attachment Order*, 26 FCC Rcd at 5335 (¶ 216 n.654).

on Verizon under the joint use agreements. For example, unlike licensees, Verizon must provide FirstEnergy every alleged “benefit” that FirstEnergy provides Verizon. In some cases, such as with a \$1000 application preparation fee, the alleged “benefit” is not tied to the number of poles to which a party is attached.³³ In such cases, the value of any “advantage” to Verizon from the alleged benefit is directly offset by the cost of the reciprocal “disadvantage” to Verizon for not receiving the alleged benefit from FirstEnergy. The offset eliminates any net advantage to Verizon as compared to its competitors.

33. FirstEnergy also relies primarily on one-time operational differences that are incurred, if ever, when an entity first attaches to a pole. Some differences reflect only a different process followed by a licensee as compared to Verizon, and a difference in approach does not establish a difference in cost, value, or burden. But in some cases, the difference in approach imposes higher costs on Verizon as compared to its competitors. For example, Met-Ed and Penn Power apparently follow a so-called “cost-causer” approach with respect to make-ready for Verizon’s competitors, meaning that they charge Verizon’s competitors the actual cost of any make-ready that they perform for Verizon’s competitors.³⁴ Met-Ed and Penn Power instead treat make-ready for Verizon as a reciprocal obligation, meaning that Verizon must incur the cost of make-ready that Met-Ed and Penn Power require and vice versa. This different approach to make-ready has imposed higher costs on Verizon than it would pay under the cost-causer

³³ See Compl. Ex. 29 at VZ00690 (Email from D. Karafa, FirstEnergy, to B. Trosper, Verizon (June 7, 2018)); see also Compl. Ex. 14 at VZ00510 (Bell License, Art. XII(1)).

³⁴ Compl. Ex. 29 at VZ00690 (Email from D. Karafa, FirstEnergy, to B. Trosper, Verizon (June 7, 2018)); see also [REDACTED]. Penelec also apparently follows a cost-causer approach with respect to Verizon’s competitors. [REDACTED] Verizon is treated comparably, as Penelec also charges Verizon for make-ready it performs for Verizon. Compl. Ex. A at VZ00025 (Mills Aff. ¶ 56).

approach that apparently applies to Verizon’s competitors. For example, data from the 2014 to September 2019 time period shows that Verizon was required to incur the cost to replace 66 poles at Met-Ed’s request and 594 poles at Penn Power’s request, whereas Met-Ed replaced 3 poles at Verizon’s request and Penn Power replaced 88 poles at Verizon’s request during that same time period.³⁵ Thus, while Verizon was the “cost causer” for 91 pole replacements, Verizon incurred the cost to replace 660 poles—more than 7 times the number of pole replacements that Verizon requested. The difference in approach to make-ready is thus a competitive disadvantage for Verizon.

34. In addition, FirstEnergy has not quantified any of the differences on an annually recurring per-pole basis, which is critical when seeking to rationalize annually recurring per-pole rental rates to ensure competitive neutrality. For example, because Verizon is attached to 301,854 FirstEnergy poles (using the pole counts from FirstEnergy’s invoices for 2018 rent), a one-time \$1000 agreement preparation fee would have been fully paid for in one rental year for a per-pole charge of less than one cent.³⁶ Such an isolated, one-time fee cannot justify charging a higher annually recurring rental rate, let alone one that has averaged [REDACTED] more per pole than the new telecom rate applicable to Verizon’s competitors.

35. These and other flaws in FirstEnergy’s list of alleged competitive advantages lead me to conclude that FirstEnergy will not be able to justify charging Verizon a rental rate that is higher than a properly calculated new telecom rate. I have nonetheless calculated rates using the pre-existing telecom rate formula, which the Commission set as a “hard cap” on the rental rates

³⁵ Compl. Ex. A at VZ00026-27 (Mills Aff. ¶¶ 59-60).

³⁶ $\$1000 / 301,854 = \0.003 ; *see also* Compl. Ex. 14 at VZ00512 (Bell License, Art. XII(1)).

that FirstEnergy may charge Verizon.³⁷ My analysis shows that FirstEnergy has charged Verizon [REDACTED] more every year than it could charge using properly calculated per-pole pre-existing telecom rates. As a result, there are no circumstances under which FirstEnergy could lawfully charge the contract rates.

36. My pre-existing telecom rate calculations are included with my new telecom rate calculations in Exhibits C-1 (Met-Ed), C-2 (Penelec), and C-3 (Penn Power). The pre-existing telecom formula differs from the new telecom formula in that it does not include the 0.66 cost allocator when determining the annual cost of pole ownership. As a result, a properly calculated pre-existing telecom rate is approximately 50 percent higher than a properly-calculated new telecom rate. As shown in Exhibits C-1 through C-3, I calculate the following pre-existing telecom rates for Verizon’s use of FirstEnergy’s poles:

Pre-Existing Telecom Rates (per pole)								
Rental Year	2011	2012	2013	2014	2015	2016	2017	2018
Data from	2010	2011	2012	2013	2014	2015	2016	2017
Met-Ed	\$12.57	\$14.96	\$15.26	\$7.61	\$14.16	\$13.32	\$14.47	\$18.49
Penelec	\$9.74	\$10.29	\$10.89	\$7.89	\$10.54	\$10.88	\$11.35	\$15.90
Penn Power	\$11.06	\$12.83	\$12.90	\$12.44	\$13.54	\$14.24	\$13.75	\$16.94

37. These pre-existing telecom rates, which average \$12.75 per pole and set the upper bound on a just and reasonable rate, are [REDACTED] average per-pole effective rate that FirstEnergy continues to demand from Verizon. Verizon has thus paid effective rates averaging [REDACTED] times the pre-existing telecom rates during the applicable statute of limitations, for an average annual per-pole overpayment above the “hard cap” set by the *Third Report and Order* of [REDACTED] per pole³⁸:

³⁷ *Third Report and Order*, 33 FCC Rcd at 7771 (¶ 129).

³⁸ [REDACTED] per pole - \$12.75 per pole = [REDACTED] per pole.

	Average Per-Pole Contract Rate (2011-2018)	Average Per-Pole Pre-Existing Telecom Rate (2011-2018)	Average Contract Rate Compared to Average Pre-Existing Telecom Rate
Met-Ed	██████	\$13.86	██████ times
Penelec	██████	\$10.94	██████ times
Penn Power	██████	\$13.46	██████ times
Average	██████	\$12.75	██████ times

38. I also calculated the net rental amount that FirstEnergy charged and collected from Verizon in excess of this “hard cap” on the rates that FirstEnergy may charge Verizon. My overpayment calculation is included in Exhibit C-6.

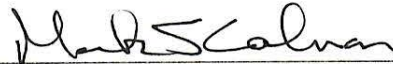
39. I completed this calculation in the same manner described above with respect to new telecom rates. As a result, I first calculated the net rental amounts that result from the application of proportional pre-existing telecom rates to both Verizon’s use of FirstEnergy’s poles and FirstEnergy’s use of Verizon’s poles. My calculations of the proportional pre-existing telecom rates that would apply to FirstEnergy’s use of Verizon’s poles if the pre-existing telecom rates from Exhibits C-1 through C-3 apply to Verizon’s use of FirstEnergy’s poles are included in Exhibit C-5.

40. I then compared the net rental amounts that Verizon paid FirstEnergy to the amounts that Verizon would have paid FirstEnergy if rent was set for Verizon and FirstEnergy at proportional pre-existing telecom rental rates. My calculation shows that, during the applicable statutes of limitations, FirstEnergy collected from Verizon over ██████████ to date above the “hard cap” set by the pre-existing telecom rate formula:

Refund Calculation: Pre-Existing Telecom Rates

Rental Year	Net Rent Verizon Paid FirstEnergy	Net Rent at Pre-Existing Telecom Rates	Verizon's Overpayment to FirstEnergy
2011 (172 days)		\$804,674	
2012		\$2,125,067	
2013		\$1,796,895	
2014		\$420,562	
2015		\$1,088,366	
2016		\$1,588,962	
2017		\$1,422,144	
2018		\$1,951,263	
2019 (to date)		\$252,243	
Total		\$11,450,175	

41. For the July 12, 2011 through 2018 rental period (7.47 years) paid in full to date, these overpayments produce an average annual overpayment above pre-existing telecom rates of over [REDACTED] per year.³⁹

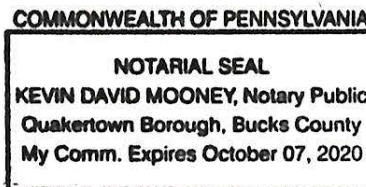


 Mark S. Calnon, Ph.D.

Sworn to before me on
 this 19th day of November, 2019

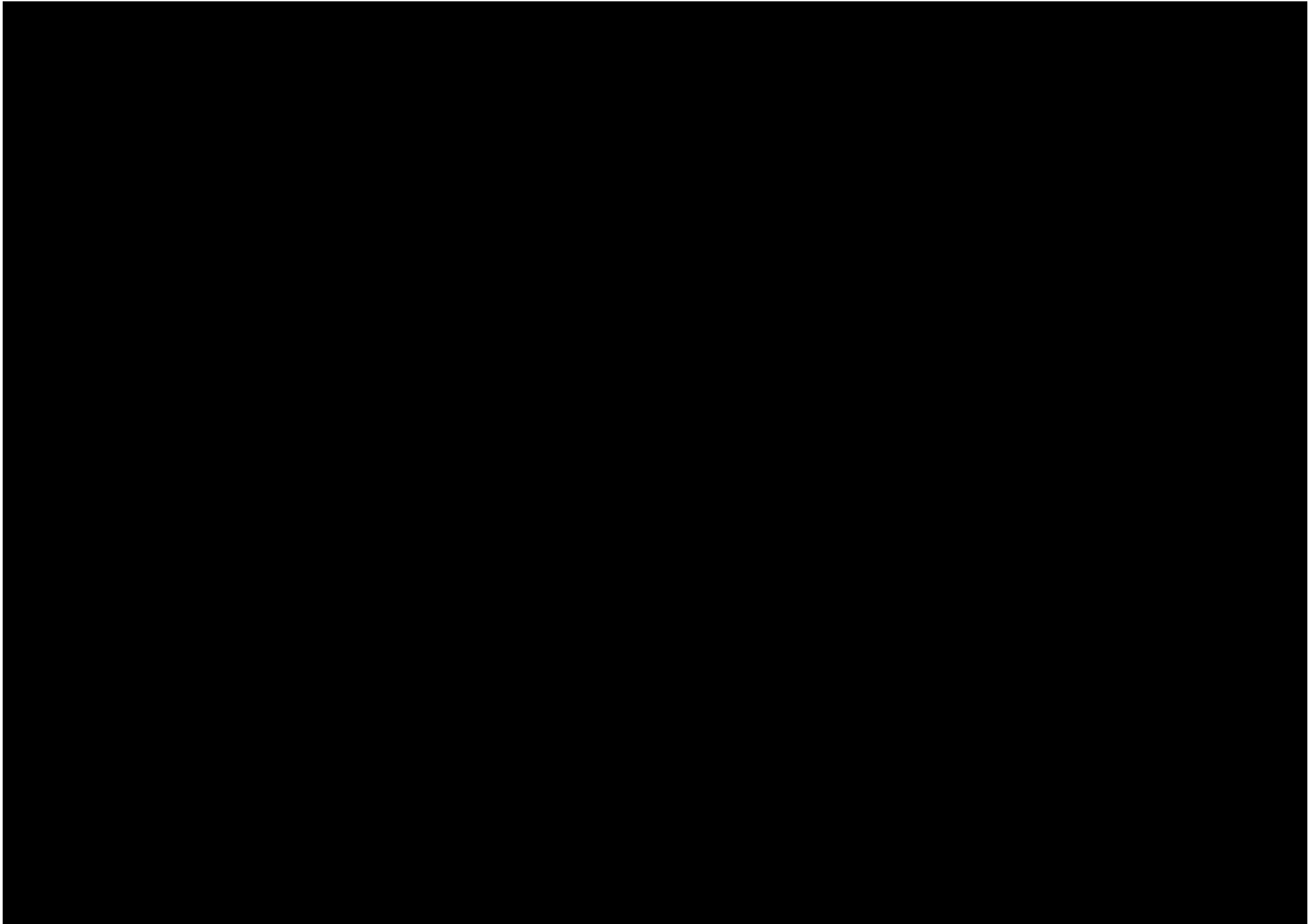


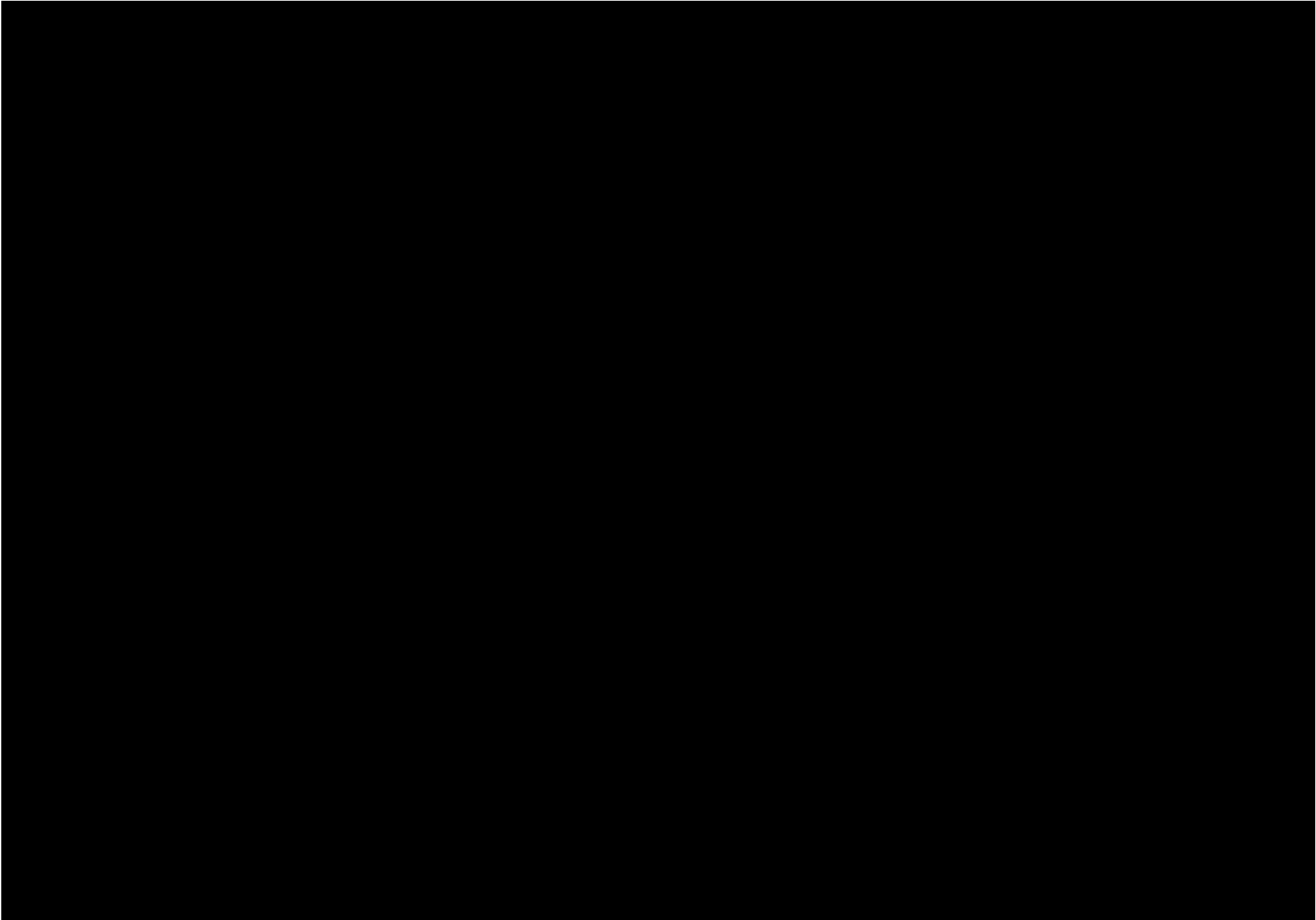
 Notary Public

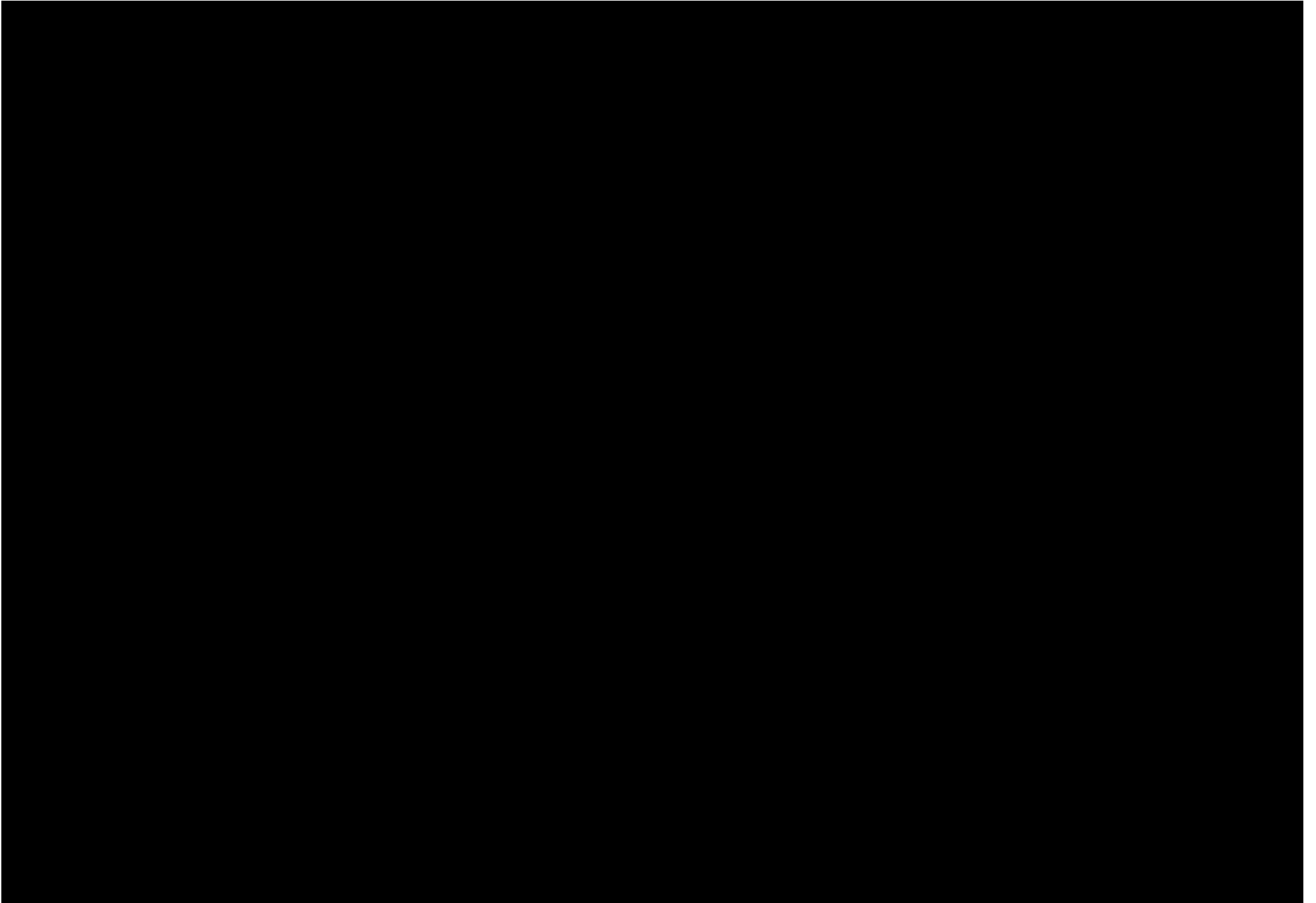


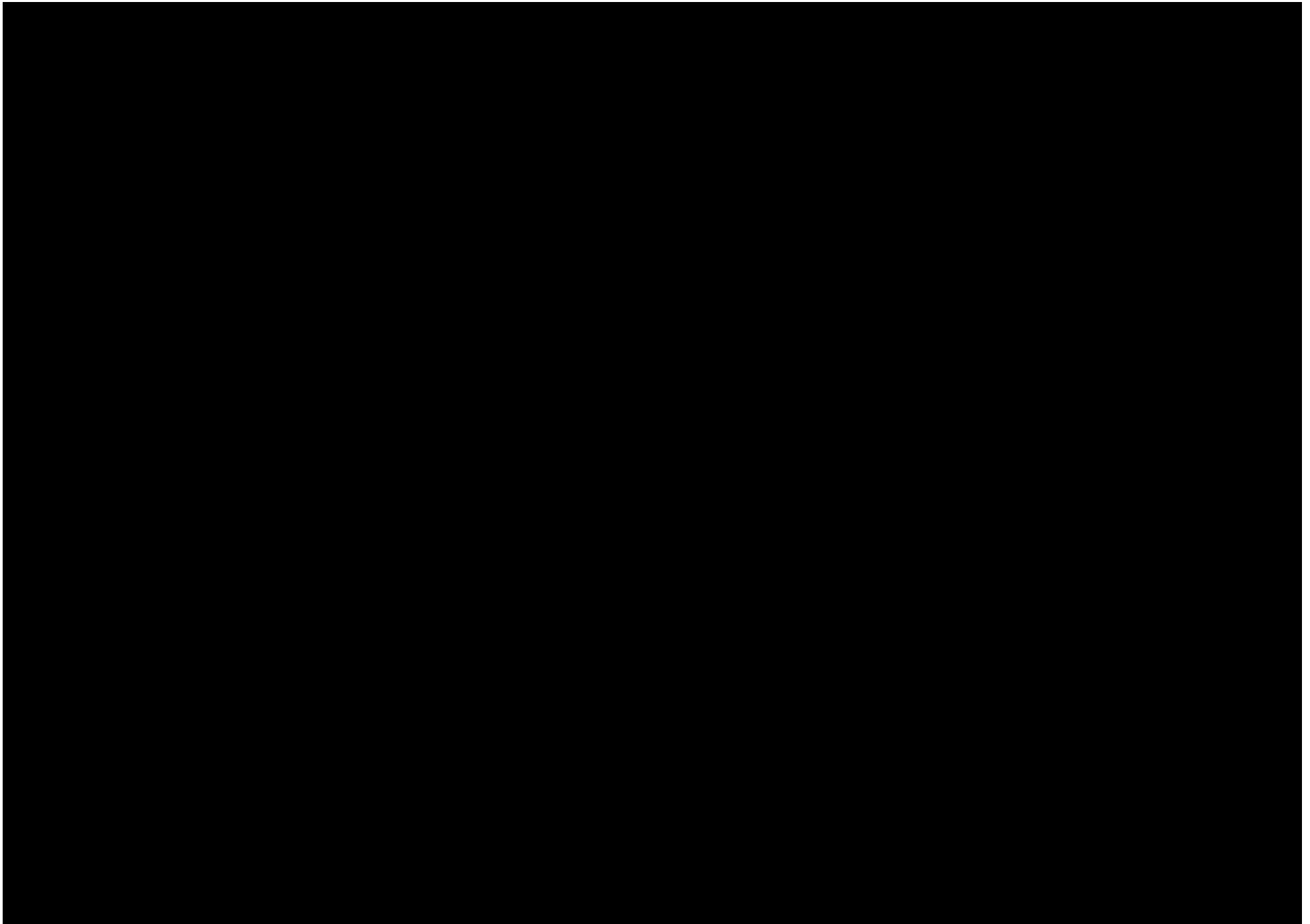
³⁹ [REDACTED] of the [REDACTED] overpayment is attributable to the 2011 to 2018 rental years. [REDACTED] / 7.47 years = [REDACTED] average annual overpayment.

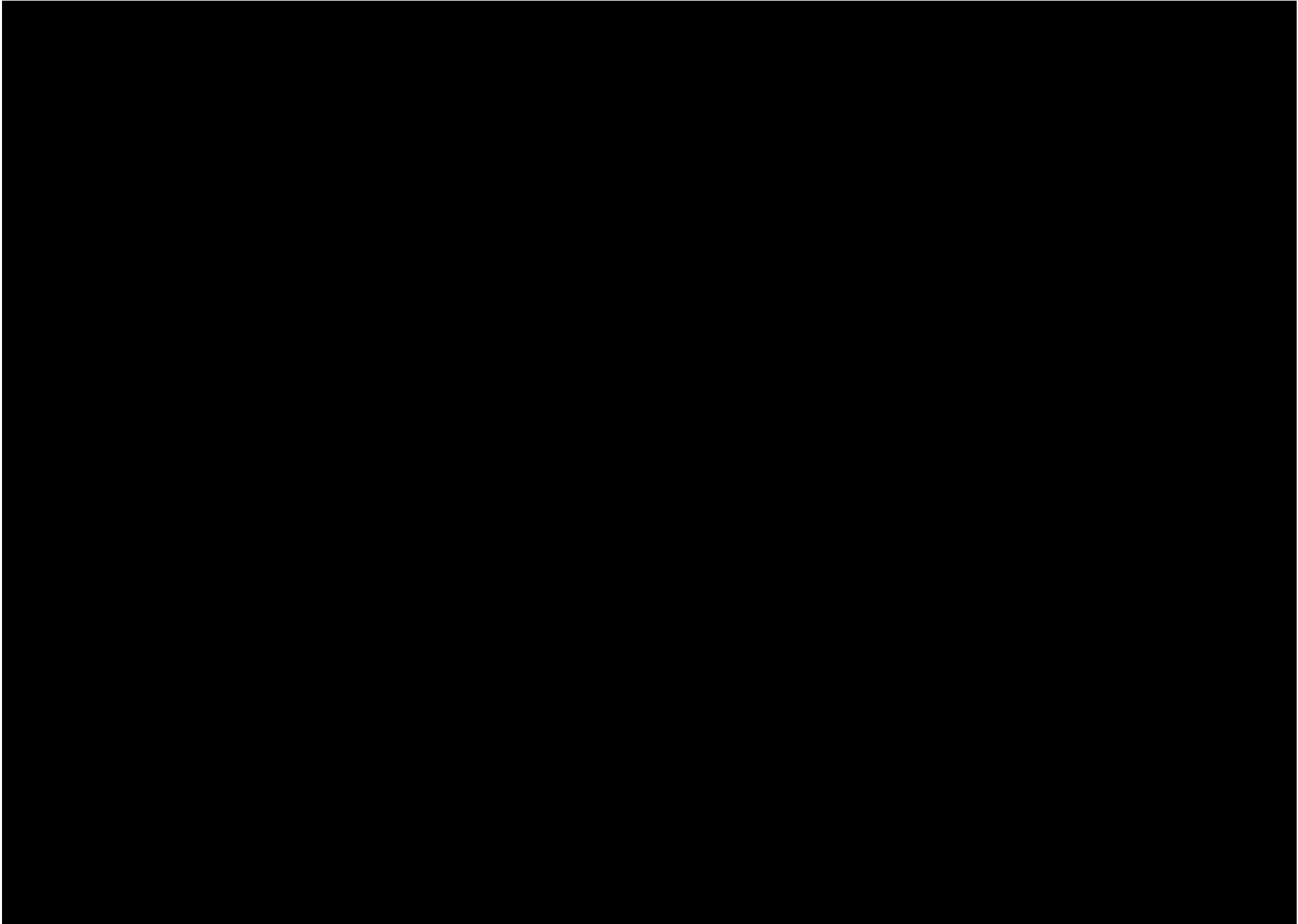
Exhibit C-1

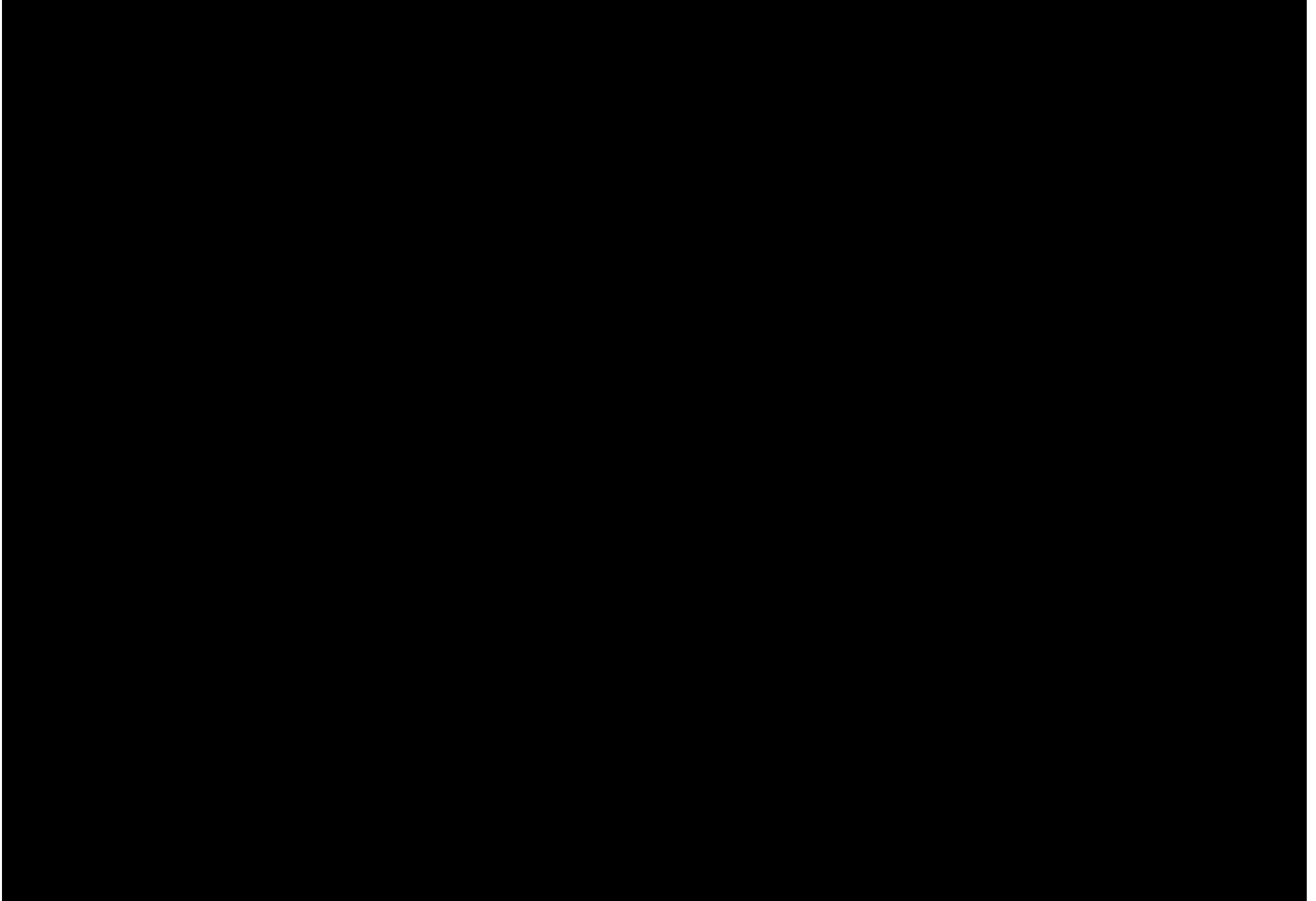


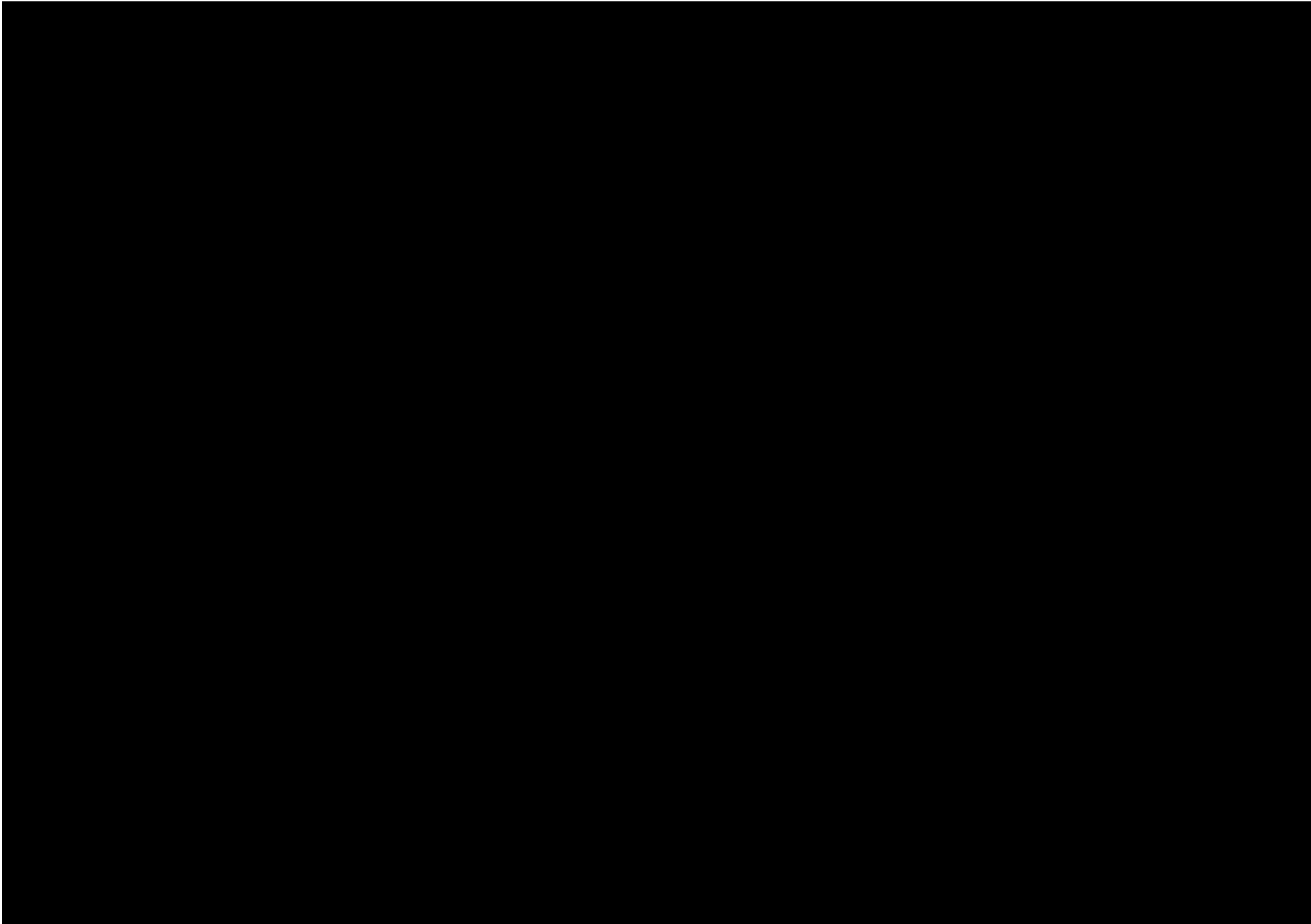


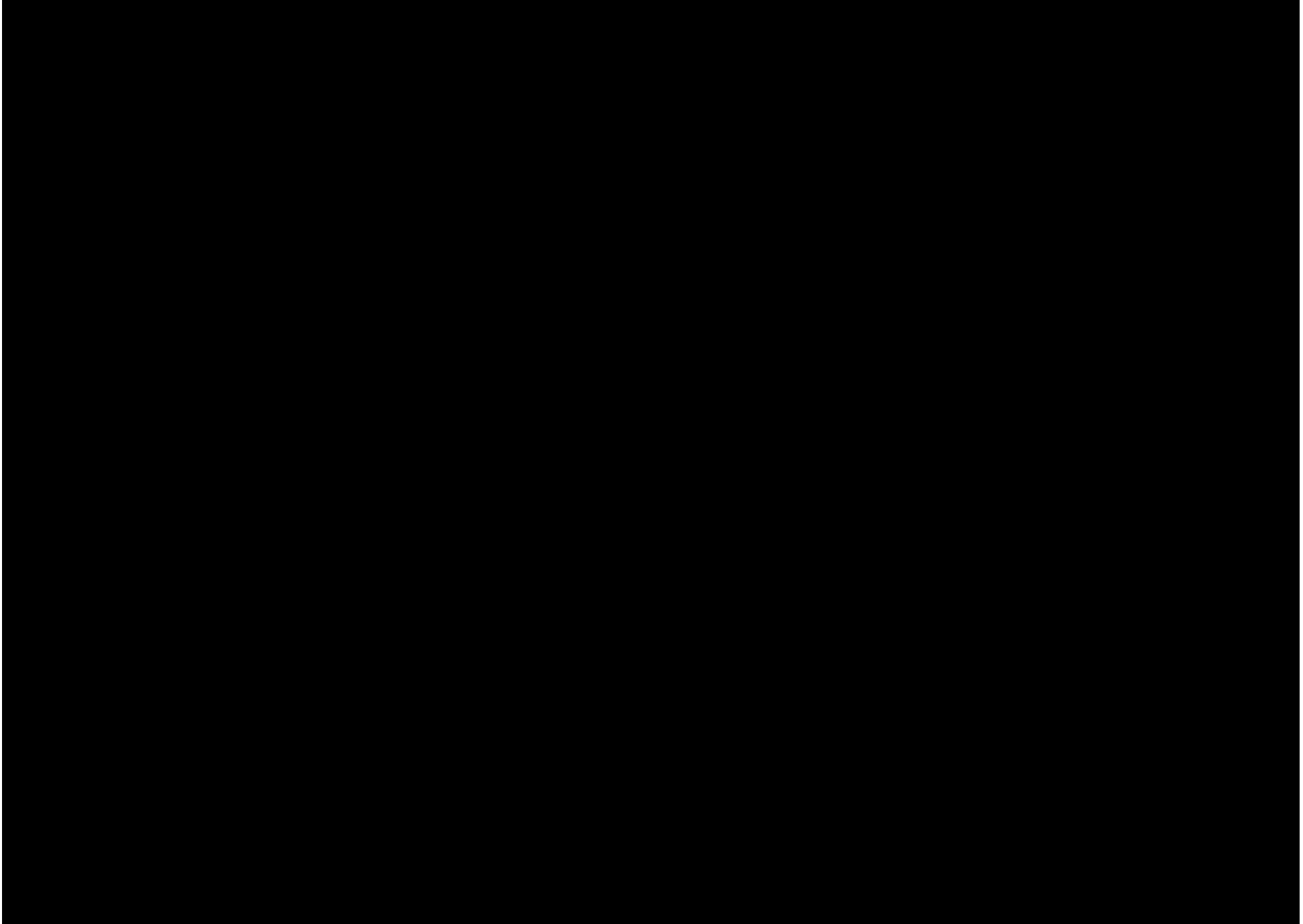












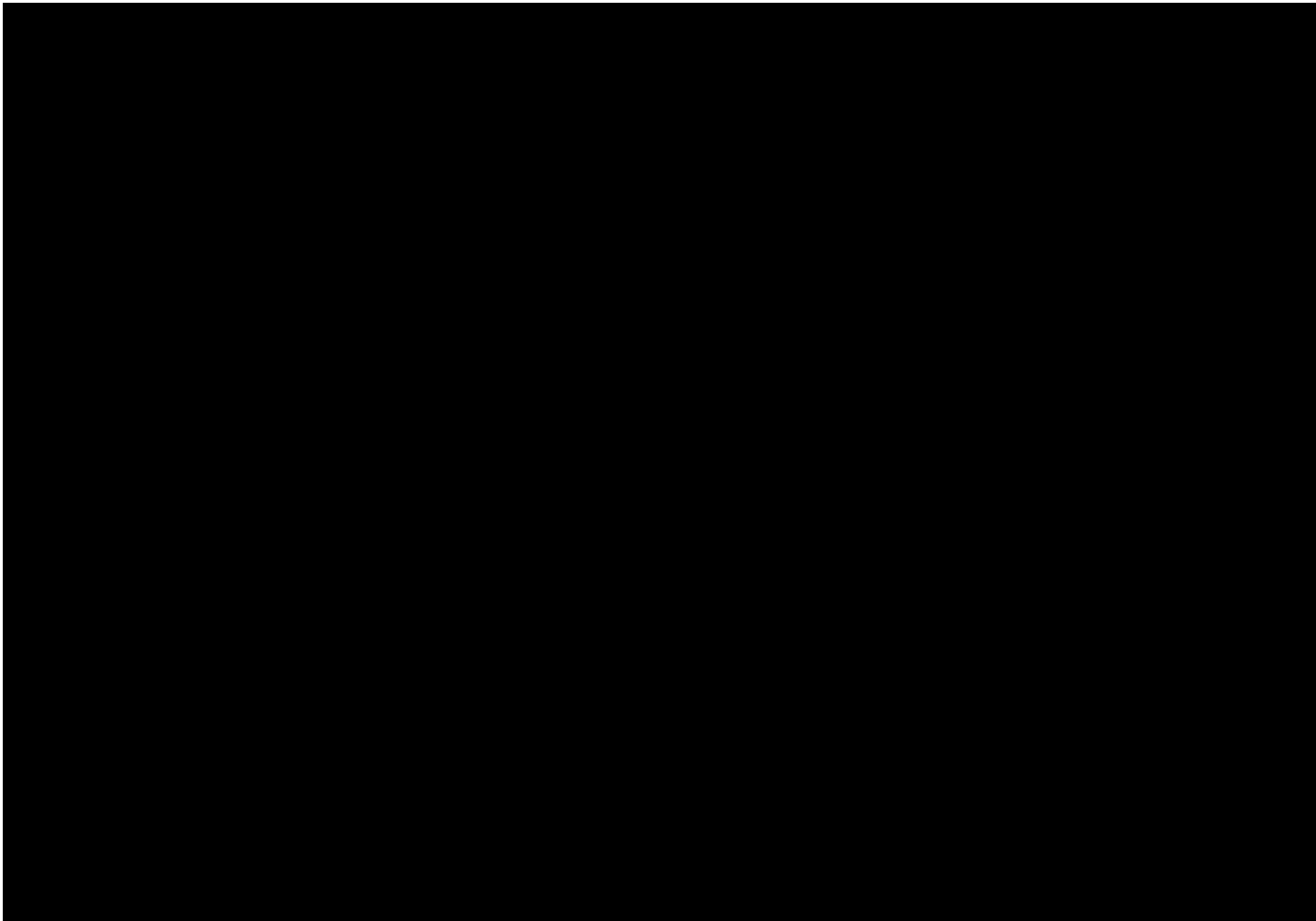
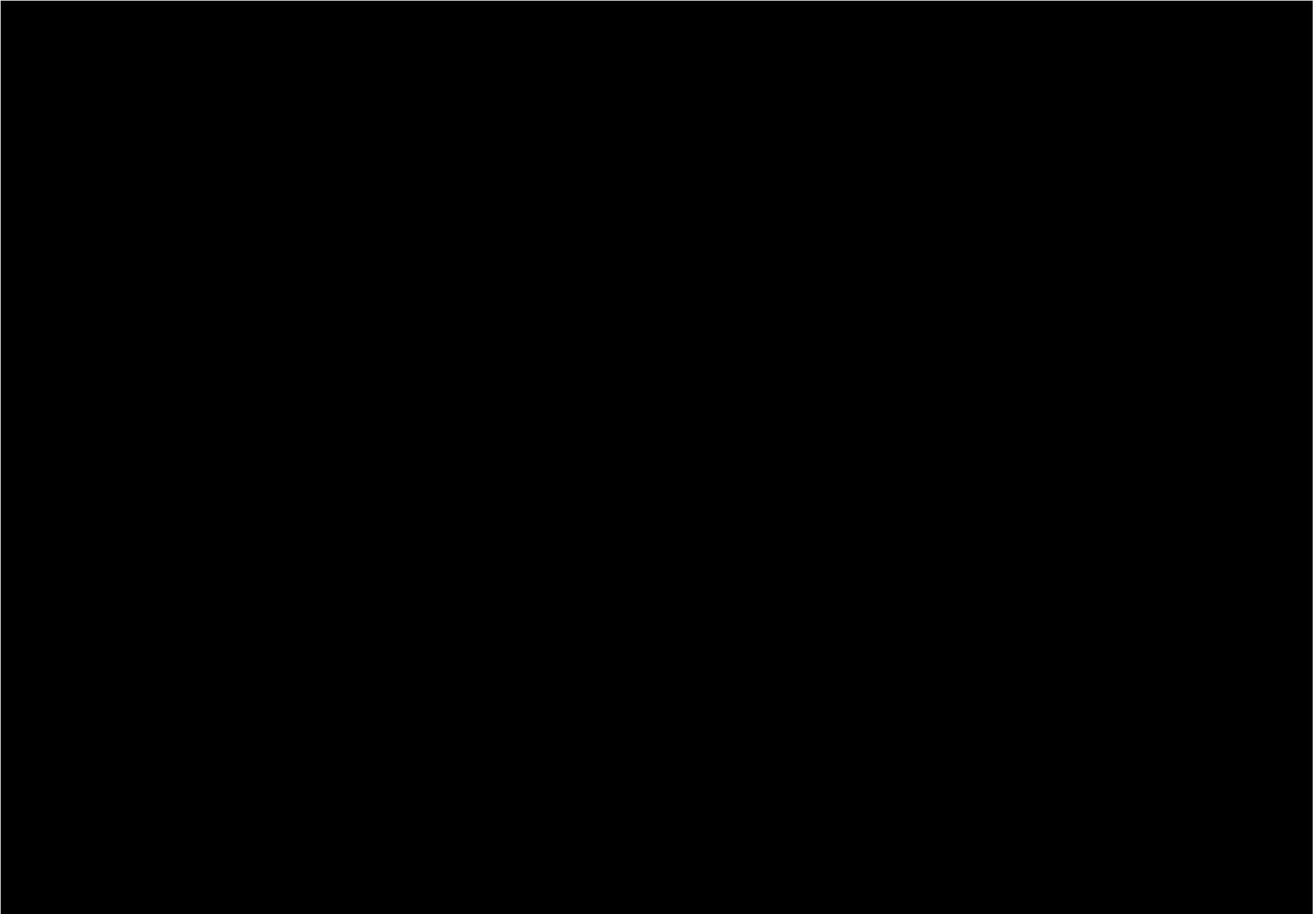
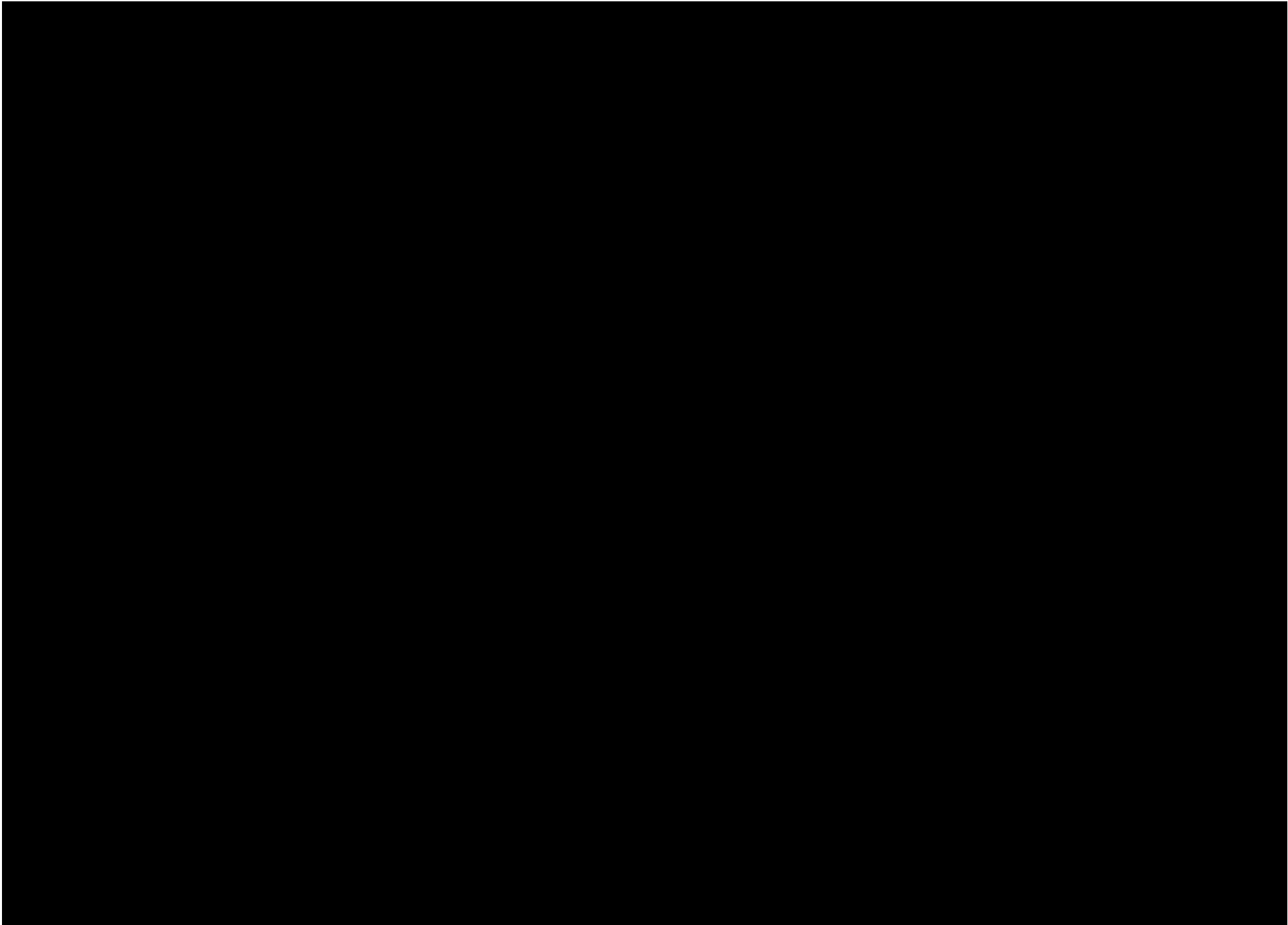
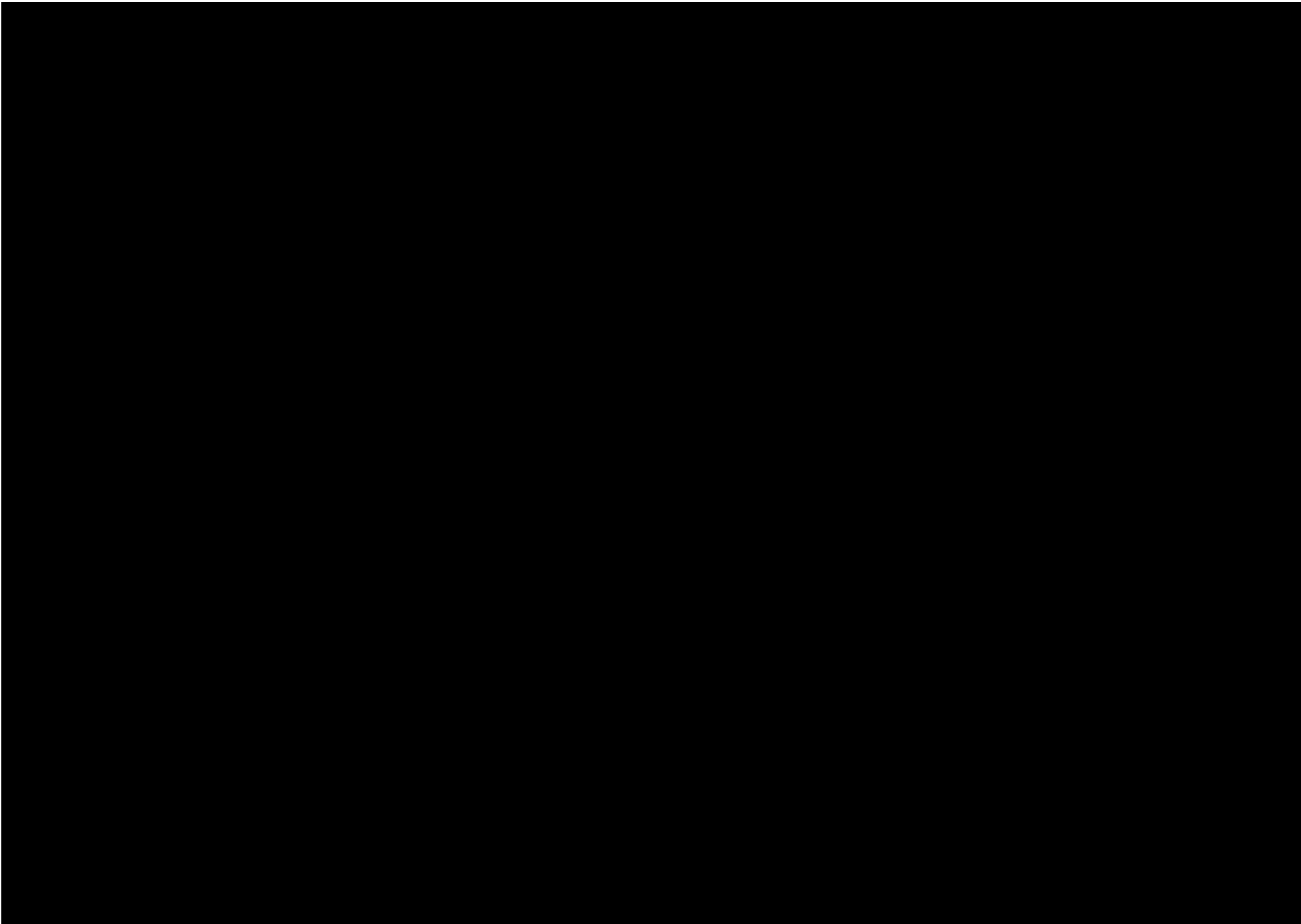
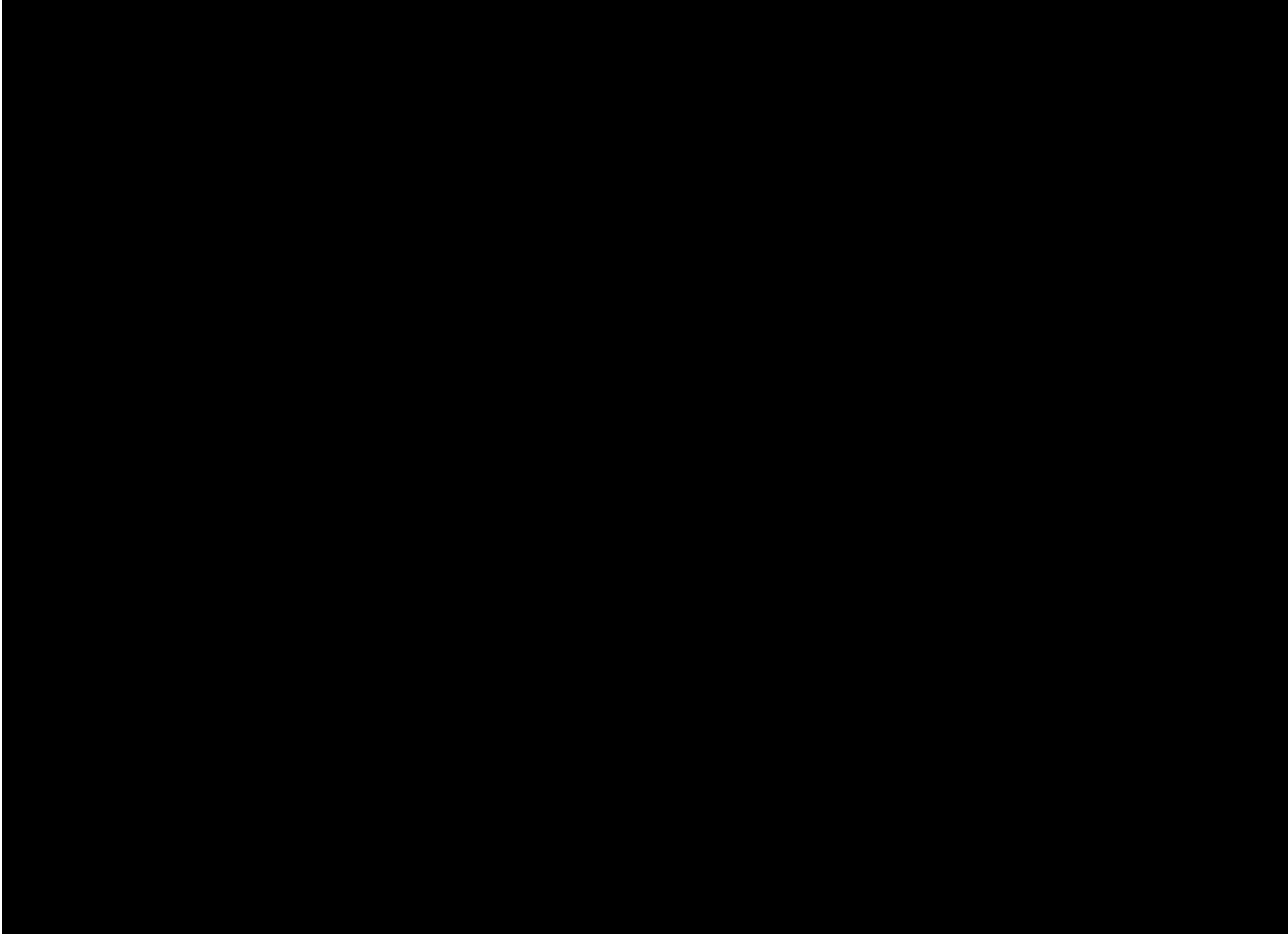


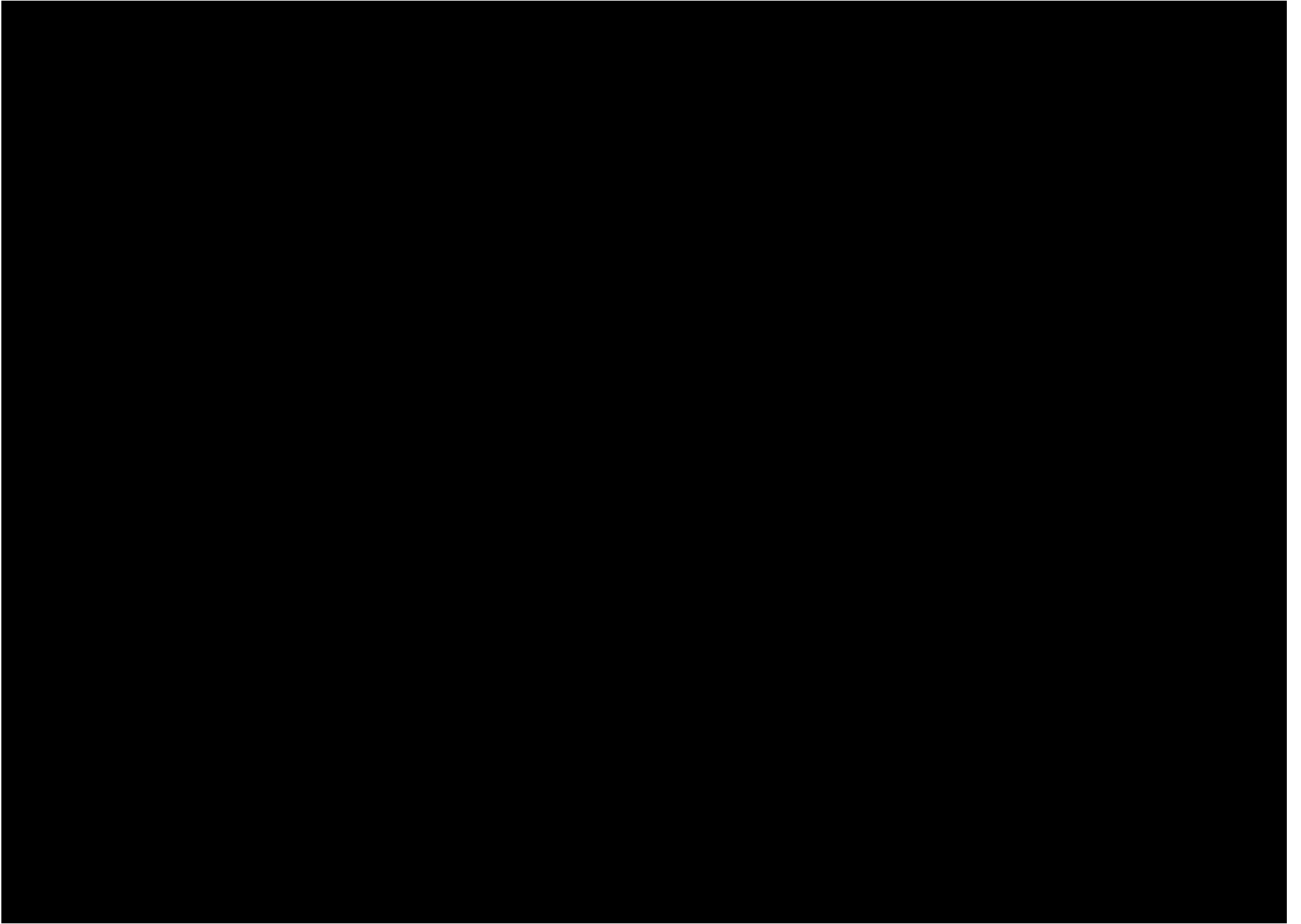
Exhibit C-2

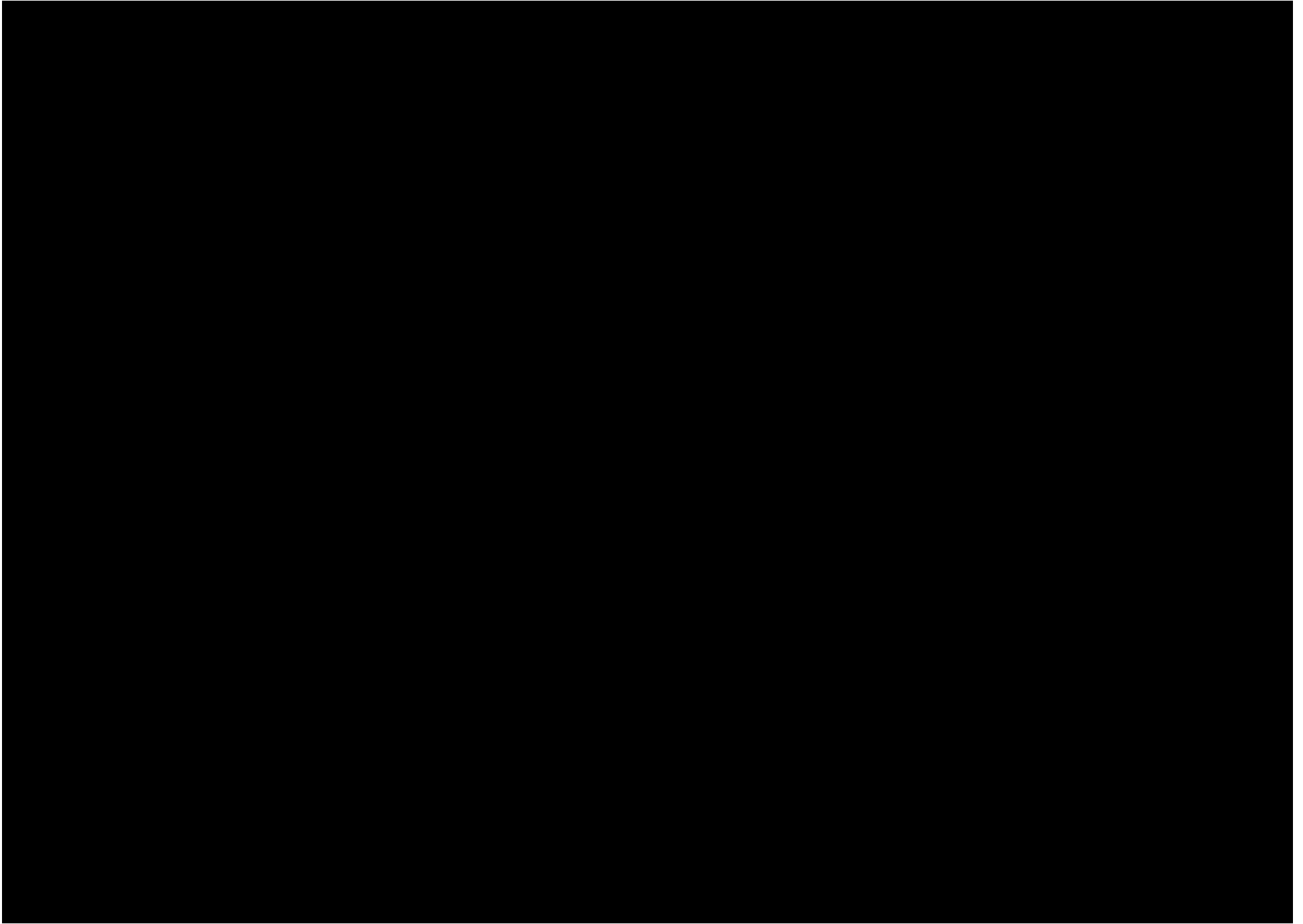


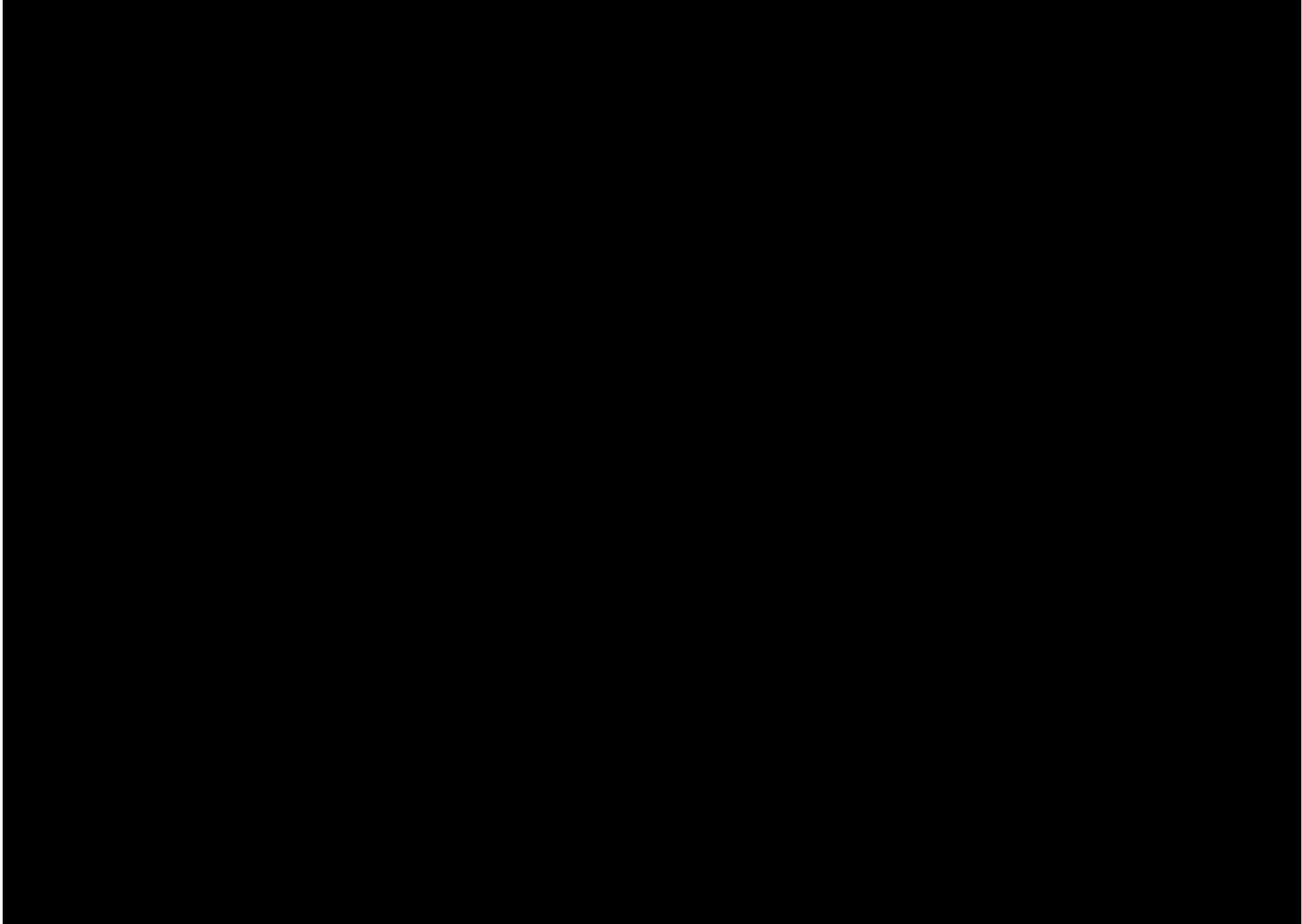


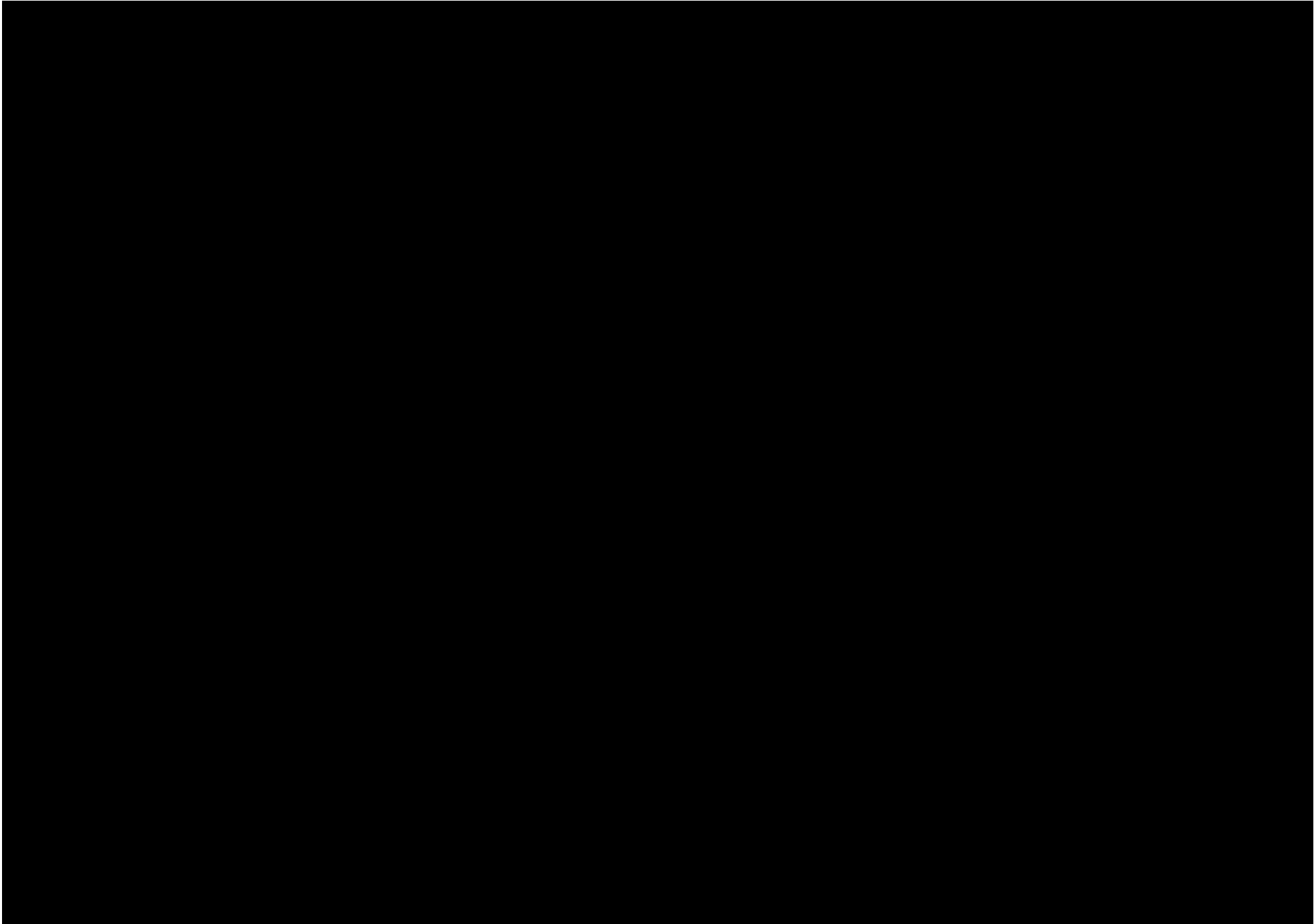












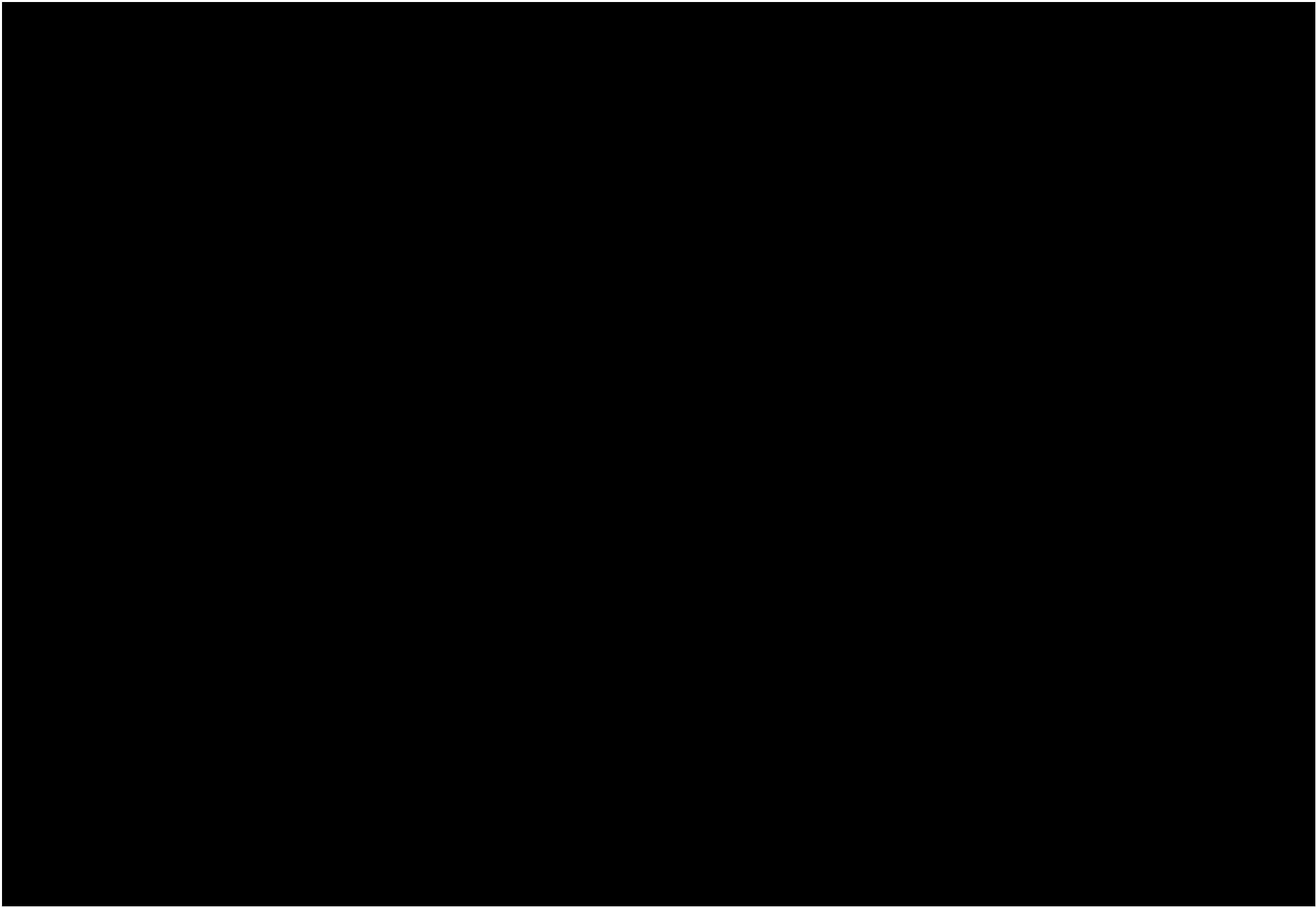
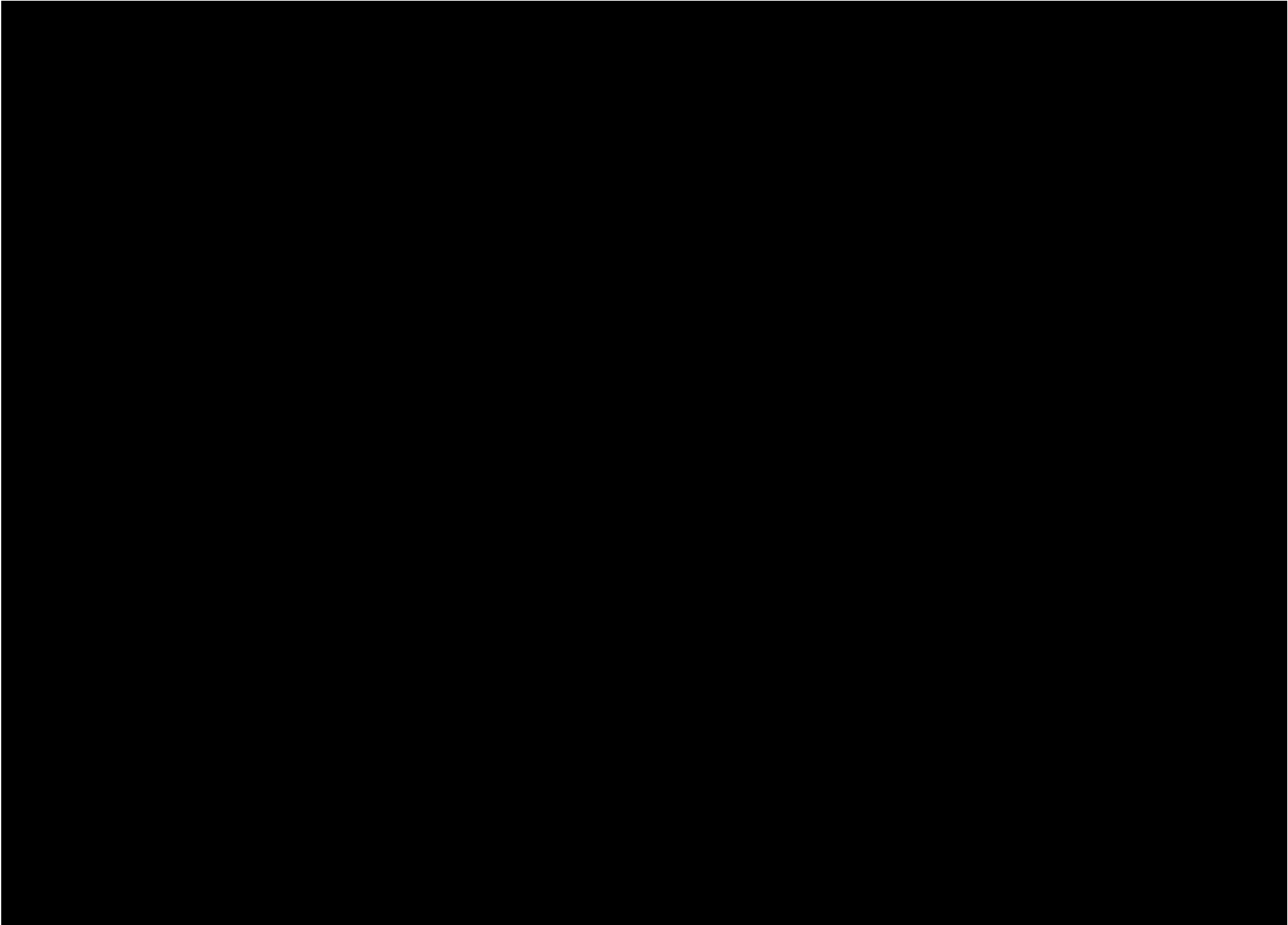
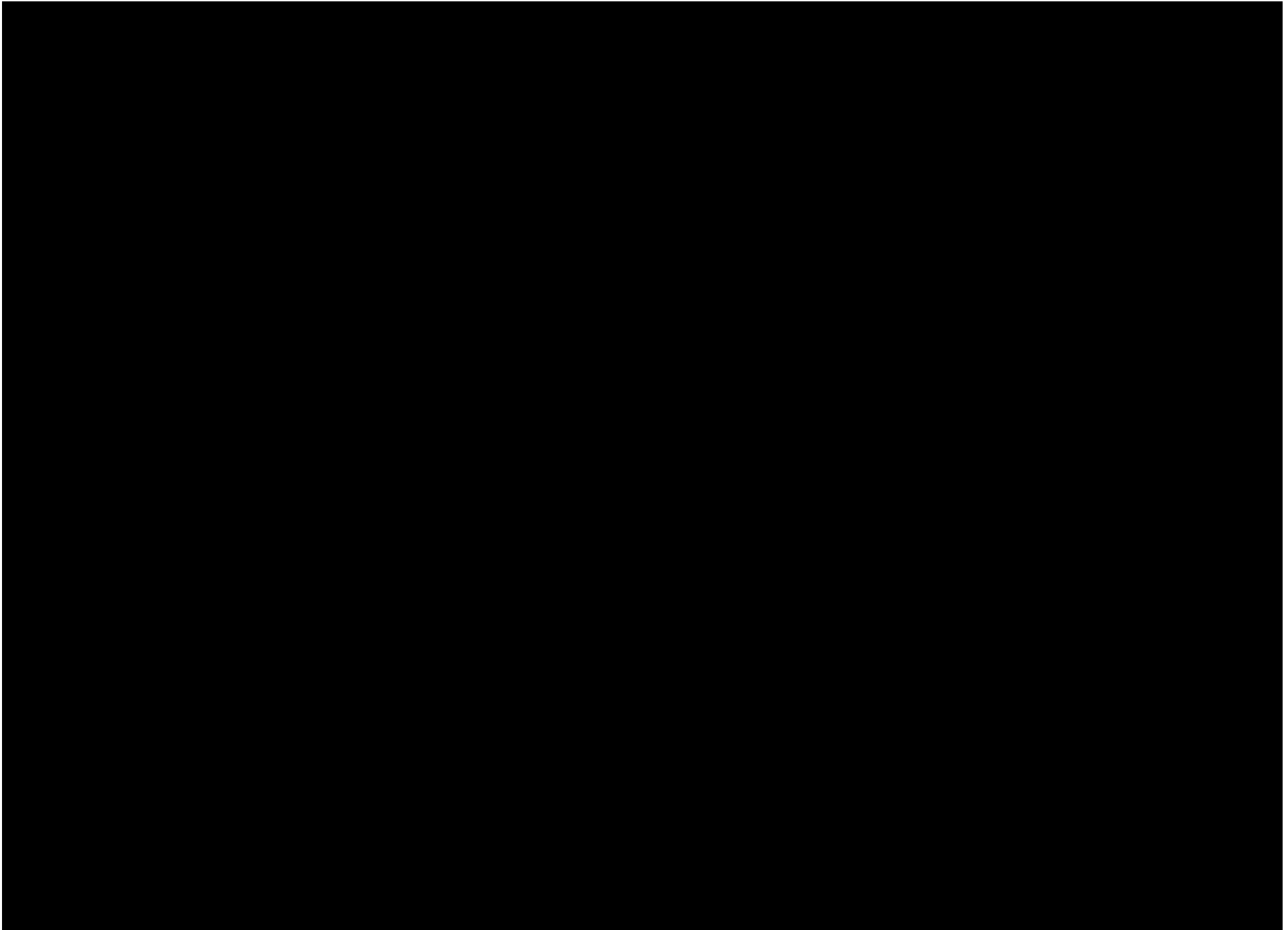
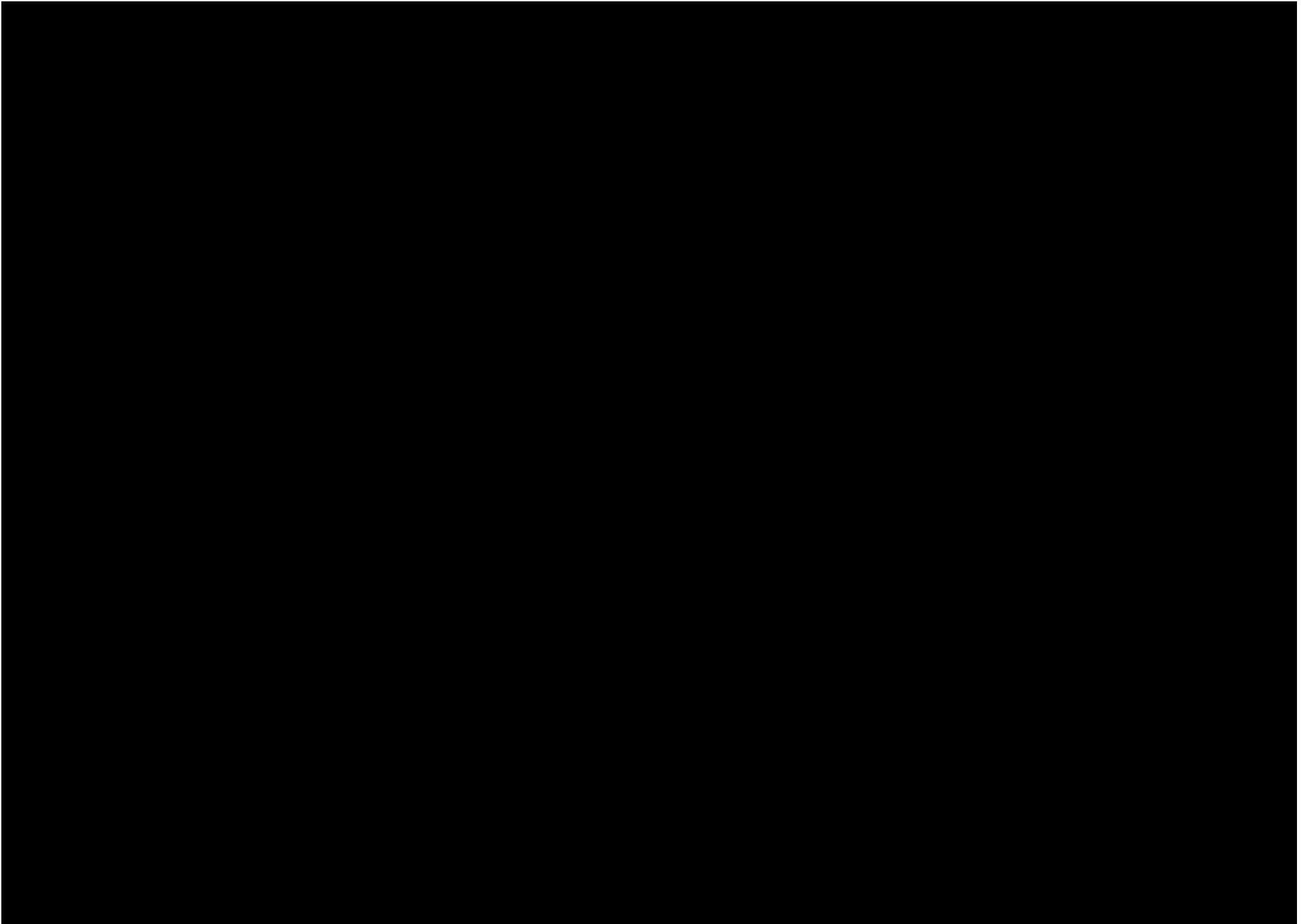
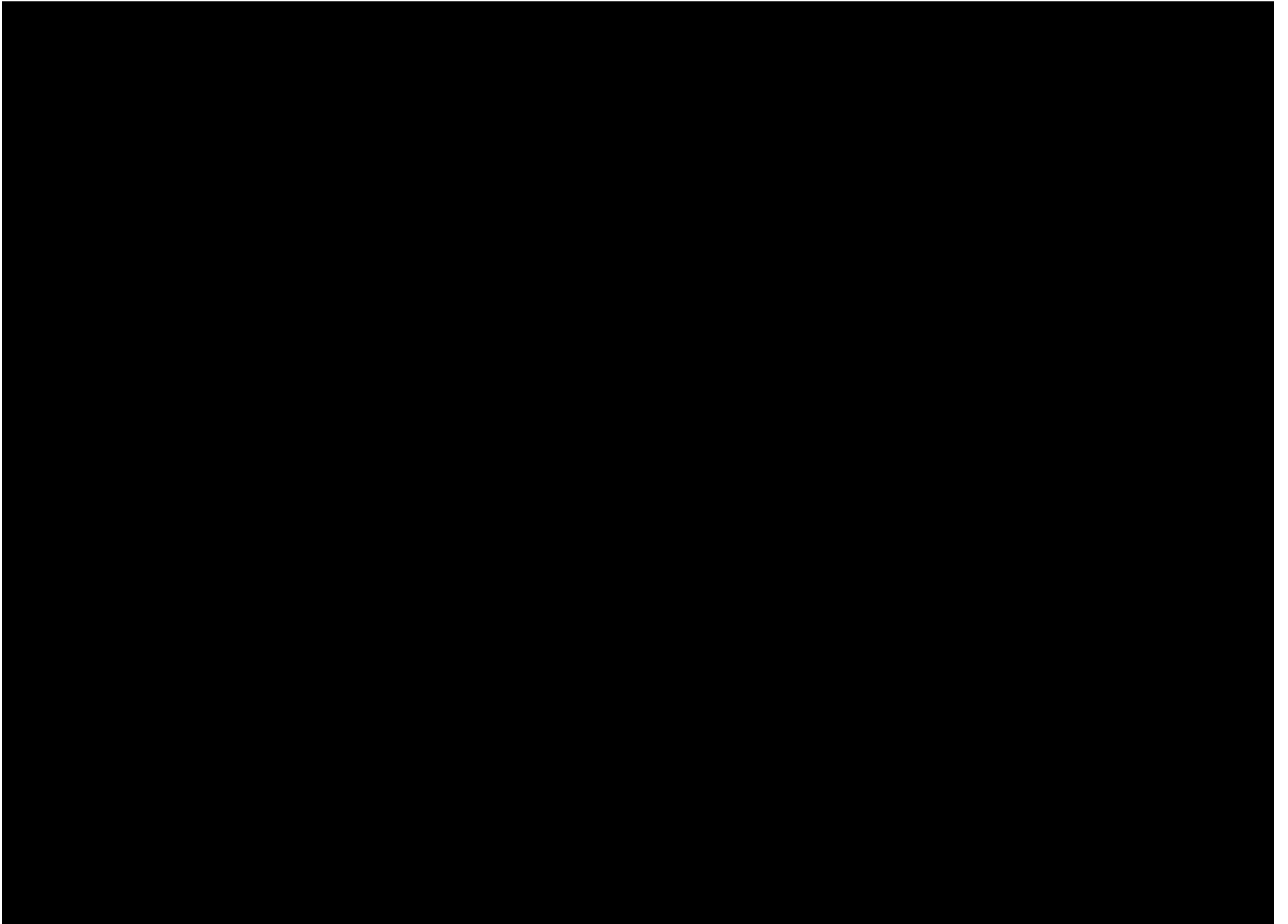


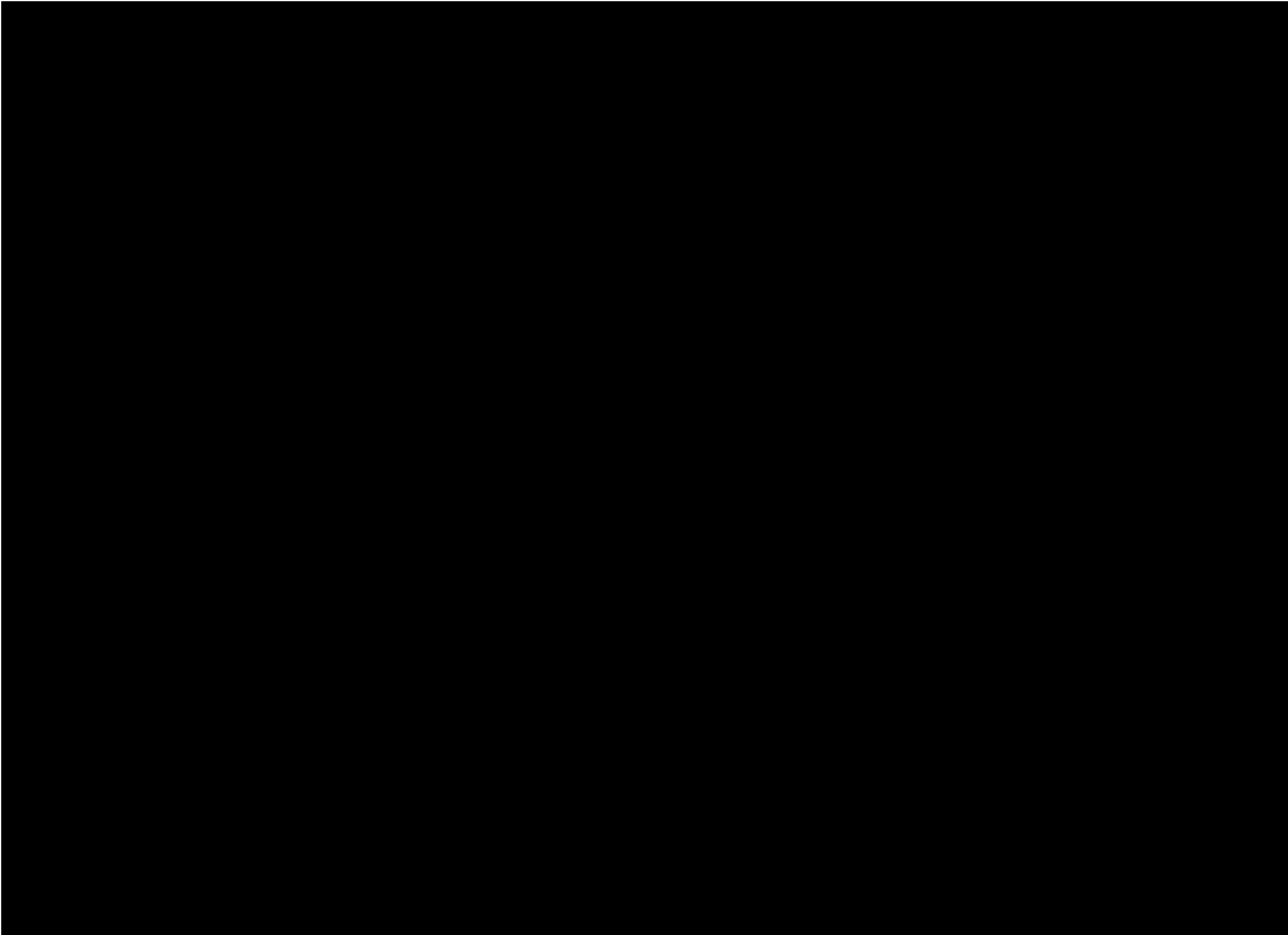
Exhibit C-3

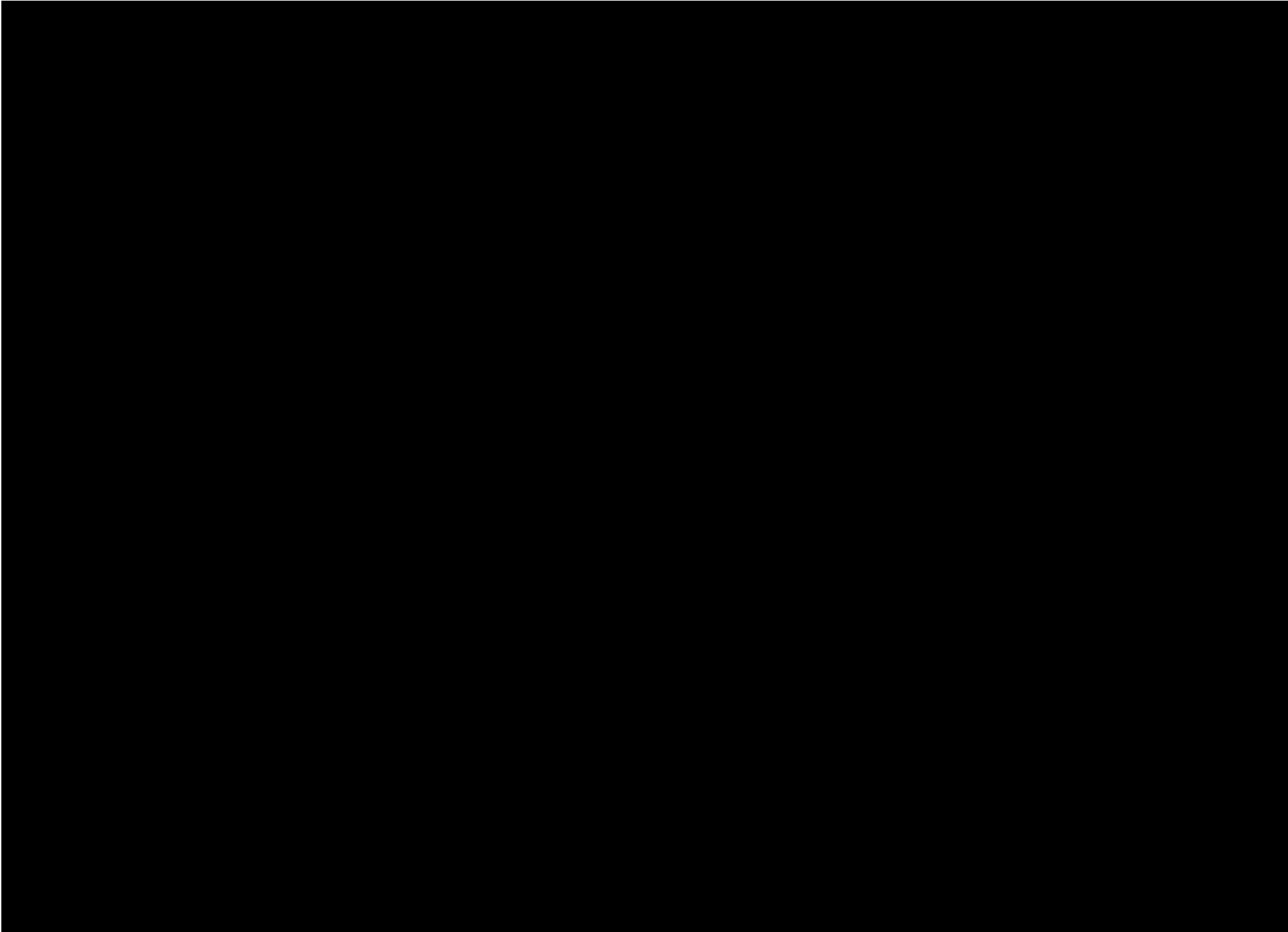


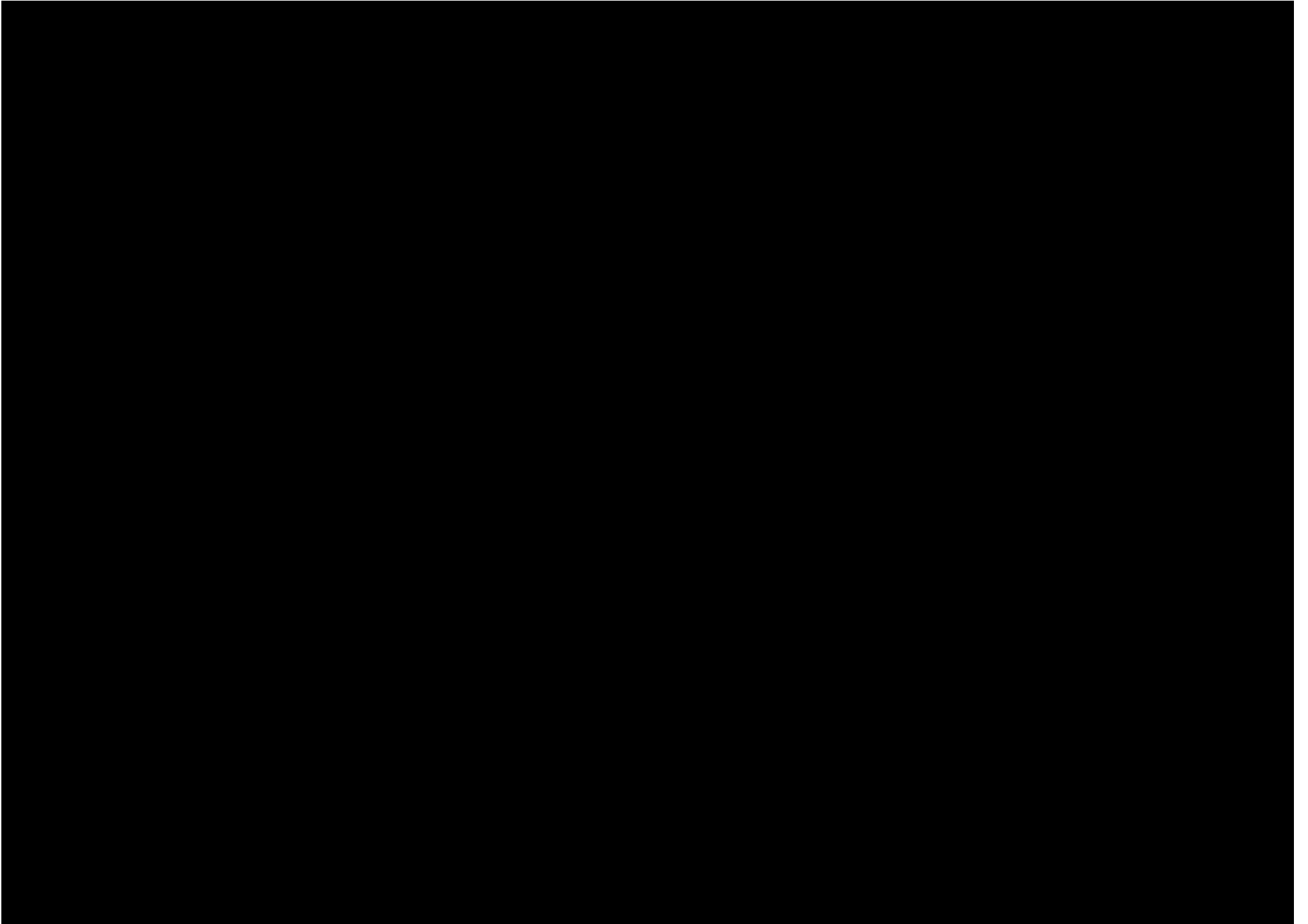


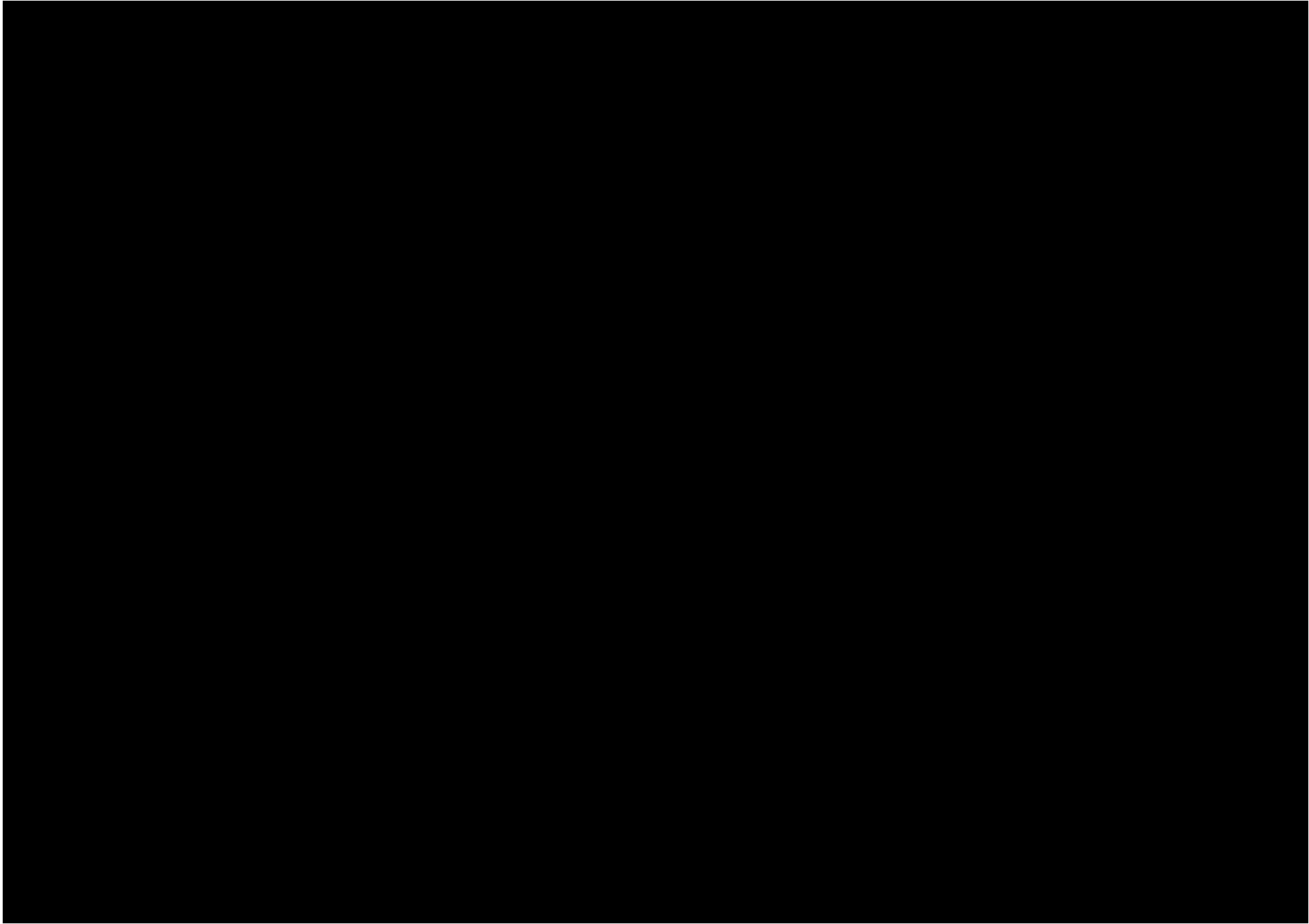












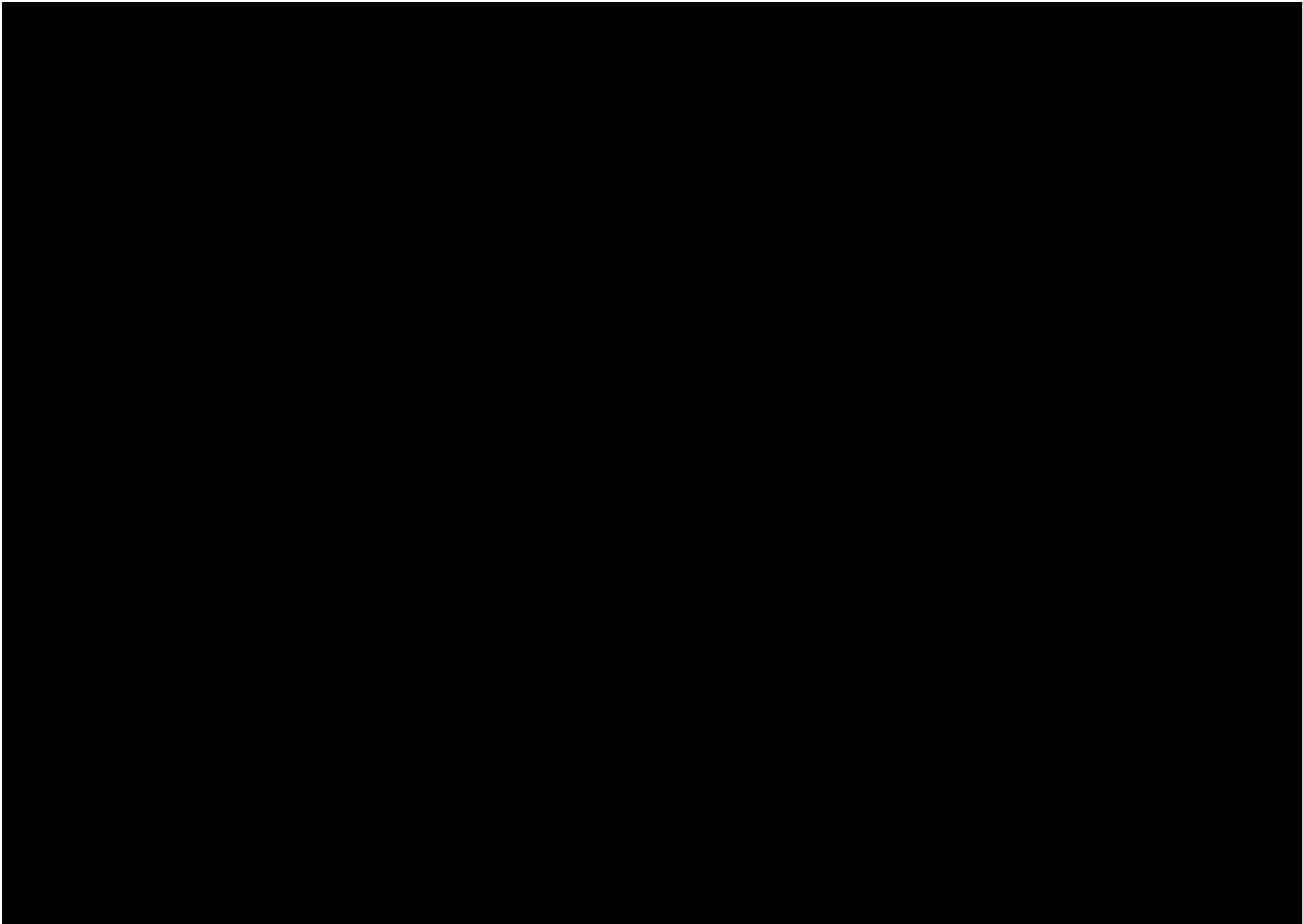


Exhibit C-4

PUBLIC VERSION

Rates of Return

Company and Rental Years	Value	Source
Met-Ed: 2011 - 2014 Rental Years		
Weighted Cost of Capital	7.53%	Opinion and Order, p. 137, Docket No. R-00061366 (Pa. PUC Jan. 11, 2007).
Met-Ed: 2015 - 2016 Rental Years		
Debt Share	48.80%	Direct Testimony of S. Staub, Ex. SRS-4, Attachment A, Docket No. R-2014-2428745 (Pa. PUC Aug. 4, 2014).
Cost of Debt	5.21%	<i>Id.</i> at p. 6.
Equity Share	51.20%	<i>Id.</i> at Ex. SRS-4, Attachment A.
Cost of Equity	9.90%	Attachment D, Report on Quarterly Earnings (Pa. PUC Bureau of Tech. Util. Servs. June 30, 2015).
Weighted Cost of Capital	7.61%	(Debt Share * Cost of Debt) + (Equity Share * Cost of Equity)
Met-Ed: 2017 -2019 Rental Years		
Debt Share	48.80%	Direct Testimony of J. Dipre, p. 4, Docket No. R-2016-2537349 (Pa. PUC Apr. 28, 2016).
Cost of Debt	5.25%	<i>Id.</i> at p. 5.
Equity Share	51.20%	<i>Id.</i> at p. 4.
Cost of Equity	9.55%	Attachment F, Report on Quarterly Earnings (Pa. PUC Bureau of Tech. Util. Servs. June 30, 2017).
Weighted Cost of Capital	7.45%	(Debt Share * Cost of Debt) + (Equity Share * Cost of Equity)
Penelec: 2011 - 2014 Rental Years		
Weighted Cost of Capital	7.92%	Opinion and Order, p. 137, Docket No. R-00061367 (Pa. PUC Jan. 11, 2007).
Penelec: 2015 - 2016 Rental Years		
Debt Share	49.90%	Direct Testimony of S. Staub, Ex. SRS-4, Attachment A, Docket No. R-2014-2428743 (Pa. PUC Aug. 4, 2014).
Cost of Debt	5.72%	<i>Id.</i> at p. 6.
Equity Share	50.10%	<i>Id.</i> at p. 4.
Cost of Equity	9.90%	Attachment D, Report on Quarterly Earnings (Pa. PUC Bureau of Tech. Util. Servs. June 30, 2015).
Weighted Cost of Capital	7.81%	(Debt Share * Cost of Debt) + (Equity Share * Cost of Equity)
Penelec: 2017 - 2019 Rental Years		
Debt Share	47.40%	Direct Testimony of J. Dipre, p. 4, Docket No. R-2016-2537352 (Pa. PUC Apr. 28, 2016).
Cost of Debt	5.56%	<i>Id.</i> at p. 5.
Equity Share	52.60%	<i>Id.</i> at p. 4.
Cost of Equity	9.55%	Attachment F, Report on Quarterly Earnings (Pa. PUC Bureau of Tech. Util. Servs. June 30, 2017).
Weighted Cost of Capital	7.66%	(Debt Share * Cost of Debt) + (Equity Share * Cost of Equity)

PUBLIC VERSION

Rates of Return

Company and Rental Years	Value	Source
Penn Power: 2011 - 2014 Rental Years		
Weighted Cost of Capital	11.14%	Opinion and Order, p. 216, Docket No. R-870732, 1998 Pa. PUC LEXIS 407 (Pa. PUC May 3, 1988).
Penn Power: 2015 - 2016 Rental Years		
Debt Share	49.90%	Direct Testimony of Steven R. Staub, p. 4, Docket No. R-2014-2428744 (Pa. PUC Aug. 4, 2014).
Cost of Debt	6.12%	<i>Id.</i> at p. 6.
Equity Share	50.10%	<i>Id.</i> at p. 4.
Cost of Equity	9.90%	Attachment D, Report on Quarterly Earnings (Pa. PUC Bureau of Tech. Util. Servs. June 30, 2015).
Weighted Cost of Capital	8.01%	(Debt Share * Cost of Debt) + (Equity Share * Cost of Equity)
Penn Power: 2017 - 2019 Rental Years		
Debt Share	49.90%	Direct Testimony of J. Dipre, p. 4, Docket No. R-2016-2537355 (Pa. PUC Apr. 28, 2016).
Cost of Debt	5.88%	<i>Id.</i> at p. 5.
Equity Share	50.10%	<i>Id.</i> at p. 4.
Cost of Equity	9.55%	Attachment F, Report on Quarterly Earnings (Pa. PUC Bureau of Tech. Util. Servs. June 30, 2017).
Weighted Cost of Capital	7.72%	(Debt Share * Cost of Debt) + (Equity Share * Cost of Equity)

Exhibit C-5

PUBLIC VERSION

2011 Per-Pole Rate for Met-Ed's, Penelec's, and Penn Power's Use of Verizon's Poles

Sources: ARMIS Report 43-01 (USOA Accounting), FCC Defaults

I. Net Investment per Distribution Pole				
Line #	Description	2010 Data		Source
		Gross	Method	
1	Total Distribution Plant	\$	15,411,857,000	ARMIS Report 43-01 Table III, Row 100, Col. (b)
2	Accumulated Depreciation - Distribution	\$	12,745,510,000	ARMIS Report 43-01 Table III, Row 200, Col. (b)
3	Gross Pole Investment	\$	454,493,000	ARMIS Report 43-01 Table III, Row 101, Col. (b)
4	Depreciation Reserve (Poles)	\$	464,850,000	ARMIS Report 43-01 Table III, Row 201, Col. (b)
5	Net Pole Plant	\$	(10,357,000)	[3] - [4]
6	Net Deferred Taxes Allocated to Distribution	\$	(3,910,000)	ARMIS Report 43-01 Table III, Row 401, Col. (b) + 404, Col. (b)
7	Net Plant less Deferred Taxes	\$	(6,447,000)	[5] - [6]
8	Gross Pole Investment	\$	403.06	[3] / [11]
9	Crossarm Allowance		5%	FCC default
10	Gross Pole Cost less Crossarm Allowance	\$	382.91	[8] * (1 - [9])
11	Number of Distribution Poles		1,127,610	ARMIS Report 43-01 Table III, Row 601, Col. (b)
II. Carrying Charge Rate				
Line #	Description			Source
12	Depreciation Rate for Poles		6.70%	ARMIS Report 43-01 Table III, Row 301, Col. (b)
13	Total General and Administrative	\$	383,162,000	ARMIS Report 43-01 Table III, Row 503, Col. (b)
14	Administrative and General Rate		2.49%	[13] / [1]
15	Maintenance of Overhead Lines	\$	37,528,000	ARMIS Report 43-01 Table III, Row 501, Col. (b)
16	Pole Rental Expense	\$	32,625,000	ARMIS Report 43-01 Table III, Row 501.2, Col. (b)
17	Operation and Maintenance Rate		1.08%	[(15) - (16)] / [3]
18	Operating Taxes	\$	50,221,000	ARMIS Report 43-01 Table III, Row 504, Col. (b)
19	Tax Rate		0.33%	[18] / [1]
20	Authorized Rate of Return		11.25%	FCC default
21	Adjusted Rate of Return (Gross Method)		-0.16%	[20] * [7] / [1]
22	Total Carrying Charge Rate		10.43%	[12] + [14] + [17] + [19] + [21]
III. Net Cost of a Bare Pole, Space Factor, and Rate Calculation				
Line #	Description			Source
23	Annual Pole Cost	\$	39.94	[10] * [22]
24	Urban Service Area Allocation		0.66	FCC default
25	Net Cost of Bare Pole - Urban	\$	26.36	[23] * [24]
26	Space Occupied by Attachment (ft.)		10.5	FCC default
27	Unusable Share Factor		0.667	FCC default
28	Total Unusable Space (ft.)		24	FCC default
29	Average Pole Height		37.5	FCC default
30	Total Usable Space		13.5	[29] - [28]
31	Number of Attaching Entities		5	FCC default (urban)
32	Space Factor		36.53%	{[26] + ([27] * [28])} / [31] / [29]
33	New Telecom Rate	\$	9.63	[25] * [32]
34	Pre-Existing Telecom Rate	\$	14.59	[23] * [32]

PUBLIC VERSION

2012 Per-Pole Rate for Met-Ed's, Penelec's, and Penn Power's Use of Verizon's Poles

Sources: ARMIS Report 43-01 (USOA Accounting), FCC Defaults

I. Net Investment per Distribution Pole				
Line #	Description	2011 Data		Source
		Gross	Method	
1	Total Distribution Plant	\$	15,174,385,000	ARMIS Report 43-01 Table III, Row 100, Col. (b)
2	Accumulated Depreciation - Distribution	\$	12,755,465,000	ARMIS Report 43-01 Table III, Row 200, Col. (b)
3	Gross Pole Investment	\$	462,879,000	ARMIS Report 43-01 Table III, Row 101, Col. (b)
4	Depreciation Reserve (Poles)	\$	488,424,000	ARMIS Report 43-01 Table III, Row 201, Col. (b)
5	Net Pole Plant	\$	(25,545,000)	[3] - [4]
6	Net Deferred Taxes Allocated to Distribution	\$	1,475,000	ARMIS Report 43-01 Table III, Row 401, Col. (b) + 404, Col. (b)
7	Net Plant less Deferred Taxes	\$	(27,020,000)	[5] - [6]
8	Gross Pole Investment	\$	410.50	[3] / [11]
9	Crossarm Allowance		5%	FCC default
10	Gross Pole Cost less Crossarm Allowance	\$	389.97	[8] * (1 - [9])
11	Number of Distribution Poles		1,127,610	ARMIS Report 43-01 Table III, Row 601, Col. (b)
II. Carrying Charge Rate				
Line #	Description			Source
12	Depreciation Rate for Poles		6.70%	ARMIS Report 43-01 Table III, Row 301, Col. (b)
13	Total General and Administrative	\$	800,956,000	ARMIS Report 43-01 Table III, Row 503, Col. (b)
14	Administrative and General Rate		5.28%	[13] / [1]
15	Maintenance of Overhead Lines	\$	34,056,000	ARMIS Report 43-01 Table III, Row 501, Col. (b)
16	Pole Rental Expense	\$	28,593,000	ARMIS Report 43-01 Table III, Row 501.2, Col. (b)
17	Operation and Maintenance Rate		1.18%	[(15) - (16)] / [3]
18	Operating Taxes	\$	(329,371,000)	ARMIS Report 43-01 Table III, Row 504, Col. (b)
19	Tax Rate		-2.17%	[18] / [1]
20	Authorized Rate of Return		11.25%	FCC default
21	Adjusted Rate of Return (Gross Method)		-0.66%	[20] * [7] / [1]
22	Total Carrying Charge Rate		10.33%	[12] + [14] + [17] + [19] + [21]
III. Net Cost of a Bare Pole, Space Factor, and Rate Calculation				
Line #	Description			Source
23	Annual Pole Cost	\$	40.29	[10] * [22]
24	Urban Service Area Allocation		0.66	FCC default
25	Net Cost of Bare Pole - Urban	\$	26.59	[23] * [24]
26	Space Occupied by Attachment (ft.)		10.5	FCC default
27	Unusable Share Factor		0.667	FCC default
28	Total Unusable Space (ft.)		24	FCC default
29	Average Pole Height		37.5	FCC default
30	Total Usable Space		13.5	[29] - [28]
31	Number of Attaching Entities		5	FCC default (urban)
32	Space Factor		36.53%	{[26] + ([27] * [28])} / [31] / [29]
33	New Telecom Rate	\$	9.71	[25] * [32]
34	Pre-Existing Telecom Rate	\$	14.72	[23] * [32]

PUBLIC VERSION

2013 Per-Pole Rate for Met-Ed's, Penelec's, and Penn Power's Use of Verizon's Poles

Sources: ARMIS Report 43-01 (USOA Accounting), FCC Defaults

I. Net Investment per Distribution Pole				
Line #	Description	2012 Data		Source
		Gross	Method	
1	Total Distribution Plant	\$ 15,490,162,000		ARMIS Report 43-01 Table III, Row 100, Col. (b)
2	Accumulated Depreciation - Distribution	\$ 13,241,777,000		ARMIS Report 43-01 Table III, Row 200, Col. (b)
3	Gross Pole Investment	\$ 475,032,000		ARMIS Report 43-01 Table III, Row 101, Col. (b)
4	Depreciation Reserve (Poles)	\$ 511,940,000		ARMIS Report 43-01 Table III, Row 201, Col. (b)
5	Net Pole Plant	\$ (36,908,000)		[3] - [4]
6	Net Deferred Taxes Allocated to Distribution	\$ 64,000		ARMIS Report 43-01 Table III, Row 401, Col. (b) + 404, Col. (b)
7	Net Plant less Deferred Taxes	\$ (36,972,000)		[5] - [6]
8	Gross Pole Investment	\$ 423.55		[3] / [11]
9	Crossarm Allowance	5%		FCC default
10	Gross Pole Cost less Crossarm Allowance	\$ 402.37		[8] * (1 - [9])
11	Number of Distribution Poles	1,121,555		ARMIS Report 43-01 Table III, Row 601, Col. (b)
II. Carrying Charge Rate				
Line #	Description			Source
12	Depreciation Rate for Poles	6.70%		ARMIS Report 43-01 Table III, Row 301, Col. (b)
13	Total General and Administrative	\$ 869,383,000		ARMIS Report 43-01 Table III, Row 503, Col. (b)
14	Administrative and General Rate	5.61%		[13] / [1]
15	Maintenance of Overhead Lines	\$ 30,985,000		ARMIS Report 43-01 Table III, Row 501, Col. (b)
16	Pole Rental Expense	\$ 26,374,000		ARMIS Report 43-01 Table III, Row 501.2, Col. (b)
17	Operation and Maintenance Rate	0.97%		[(15) - (16)] / [3]
18	Operating Taxes	\$ 63,496,000		ARMIS Report 43-01 Table III, Row 504, Col. (b)
19	Tax Rate	0.41%		[18] / [1]
20	Authorized Rate of Return	11.25%		FCC default
21	Adjusted Rate of Return (Gross Method)	-0.88%		[20] * [7] / [1]
22	Total Carrying Charge Rate	12.82%		[12] + [14] + [17] + [19] + [21]
III. Net Cost of a Bare Pole, Space Factor, and Rate Calculation				
Line #	Description			Source
23	Annual Pole Cost	\$ 51.57		[10] * [22]
24	Urban Service Area Allocation	0.66		FCC default
25	Net Cost of Bare Pole - Urban	\$ 34.04		[23] * [24]
26	Space Occupied by Attachment (ft.)	10.5		FCC default
27	Unusable Share Factor	0.667		FCC default
28	Total Unusable Space (ft.)	24		FCC default
29	Average Pole Height	37.5		FCC default
30	Total Usable Space	13.5		[29] - [28]
31	Number of Attaching Entities	5		FCC default (urban)
32	Space Factor	36.53%		{[26] + ([27] * [28])} / [31] / [29]
33	New Telecom Rate	\$ 12.44		[25] * [32]
34	Pre-Existing Telecom Rate	\$ 18.84		[23] * [32]

PUBLIC VERSION

2014 Per-Pole Rate for Met-Ed's, Penelec's, and Penn Power's Use of Verizon's Poles

Sources: ARMIS Report 43-01 (USOA Accounting), FCC Defaults

I. Net Investment per Distribution Pole				
Line #	Description	2013 Data		Source
		Gross	Method	
1	Total Distribution Plant	\$ 15,828,883,084		ARMIS Report 43-01 Table III, Row 100, Col. (b)
2	Accumulated Depreciation - Distribution	\$ 13,712,387,464		ARMIS Report 43-01 Table III, Row 200, Col. (b)
3	Gross Pole Investment	\$ 484,980,138		ARMIS Report 43-01 Table III, Row 101, Col. (b)
4	Depreciation Reserve (Poles)	\$ 537,784,282		ARMIS Report 43-01 Table III, Row 201, Col. (b)
5	Net Pole Plant	\$ (52,804,144)		[3] - [4]
6	Net Deferred Taxes Allocated to Distribution	\$ (19,382,919)		ARMIS Report 43-01 Table III, Row 401, Col. (b) + 404, Col. (b)
7	Net Plant less Deferred Taxes	\$ (33,421,225)		[5] - [6]
8	Gross Pole Investment	\$ 432.03		[3] / [11]
9	Crossarm Allowance	5%		FCC default
10	Gross Pole Cost less Crossarm Allowance	\$ 410.42		[8] * (1 - [9])
11	Number of Distribution Poles	1,122,573		ARMIS Report 43-01 Table III, Row 601, Col. (b)
II. Carrying Charge Rate				
Line #	Description			Source
12	Depreciation Rate for Poles	6.70%		ARMIS Report 43-01 Table III, Row 301, Col. (b)
13	Total General and Administrative	\$ (341,312,741)		ARMIS Report 43-01 Table III, Row 503, Col. (b)
14	Administrative and General Rate	-2.16%		[13] / [1]
15	Maintenance of Overhead Lines	\$ 45,985,557		ARMIS Report 43-01 Table III, Row 501, Col. (b)
16	Pole Rental Expense	\$ 25,005,000		ARMIS Report 43-01 Table III, Row 501.2, Col. (b)
17	Operation and Maintenance Rate	4.33%		[(15) - (16)] / [3]
18	Operating Taxes	\$ 662,186,266		ARMIS Report 43-01 Table III, Row 504, Col. (b)
19	Tax Rate	4.18%		[18] / [1]
20	Authorized Rate of Return	11.25%		FCC default
21	Adjusted Rate of Return (Gross Method)	-0.78%		[20] * [7] / [1]
22	Total Carrying Charge Rate	12.28%		[12] + [14] + [17] + [19] + [21]
III. Net Cost of a Bare Pole, Space Factor, and Rate Calculation				
Line #	Description			Source
23	Annual Pole Cost	\$ 50.39		[10] * [22]
24	Urban Service Area Allocation	0.66		FCC default
25	Net Cost of Bare Pole - Urban	\$ 33.26		[23] * [24]
26	Space Occupied by Attachment (ft.)	10.5		FCC default
27	Unusable Share Factor	0.667		FCC default
28	Total Unusable Space (ft.)	24		FCC default
29	Average Pole Height	37.5		FCC default
30	Total Usable Space	13.5		[29] - [28]
31	Number of Attaching Entities	5		FCC default (urban)
32	Space Factor	36.53%		{[26] + ([27] * [28])} / [31] / [29]
33	New Telecom Rate	\$ 12.15		[25] * [32]
34	Pre-Existing Telecom Rate	\$ 18.41		[23] * [32]

PUBLIC VERSION

2015 Per-Pole Rate for Met-Ed's, Penelec's, and Penn Power's Use of Verizon's Poles

Sources: ARMIS Report 43-01 (USOA Accounting), FCC Defaults

I. Net Investment per Distribution Pole				
Line #	Description	2014 Data		Source
		Gross	Method	
1	Total Distribution Plant	\$	16,037,399,084	ARMIS Report 43-01 Table III, Row 100, Col. (b)
2	Accumulated Depreciation - Distribution	\$	14,061,000,194	ARMIS Report 43-01 Table III, Row 200, Col. (b)
3	Gross Pole Investment	\$	490,407,976	ARMIS Report 43-01 Table III, Row 101, Col. (b)
4	Depreciation Reserve (Poles)	\$	566,610,748	ARMIS Report 43-01 Table III, Row 201, Col. (b)
5	Net Pole Plant	\$	(76,202,772)	[3] - [4]
6	Net Deferred Taxes Allocated to Distribution	\$	(26,030,825)	ARMIS Report 43-01 Table III, Row 401, Col. (b) + 404, Col. (b)
7	Net Plant less Deferred Taxes	\$	(50,171,947)	[5] - [6]
8	Gross Pole Investment	\$	436.71	[3] / [11]
9	Crossarm Allowance		5%	FCC default
10	Gross Pole Cost less Crossarm Allowance	\$	414.87	[8] * (1 - [9])
11	Number of Distribution Poles		1,122,965	ARMIS Report 43-01 Table III, Row 601, Col. (b)
II. Carrying Charge Rate				
Line #	Description			Source
12	Depreciation Rate for Poles		6.70%	ARMIS Report 43-01 Table III, Row 301, Col. (b)
13	Total General and Administrative	\$	895,684,823	ARMIS Report 43-01 Table III, Row 503, Col. (b)
14	Administrative and General Rate		5.58%	[13] / [1]
15	Maintenance of Overhead Lines	\$	43,003,700	ARMIS Report 43-01 Table III, Row 501, Col. (b)
16	Pole Rental Expense	\$	22,618,144	ARMIS Report 43-01 Table III, Row 501.2, Col. (b)
17	Operation and Maintenance Rate		4.16%	[(15) - (16)] / [3]
18	Operating Taxes	\$	64,821,732	ARMIS Report 43-01 Table III, Row 504, Col. (b)
19	Tax Rate		0.40%	[18] / [1]
20	Authorized Rate of Return		11.25%	FCC default
21	Adjusted Rate of Return (Gross Method)		-1.15%	[20] * [7] / [1]
22	Total Carrying Charge Rate		15.70%	[12] + [14] + [17] + [19] + [21]
III. Net Cost of a Bare Pole, Space Factor, and Rate Calculation				
Line #	Description			Source
23	Annual Pole Cost	\$	65.11	[10] * [22]
24	Urban Service Area Allocation		0.66	FCC default
25	Net Cost of Bare Pole - Urban	\$	42.98	[23] * [24]
26	Space Occupied by Attachment (ft.)		10.5	FCC default
27	Unusable Share Factor		0.667	FCC default
28	Total Unusable Space (ft.)		24	FCC default
29	Average Pole Height		37.5	FCC default
30	Total Usable Space		13.5	[29] - [28]
31	Number of Attaching Entities		5	FCC default (urban)
32	Space Factor		36.53%	{[26] + ([27] * [28])} / [31] / [29]
33	New Telecom Rate	\$	15.70	[25] * [32]
34	Pre-Existing Telecom Rate	\$	23.79	[23] * [32]

PUBLIC VERSION

2016 Per-Pole Rate for Met-Ed's, Penelec's, and Penn Power's Use of Verizon's Poles

Sources: ARMIS Report 43-01 (USOA Accounting), FCC Defaults

I. Net Investment per Distribution Pole				
Line #	Description	2015 Data		Source
		Gross	Method	
1	Total Distribution Plant	\$	16,411,161,372	ARMIS Report 43-01 Table III, Row 100, Col. (b)
2	Accumulated Depreciation - Distribution	\$	14,577,375,631	ARMIS Report 43-01 Table III, Row 200, Col. (b)
3	Gross Pole Investment	\$	499,152,651	ARMIS Report 43-01 Table III, Row 101, Col. (b)
4	Depreciation Reserve (Poles)	\$	613,574,804	ARMIS Report 43-01 Table III, Row 201, Col. (b)
5	Net Pole Plant	\$	(114,422,153)	[3] - [4]
6	Net Deferred Taxes Allocated to Distribution	\$	(21,392,101)	ARMIS Report 43-01 Table III, Row 401, Col. (b) + 404, Col. (b)
7	Net Plant less Deferred Taxes	\$	(93,030,052)	[5] - [6]
8	Gross Pole Investment	\$	443.77	[3] / [11]
9	Crossarm Allowance		5%	FCC default
10	Gross Pole Cost less Crossarm Allowance	\$	421.58	[8] * (1 - [9])
11	Number of Distribution Poles		1,124,805	ARMIS Report 43-01 Table III, Row 601, Col. (b)
II. Carrying Charge Rate				
Line #	Description			Source
12	Depreciation Rate for Poles		6.70%	ARMIS Report 43-01 Table III, Row 301, Col. (b)
13	Total General and Administrative	\$	(40,669,038)	ARMIS Report 43-01 Table III, Row 503, Col. (b)
14	Administrative and General Rate		-0.25%	[13] / [1]
15	Maintenance of Overhead Lines	\$	45,387,246	ARMIS Report 43-01 Table III, Row 501, Col. (b)
16	Pole Rental Expense	\$	25,427,575	ARMIS Report 43-01 Table III, Row 501.2, Col. (b)
17	Operation and Maintenance Rate		4.00%	[(15) - (16)] / [3]
18	Operating Taxes	\$	639,585,454	ARMIS Report 43-01 Table III, Row 504, Col. (b)
19	Tax Rate		3.90%	[18] / [1]
20	Authorized Rate of Return		11.125%	FCC default
21	Adjusted Rate of Return (Gross Method)		-2.07%	[20] * [7] / [1]
22	Total Carrying Charge Rate		12.27%	[12] + [14] + [17] + [19] + [21]
III. Net Cost of a Bare Pole, Space Factor, and Rate Calculation				
Line #	Description			Source
23	Annual Pole Cost	\$	51.75	[10] * [22]
24	Urban Service Area Allocation		0.66	FCC default
25	Net Cost of Bare Pole - Urban	\$	34.15	[23] * [24]
26	Space Occupied by Attachment (ft.)		10.5	FCC default
27	Unusable Share Factor		0.667	FCC default
28	Total Unusable Space (ft.)		24	FCC default
29	Average Pole Height		37.5	FCC default
30	Total Usable Space		13.5	[29] - [28]
31	Number of Attaching Entities		5	FCC default (urban)
32	Space Factor		36.53%	{[26] + ([27] * [28])} / [31] / [29]
33	New Telecom Rate	\$	12.48	[25] * [32]
34	Pre-Existing Telecom Rate	\$	18.91	[23] * [32]

PUBLIC VERSION

2017 Per-Pole Rate for Met-Ed's, Penelec's, and Penn Power's Use of Verizon's Poles

Sources: ARMIS Report 43-01 (USOA Accounting), FCC Defaults

I. Net Investment per Distribution Pole				
Line #	Description	2016 Data		Source
		Gross	Method	
1	Total Distribution Plant	\$	16,767,145,000	ARMIS Report 43-01 Table III, Row 100, Col. (b)
2	Accumulated Depreciation - Distribution	\$	15,001,020,000	ARMIS Report 43-01 Table III, Row 200, Col. (b)
3	Gross Pole Investment	\$	509,744,000	ARMIS Report 43-01 Table III, Row 101, Col. (b)
4	Depreciation Reserve (Poles)	\$	634,197,000	ARMIS Report 43-01 Table III, Row 201, Col. (b)
5	Net Pole Plant	\$	(124,453,000)	[3] - [4]
6	Net Deferred Taxes Allocated to Distribution	\$	(19,492,000)	ARMIS Report 43-01 Table III, Row 401, Col. (b) + 404, Col. (b)
7	Net Plant less Deferred Taxes	\$	(104,961,000)	[5] - [6]
8	Gross Pole Investment	\$	452.06	[3] / [11]
9	Crossarm Allowance		5%	FCC default
10	Gross Pole Cost less Crossarm Allowance	\$	429.45	[8] * (1 - [9])
11	Number of Distribution Poles		1,127,610	ARMIS Report 43-01 Table III, Row 601, Col. (b)
II. Carrying Charge Rate				
Line #	Description			Source
12	Depreciation Rate for Poles		6.70%	ARMIS Report 43-01 Table III, Row 301, Col. (b)
13	Total General and Administrative	\$	495,389,000	ARMIS Report 43-01 Table III, Row 503, Col. (b)
14	Administrative and General Rate		2.95%	[13] / [1]
15	Maintenance of Overhead Lines	\$	51,293,000	ARMIS Report 43-01 Table III, Row 501, Col. (b)
16	Pole Rental Expense	\$	27,781,000	ARMIS Report 43-01 Table III, Row 501.2, Col. (b)
17	Operation and Maintenance Rate		4.61%	([15] - [16]) / [3]
18	Operating Taxes	\$	363,626,000	ARMIS Report 43-01 Table III, Row 504, Col. (b)
19	Tax Rate		2.17%	[18] / [1]
20	Authorized Rate of Return		10.875%	FCC default
21	Adjusted Rate of Return (Gross Method)		-2.24%	[20] * [7] / [1]
22	Total Carrying Charge Rate		14.20%	[12] + [14] + [17] + [19] + [21]
III. Net Cost of a Bare Pole, Space Factor, and Rate Calculation				
Line #	Description			Source
23	Annual Pole Cost	\$	60.97	[10] * [22]
24	Urban Service Area Allocation		0.66	FCC default
25	Net Cost of Bare Pole - Urban	\$	40.24	[23] * [24]
26	Space Occupied by Attachment (ft.)		10.5	FCC default
27	Unusable Share Factor		0.667	FCC default
28	Total Unusable Space (ft.)		24	FCC default
29	Average Pole Height		37.5	FCC default
30	Total Usable Space		13.5	[29] - [28]
31	Number of Attaching Entities		5	FCC default (urban)
32	Space Factor		36.53%	{[26] + ([27] * [28])} / [31] / [29]
33	New Telecom Rate	\$	14.70	[25] * [32]
34	Pre-Existing Telecom Rate	\$	22.27	[23] * [32]

PUBLIC VERSION

2018 Per-Pole Rate for Met-Ed's, Penelec's, and Penn Power's Use of Verizon's Poles

Sources: ARMIS Report 43-01 (USOA Accounting), FCC Defaults

I. Net Investment per Distribution Pole				
Line #	Description	2017 Data		Source
		Gross	Method	
1	Total Distribution Plant	\$ 17,186,648,677		ARMIS Report 43-01 Table III, Row 100, Col. (b)
2	Accumulated Depreciation - Distribution	\$ 15,592,563,057		ARMIS Report 43-01 Table III, Row 200, Col. (b)
3	Gross Pole Investment	\$ 525,323,664		ARMIS Report 43-01 Table III, Row 101, Col. (b)
4	Depreciation Reserve (Poles)	\$ 662,536,603		ARMIS Report 43-01 Table III, Row 201, Col. (b)
5	Net Pole Plant	\$ (137,212,938)		[3] - [4]
6	Net Deferred Taxes Allocated to Distribution	\$ (20,155,507)		ARMIS Report 43-01 Table III, Row 401, Col. (b) + 404, Col. (b)
7	Net Plant less Deferred Taxes	\$ (117,057,431)		[5] - [6]
8	Gross Pole Investment	\$ 464.72		[3] / [11]
9	Crossarm Allowance	5%		FCC default
10	Gross Pole Cost less Crossarm Allowance	\$ 441.49		[8] * (1 - [9])
11	Number of Distribution Poles	1,130,399		ARMIS Report 43-01 Table III, Row 601, Col. (b)
II. Carrying Charge Rate				
Line #	Description			Source
12	Depreciation Rate for Poles	6.70%		ARMIS Report 43-01 Table III, Row 301, Col. (b)
13	Total General and Administrative	\$ 1,625,487,624		ARMIS Report 43-01 Table III, Row 503, Col. (b)
14	Administrative and General Rate	9.46%		[13] / [1]
15	Maintenance of Overhead Lines	\$ 52,444,201		ARMIS Report 43-01 Table III, Row 501, Col. (b)
16	Pole Rental Expense	\$ 28,591,700		ARMIS Report 43-01 Table III, Row 501.2, Col. (b)
17	Operation and Maintenance Rate	4.54%		[(15) - (16)] / [3]
18	Operating Taxes	\$ (64,764,971)		ARMIS Report 43-01 Table III, Row 504, Col. (b)
19	Tax Rate	-0.38%		[18] / [1]
20	Authorized Rate of Return	10.625%		FCC default
21	Adjusted Rate of Return (Gross Method)	-2.37%		[20] * [7] / [1]
22	Total Carrying Charge Rate	17.95%		[12] + [14] + [17] + [19] + [21]
III. Net Cost of a Bare Pole, Space Factor, and Rate Calculation				
Line #	Description			Source
23	Annual Pole Cost	\$ 79.26		[10] * [22]
24	Urban Service Area Allocation	0.66		FCC default
25	Net Cost of Bare Pole - Urban	\$ 52.31		[23] * [24]
26	Space Occupied by Attachment (ft.)	10.5		FCC default
27	Unusable Share Factor	0.667		FCC default
28	Total Unusable Space (ft.)	24		FCC default
29	Average Pole Height	37.5		FCC default
30	Total Usable Space	13.5		[29] - [28]
31	Number of Attaching Entities	5		FCC default (urban)
32	Space Factor	36.53%		{[26] + ([27] * [28])} / [31] / [29]
33	New Telecom Rate	\$ 19.11		[25] * [32]
34	Pre-Existing Telecom Rate	\$ 28.96		[23] * [32]

PUBLIC VERSION

2019 Per-Pole Rate for Met-Ed's, Penelec's, and Penn Power's Use of Verizon's Poles

Sources: ARMIS Report 43-01 (GAAP Accounting), FCC Defaults

I. Net Investment per Distribution Pole			
Line #	Description	2018 Data Net Method	Source
1	Total Distribution Plant	\$ 15,242,278,689	ARMIS Report 43-01 Table III, Row 100, Col. (b)
2	Accumulated Depreciation - Distribution	\$ 10,714,444,135	ARMIS Report 43-01 Table III, Row 200, Col. (b)
3	Gross Pole Investment	\$ 603,117,713	ARMIS Report 43-01 Table III, Row 101, Col. (b)
4	Depreciation Reserve (Poles)	\$ 385,206,028	ARMIS Report 43-01 Table III, Row 201, Col. (b)
5	Net Pole Plant	\$ 217,911,685	[3] - [4]
6	Net Deferred Taxes Allocated to Distribution	\$ 5,065,801	ARMIS Report 43-01 Table III, Row 401 + 404, Col. (b)
7	Net Plant less Deferred Taxes	\$ 212,845,884	[5] - [6]
8	Net Pole Investment	\$ 188.32	[3] / [11]
9	Crossarm Allowance	5%	FCC default
10	Net Pole Cost less Crossarm Allowance	\$ 178.90	[8] * (1 - [9])
11	Number of Distribution Poles	1,130,262	ARMIS Report 43-01 Table III, Row 601, Col. (b)
II. Capital Carrying Charge Rate			
Line #	Description		Source
12	Depreciation Rate for Poles	18.99%	ARMIS Report 43-01 Table III, Row 301, Col. (b) * [3] / [7]
13	Total General and Administrative	\$ 385,521,734	ARMIS Report 43-01 Table III, Row 503, Col. (b)
14	Administrative and General Rate	9.11%	[13] / [A4]
15	Maintenance of Overhead Lines	\$ 53,674,649	ARMIS Report 43-01 Table III, Row 501, Col. (b)
16	Pole Rental Expense	\$ 24,469,956	ARMIS Report 43-01 Table III, Row 501.2, Col. (b)
17	Operation and Maintenance Rate	13.72%	([15] - [16]) / [3]
18	Operating Taxes	\$ 240,364,105	ARMIS Report 43-01 Table III, Row 504, Col. (b)
19	Tax Rate	5.68%	[18] / [A4]
20	Authorized Rate of Return	10.375%	FCC default
21	Total Capital Carrying Charge Rate	57.88%	[12] + [14] + [17] + [19] + [20]
III. Net Cost of a Bare Pole, Space Factor, and Rate Calculation			
Line #	Description		Source
22	Annual Pole Cost	\$ 103.55	[10] * [21]
23	Urban Service Area Allocation	0.66	FCC default
24	Net Cost of Bare Pole - Urban	\$ 68.34	[22] * [23]
25	Space Occupied by Attachment (ft.)	10.5	FCC default
26	Unusable Share Factor	0.667	FCC default
27	Total Unusable Space (ft.)	24.0	FCC default
28	Average Pole Height	37.5	FCC default
29	Total Usable Space	13.5	[28] - [27]
30	Number of Attaching Entities	5	FCC default (urban)
31	Space Factor	36.53%	{[26] + ([27] * [28]) / [31]} / [29]
32	New Telecom Rate	\$ 18.28	([24] * [31]) - [A5]
33	Pre-Existing Telecom Rate	\$ 27.70	[32] / 0.66

Additional Inputs and Calculations			
Line #	Description	2018 Data Net Method	Source
A1	Gross Plant Investment	\$ 15,242,278,689	ARMIS Report 43-01 Table III, Row 100, Col. (b)
A2	Total State Depreciation	\$ 10,714,444,135	ARMIS Report 43-01 Table III, Row 200, Col. (b)
A3	Total Accumulated Taxes	\$ 298,222,398	ARMIS Report 43-01 Table III Rows 403 + 406 Col (b)
A4	Net Plant Investment	\$ 4,229,612,156	[A1] - [A2] - [A3]
A5	Implementation Rate Difference	\$ 6.69	47 C.F.R. § 1.1406(e)

Exhibit C-6

PUBLIC VERSION

Overpayment Calculation: Proportional New Telecom Rates

	2011 (172 days)	2012	2013	2014	2015	2016	2017	2018	2019*	Total
Verizon's Net Rent Payments to FirstEnergy										
Verizon's Net Rent Payment to Met-Ed										
Verizon's Net Rent Payment to Penelec										
Verizon's Net Rent Payment to Penn Power										
Verizon's Total Net Rent Payment to FirstEnergy										
Verizon's Net New Telecom Rent to FirstEnergy										
Met-Ed Poles Used By Verizon	129,306	129,288	129,308	129,324	129,421	129,422	129,422	129,421		
Per-Pole New Telecom Rate	\$ 8.29	\$ 9.87	\$ 10.07	\$ 5.02	\$ 9.35	\$ 8.79	\$ 9.55	\$ 12.20		
Verizon's Gross Rent to Met-Ed	\$ 505,137	\$ 1,276,073	\$ 1,302,132	\$ 649,206	\$ 1,210,086	\$ 1,137,619	\$ 1,235,980	\$ 1,578,936		
Verizon Poles Used By Met-Ed	30,015	30,018	30,021	30,021	30,023	30,026	30,026	30,027	Not yet invoiced	
Per-Pole New Telecom Rate	\$ 9.63	\$ 9.71	\$ 12.44	\$ 12.15	\$ 15.70	\$ 12.48	\$ 14.70	\$ 19.11		
Met-Ed's Gross Rent to Verizon	\$ 136,207	\$ 291,475	\$ 373,461	\$ 364,755	\$ 471,361	\$ 374,724	\$ 441,382	\$ 573,816		
Net New Telecom Rent to Met-Ed	\$ 368,929	\$ 984,598	\$ 928,670	\$ 284,451	\$ 738,725	\$ 762,895	\$ 794,598	\$ 1,005,120		\$ 5,867,987
Penelec Poles Used by Verizon	145,168	145,326	145,419	146,720	146,732	146,794	146,814	146,859		
Per-Pole New Telecom Rate	\$ 6.43	\$ 6.79	\$ 7.18	\$ 5.21	\$ 6.96	\$ 7.18	\$ 7.49	\$ 10.49		
Verizon's Gross Rent to Penelec	\$ 439,863	\$ 986,764	\$ 1,044,108	\$ 764,411	\$ 1,021,255	\$ 1,053,981	\$ 1,099,637	\$ 1,540,551	Not yet invoiced	
Verizon Poles Used by Penelec	73,079	73,285	73,398	73,398	73,398	73,399	73,400	73,400		
Per-Pole New Telecom Rate	\$ 9.63	\$ 9.71	\$ 12.44	\$ 12.15	\$ 15.70	\$ 12.48	\$ 14.70	\$ 19.11		
Penelec's Gross Rent to Verizon	\$ 331,630	\$ 711,597	\$ 913,071	\$ 891,786	\$ 1,152,349	\$ 916,020	\$ 1,078,980	\$ 1,402,674		
Net New Telecom Rent to Penelec	\$ 108,233	\$ 275,166	\$ 131,037	\$ (127,375)	\$ (131,094)	\$ 137,961	\$ 20,657	\$ 137,877		\$ 552,463
Penn Power Poles Used By Verizon	25,023	25,063	25,063	25,282	25,552	25,554	25,557	25,574	25,595	
Per-Pole New Telecom Rate	\$ 7.30	\$ 8.47	\$ 8.51	\$ 8.21	\$ 8.94	\$ 9.40	\$ 9.08	\$ 11.18	\$ 11.80	
Verizon's Gross Rent to Penn Power	\$ 86,079	\$ 212,284	\$ 213,286	\$ 207,565	\$ 228,435	\$ 240,208	\$ 232,058	\$ 285,917	\$ 302,021	
Verizon Poles Used By Penn Power	7,151	7,162	7,158	7,158	7,414	7,413	7,411	7,416	7,415	
Per-Pole New Telecom Rate	\$ 9.63	\$ 9.71	\$ 12.44	\$ 12.15	\$ 15.70	\$ 12.48	\$ 14.70	\$ 19.11	\$ 18.28	
Penn Power's Gross Rent to Verizon	\$ 32,451	\$ 69,543	\$ 89,046	\$ 86,970	\$ 116,400	\$ 92,514	\$ 108,942	\$ 141,720	\$ 135,546	
Net New Telecom Rent to Penn Power	\$ 53,628	\$ 142,741	\$ 124,241	\$ 120,596	\$ 112,035	\$ 147,693	\$ 123,116	\$ 144,198	\$ 166,475	\$ 1,134,721
Verizon's Total Net New Telecom Rent to FirstEnergy	\$ 530,790	\$ 1,402,505	\$ 1,183,948	\$ 277,672	\$ 719,666	\$ 1,048,550	\$ 938,371	\$ 1,287,195	\$ 166,475	\$ 7,555,171
Verizon's Overpayment to FirstEnergy										

*The 2019 calculation assumes that Penn Power pays in full Verizon's outstanding invoice for 2019 rent.

PUBLIC VERSION

Overpayment Calculation: Proportional Pre-Existing Telecom Rates

	2011 (172 days)	2012	2013	2014	2015	2016	2017	2018	2019*	Total
Verizon's Net Rent Payments to FirstEnergy										
Verizon's Net Rent Payment to Met-Ed										
Verizon's Net Rent Payment to Penelec										
Verizon's Net Rent Payment to Penn Power										
Verizon's Total Net Rent Payment to FirstEnergy										
Verizon's Net Pre-Existing Telecom Rent to FirstEnergy										
Met-Ed Poles Used By Verizon	129,306	129,288	129,308	129,324	129,421	129,422	129,422	129,421		
Per-Pole Pre-Existing Telecom Rate	\$ 12.57	\$ 14.96	\$ 15.26	\$ 7.61	\$ 14.16	\$ 13.32	\$ 14.47	\$ 18.49		
Verizon's Gross Rent to Met-Ed	\$ 765,931	\$ 1,934,148	\$ 1,973,240	\$ 984,156	\$ 1,832,601	\$ 1,723,901	\$ 1,872,736	\$ 2,392,994		
Verizon Poles Used By Met-Ed	30,015	30,018	30,021	30,021	30,023	30,026	30,026	30,027	Not yet invoiced	
Per-Pole Pre-Existing Telecom Rate	\$ 14.59	\$ 14.72	\$ 18.84	\$ 18.41	\$ 23.79	\$ 18.91	\$ 22.27	\$ 28.96		
Met-Ed's Gross Rent to Verizon	\$ 206,362	\$ 441,865	\$ 565,596	\$ 552,687	\$ 714,247	\$ 567,792	\$ 668,679	\$ 869,582		
Net Pre-Existing Telecom Rent to Met-Ed	\$ 559,569	\$ 1,492,284	\$ 1,407,644	\$ 431,469	\$ 1,118,354	\$ 1,156,109	\$ 1,204,057	\$ 1,523,412		\$ 8,892,899
Penelec Poles Used by Verizon	145,168	145,326	145,419	146,720	146,732	146,794	146,814	146,859		
Per-Pole Pre-Existing Telecom Rate	\$ 9.74	\$ 10.29	\$ 10.89	\$ 7.89	\$ 10.54	\$ 10.88	\$ 11.35	\$ 15.90		
Verizon's Gross Rent to Penelec	\$ 666,293	\$ 1,495,405	\$ 1,583,613	\$ 1,157,621	\$ 1,546,555	\$ 1,597,119	\$ 1,666,339	\$ 2,335,058		
Verizon Poles Used by Penelec	73,079	73,285	73,398	73,398	73,398	73,399	73,400	73,400	Not yet invoiced	
Per-Pole Pre-Existing Telecom Rate	\$ 14.59	\$ 14.72	\$ 18.84	\$ 18.41	\$ 23.79	\$ 18.91	\$ 22.27	\$ 28.96		
Penelec's Gross Rent to Verizon	\$ 502,439	\$ 1,078,755	\$ 1,382,818	\$ 1,351,257	\$ 1,746,138	\$ 1,387,975	\$ 1,634,618	\$ 2,125,664		
Net Pre-Existing Telecom Rent to Penelec	\$ 163,854	\$ 416,649	\$ 200,795	\$ (193,636)	\$ (199,583)	\$ 209,144	\$ 31,721	\$ 209,394		\$ 838,337
Penn Power Poles Used By Verizon	25,023	25,063	25,063	25,282	25,552	25,554	25,557	25,574	25,595	
Per-Pole Pre-Existing Telecom Rate	\$ 11.06	\$ 12.83	\$ 12.90	\$ 12.44	\$ 13.54	\$ 14.24	\$ 13.75	\$ 16.94	\$ 17.88	
Verizon's Gross Rent to Penn Power	\$ 130,416	\$ 321,558	\$ 323,313	\$ 314,508	\$ 345,974	\$ 363,889	\$ 351,409	\$ 433,224	\$ 457,639	
Verizon Poles Used By Penn Power	7,151	7,162	7,158	7,158	7,414	7,413	7,411	7,416	7,415	
Per-Pole Pre-Existing Telecom Rate	\$ 14.59	\$ 14.72	\$ 18.84	\$ 18.41	\$ 23.79	\$ 18.91	\$ 22.27	\$ 28.96	\$ 27.70	
Penn Power's Gross Rent to Verizon	\$ 49,165	\$ 105,425	\$ 134,857	\$ 131,779	\$ 176,379	\$ 140,180	\$ 165,043	\$ 214,767	\$ 205,396	
Net Pre-Existing Telecom Rent to Penn Power	\$ 81,251	\$ 216,134	\$ 188,456	\$ 182,729	\$ 169,595	\$ 223,709	\$ 186,366	\$ 218,456	\$ 252,243	\$ 1,718,939
Verizon's Total Net Pre-Existing Telecom Rent to FirstEnergy	\$ 804,674	\$ 2,125,067	\$ 1,796,895	\$ 420,562	\$ 1,088,366	\$ 1,588,962	\$ 1,422,144	\$ 1,951,263	\$ 252,243	\$ 11,450,175
Verizon's Overpayment to FirstEnergy										

*The 2019 calculation assumes that Penn Power pays in full Verizon's outstanding invoice for 2019 rent.

Exhibit MSC-2

Exhibit 36

PUBLIC VERSION

PENNSYLVANIA
PUBLIC UTILITY COMMISSION
Harrisburg, PA 17105-3265

Public Meeting held January 11, 2007

Commissioners Present:

Wendell F. Holland, Chairman
James H. Cawley, Vice Chairman, Concurring & Dissenting Statement attached
Kim Pizzingrilli
Terrance J. Fitzpatrick

Pennsylvania Public Utility Commission,	:	R-00061366
Met-Ed Industrial Energy Users Group and	:	
Industrial Energy Consumers of Pennsylvania,	:	R-00061366C0001
William R. Lloyd, Jr., Small Business Advocate,	:	R-00061366C0002
Irwin A. Popowsky, Consumer Advocate,	:	R-00061366C0003
Met-Ed Industrial Energy Users Group and	:	
Industrial Energy Consumers of Pennsylvania,	:	R-00061366C0005
R.H. Sheppard Co., Inc.	:	R-00061366C0013

v.

Metropolitan Edison Company

Pennsylvania Public Utility Commission,	:	R-00061367
Penelec Industrial Customer Alliance and	:	
Industrial Energy Consumers of Pennsylvania,	:	R-00061367C0001
William R. Lloyd, Jr., Small Business Advocate,	:	R-00061367C0002
Irwin A. Popowsky, Consumer Advocate,	:	R-00061367C0003
Penelec Industrial Customer Alliance and	:	
Industrial Energy Consumers of Pennsylvania,	:	R-00061367C0005
Pierre Fortis,	:	R-00061367C0007
L.C. Rhodes	:	R-00061367C0008

v.

Pennsylvania Electric Company

Petition of Metropolitan Edison Company for	:	
Approval of a Rate Transition Plan	:	P-00062213
Petition of Pennsylvania Electric Company for	:	
Approval of a Rate Transition Plan	:	P-00062214
Re: Merger Savings Remand Proceeding	:	A-110300F0095
	:	A-110400F0040

TABLE OF CONTENTS

I.	HISTORY OF THE PROCEEDINGS	2
II.	MERGER SAVINGS	10
A.	Allocation of Merger Savings	10
B.	Amount of Merger Savings	16
III.	NON-NUG STRANDED COST RECOVERY/NUG COST RECOVERY	17
A.	Non-NUG Stranded Cost Recovery	17
B.	Non-stranded NUG Costs.....	22
IV.	GENERATION RATE CAP	28
V.	TRANSMISSION SERVICE CHARGE RIDER	50
A.	Inclusion of Congestion Costs in the TSC Rider	51
B.	Deferred 2006 Transmission Charges	58
VI.	GENERAL PRINCIPLES FOR A 1308 GENERAL RATE INCREASE CASE.....	65
VII.	RATE BASE/CASH WORKING CAPITAL	68
A.	Distribution.....	68
1.	Pennsylvania Corporate Net Income Tax and Pennsylvania Capital Stock Tax	69
2.	Treatment of “Non-Cash” Items	72
3.	Treatment of Transmission Costs	76
4.	Treatment of Return on Equity and Payment Lag Associated with Interest on Long-Term Debt.....	79
5.	Payment Lag Associated with Certain “Other O&M” Items.....	81
VIII.	REVENUES AND EXPENSES	83
A.	Universal Service Charge Deferral Recovery Period and Imposition of Carrying Charges	83
B.	Payroll Expense	86
C.	Pension Expense.....	87
D.	Other Post Employment Benefits (OPEB)	93
E.	Rate Case Expense	94

PUBLIC VERSION

F. Consolidated Tax Savings 97

G. Investment Tax Credits and Excess Deferred Income Taxes..... 103

H. Decommissioning Costs 104

I. Community Action Association of Pennsylvania (CAAP) Claim 108

J. Conservation and Renewable Initiatives: Retention of
Riders and PennFuture Initiatives 110

 1. Sustainable Energy Fund Riders 110

 2. Penn Future’s Renewable Energy Initiatives 114

IX. RATE OF RETURN..... 117

 A. Capital Structure 117

 B. Cost of Capital 120

 C. Return on Equity 126

X. COST OF SERVICE 137

 A. ALJs’ Interpretation of *Lloyd v. Pa. PUC*,
 904 A.2d 1010 (Pa. Cmwlth. 2006), Petitions for
 Allowance of Appeal Pending 137

XI. RATE DESIGN 145

 A. Metropolitan Edison Company - Unopposed Rate Design Changes 145

 B. Pennsylvania Electric Company - Unopposed Rate Design Changes..... 146

 C. Disputed Rate Design Issues 147

 1. Rates RS and RT 147

 2. Rates GS and GST 151

 3. Eight Hour on-Peak Time of Day Option (ME) 153

 4. Rates GP and LP 154

XII. TARIFF PROVISIONS..... 154

 A. Metropolitan Edison Company Unopposed Tariff Changes 154

 B. Pennsylvania Electric Company Unopposed Tariff Changes 157

 C. Resolved Tariff Issues 158

 1. Rule 15d – Exit Fees 158

 2. Limitation of Liability..... 159

 3. Business Development Riders (BDRs)..... 159

 4. Rule 12b(9) Transformer Losses Adjustment..... 160

PUBLIC VERSION

D. Disputed Tariff Issues..... 161
 1. Real Time Pricing (RTP) Rate 161
E. Wind Product 165
F. Hourly Pricing 166
G. Seasonal Time of Day Provisions (Met-Ed)..... 169
H. Elkland Rates 171
XIII. SECTION 1307 RIDERS..... 175
 A. Storm Damage Rider 175
 B. Universal Service Cost Rider 177
 C. Government Mandated Programs Rider 182
XIV. DIRECTED QUESTIONS OF VICE CHAIRMAN CAWLEY 185
XV. MISCELLANEOUS..... 185
XVI. CONCLUSION..... 188
TABLES 1
APPENDIX A..... 1

d. Disposition

In deciding this issue, we focus on the provisions of 66 Pa. C.S. § 315(a) regarding burden of proof. Here, PennFuture attempts to place a significant amount of new costs upon the Companies for which the Companies have not requested recovery within their case-in-chief. When this occurs, the burden of proving these new costs are just and reasonable does not shift to the Companies but remains with PennFuture. We agree with the ALJs that PennFuture has not met its burden of proof regarding these new costs. Accordingly, we shall adopt the recommendation of the ALJs on this issue.

IX. RATE OF RETURN

A. Capital Structure

1. Positions of the Parties

MEPN proposed a capital structure consisting of 51% long-term debt and 49% common equity. (MEPN St. 7 at 7) Neither the OCA nor the OTS disagreed and stated that this is reasonable. (OTS St. 1, at 9-10; OCA St. 4, at 10-13). The OTS accepted this capital structure for the purpose of establishing appropriate returns in this proceeding as it is within the range of capital structures used by its witness. (OTS Exh. 1, Sch. 2.). The OCA recommended a capital structure consisting of 51% debt and 49% common equity, based upon its similarity to the Companies' pre-merger capital structures, the proxy group used by its witness and its support of a strong single A credit rating. (OCA St. 4 at 12 & 19; OCA St. 5S at 2). Included in ME's and PN's proposed capital structure are portions of FirstEnergy's merger acquisition debt.

The OCA and the OTS both objected to the methodology by which MEPN arrived at this proposed capital structure. The OCA objected to the methodology because it contends the methodology improperly includes goodwill and amounts to a request by

MEPN to impose an acquisition premium upon the ratepayers. The OCA contended that a condition of the Commission's approval of the FirstEnergy/GPU merger was that the Companies should not reflect in retail rates the acquisition premium. If the ratemaking capital structure is based on the goodwill amounts on the MEPN balance sheets, the OCA argued the acquisition premium is included in setting the authorized rate of return on the rate base for retail delivery service. The OCA concluded that this is improper and inconsistent with the Commission order prohibiting recovery of an acquisition premium through retail rates. (OCA St. 4 at 12-13., OCA St. 4S at 5-6).

Additionally, the OCA argued that while the Companies' method results in a reasonable capital structure in this case, it may not in future cases. (OCA St. 4 at 11-12). According to the OCA, the Companies' method artificially increases the embedded cost of debt component. (OCA St. 4 at 11-12). The OCA argued that the Commission should reject the Companies' procedure that allocates FirstEnergy's acquisition debt to MEPN. (OCA St. 4, at 10-13).

The OTS also argued that the Companies' capital structure is based on the misallocation of debt. To the extent that the Companies calculate the claimed capital structure by including a proportional share of FirstEnergy's debt securities used to finance the acquisition of GPU, the OTS argued the calculation is improper in this proceeding. According to the OTS, only debt used to finance the Companies' rate base is properly included in this proceeding. The OTS contended that including debt for the acquisition of GPU is not appropriate in determining the Companies' capital structure. (OTS M.B. at 32).

In response to the OTS and OCA position opposing allocation of FirstEnergy's acquisition debt to MEPN, the Companies replied that since the acquisition, they have incurred depreciation and amortization expenses and these expenses have altered the equity component of capitalization. MEPN opined that it is

unreasonable to assume that an amount equal to the goodwill associated with the acquisition premium continues to be reflected in the equity balance. MEPN stated that an adjustment for any alleged goodwill would be unwarranted and arbitrary. (MEPN 7-R, pp.2-3).

MEPN contended that their recommended capital structure does not attempt to recover the acquisition premium through rates. They noted that when the Commission approved the merger, the Commission did not address determination of the Companies' capital structure for ratemaking purposes nor did the Commission address the appropriate ratemaking treatment of any modifications or adjustments to the capital component due to merger accounting. Therefore, MEPN concluded that their proposed capital structure does not violate the Commission order prohibiting recovery of an acquisition premium through rates. (MEPN 7-R, at 3-4).

MEPN also argued in rebuttal that imputing portions of FirstEnergy's merger acquisition debt to MEPN is entirely appropriate because FirstEnergy used that debt to pay for the assets of the Companies. MEPN also pointed out that the FirstEnergy debt allocated to them was based on ten year and thirty year rates of 4.25% and 4.94%, respectively. These rates are historically among the lowest rates for ten and thirty year debt over the past twenty years. (MEPN 7-R, at 4-6).

2. ALJs' Recommendation

The ALJs recommended adoption of a capital structure of 51% long-term debt and 49% common equity. The ALJs found that all of the Parties agreed that this capital structure is appropriate, and concluded that it was reasonable to adopt it. (R.D. at 121).

In regard to the OTS and the OCA disagreement with the MEPN methodology used to arrive at this capital structure, the ALJs agreed with the OCA and the OTS position and rejected ME's and PN's methodology. The ALJs noted that MEPN stated that their proposed capital structures contain a portion of the FirstEnergy merger acquisition debt. According to the ALJs, a portion of the money that FirstEnergy borrowed to finance the merger represents the premium it paid to acquire GPU. The ALJs reasoned that if ME's and PN's proposed capital structure includes FirstEnergy debt, it would have to include a portion of the money borrowed to pay the acquisition premium for GPU. Therefore, rates based on a capital structure that includes a portion of the money borrowed to pay the acquisition premium would allow recovery of the premium through those rates. The ALJs concluded that ME's and PN's methodology is inconsistent with previous Commission rulings in the Merger Savings Remand Proceeding that the Companies should not collect the acquisition premium in retail rates. (R.D. at 121-122).

B. Cost of Capital

1. Positions of the Parties

MEPN proposed an average effective cost of debt of 6.088% for ME and 6.557% for PE (MEPN Exhs. JFP-26 and JFP-27) and weighted average cost of debt of 8.98% for ME and 9.22% for PN. (MEPN St. 7 at 11 and MEPN Exh. JFP-28). According to the Companies, the only substantive dispute concerning the determination of the appropriate weighted average cost of debt relates to the recognition of the actual cost of the FirstEnergy debt that was imputed to MEPN. MEPN argued that recognition of this debt is appropriate because it represents debt issued to pay for the assets of MEPN and the proceeds have assisted FirstEnergy in providing financial support to MEPN. (MEPN St. 7-R, at 4-6).

The OTS proposed a cost of long term debt for ME in this proceeding of 5.10% and 5.83% for PN. (OTS St. 1, at 11-12). The OTS based long term debt on the Companies' contractual obligations for capital used to finance their rate base. These cost rates represent the obligations used to finance the Companies' rate base and are consistent with the obligations of companies of similar size and risk characteristics. The OTS argued that inclusion of any debt that is used for purposes other than the financing of the rate base is inappropriate and must be rejected. The OTS contended that the Companies' proposed debt costs are flawed since they include a proportional share of FirstEnergy's debt that was issued in the acquisition of GPU. As a portion of the Companies' debt cost in this proceeding includes debt used to finance the acquisition of GPU, the OTS averred that its use in this proceeding is inappropriate. (OTS M.B. at 32-33).

The OCA proposed that ME's and PN's costs of debt are actually 5.051% and 5.83% respectively. The OCA argued that the Companies' proposal inflates them to about 6.09% and 6.56%, respectively, because it allocates debt and the cost of parent company debt in its adjusted capital structure. The debt of FirstEnergy, according to the OCA, carries a higher cost rate than either of the Companies' actual embedded cost of debt. (OCA St. 4S at 2). In particular, the FirstEnergy debt reflects FirstEnergy's business and financial risks, including the risks associated with unregulated generation costs. (OCA St. 4S at 6). The OCA contended that the Commission should not impose the FirstEnergy debt cost premium on MEPN customers. The OCA opined that customers should not be required to pay for the higher FirstEnergy cost of debt. (OCA St. 4 at 12). Instead, according to the OCA, the cost of debt should be based on each of the Companies' own cost rate of actual long-term debt on December 31, 2006. (OCA St. 4S at 2) (OCA M.B. at 53-54).

2. ALJs' Recommendation

The ALJs recommended adoption of the OCA position. The ALJs found that MEPN customers should not pay for the higher FirstEnergy cost of debt reflecting FirstEnergy business and financial risks, including the risks associated with unregulated generation costs, nuclear assets and environmental compliance. According to the ALJs, MEPN are regulated entities that do not have risks of this type. The ALJs agreed with the OCA that the cost of debt should be based on each of the Companies' own cost rate of actual long-term debt at December 31, 2006 and, concluded that the MEPN costs of debt are 5.051% and 5.83%, respectively. (R.D. at 123).

3. Exceptions

In its Exceptions, MEPN states that its proposed 51%/49% debt-to-equity capital structure reflects a significant reduction to the equity component of their capital structures, which is the most expensive component of capital. MEPN claims that by reducing the equity, this modified capital structure benefits customers through a lower overall cost of capital. The Companies note that this proposed capital structure was accepted by both the OTS and the OCA, the only parties to address capital structure, and was adopted by the ALJ's. (MEPN Exc. at 31-32).

MEPN states that it derived this modified capital structure by imputing to MEPN an appropriate portion of the Merger acquisition debt incurred by FirstEnergy to pay for the assets of MEPN. MEPN claims that the portion of the FirstEnergy debt allocated to MEPN was based on the percentage of the net Merger purchase price allocated to MEPN, not on the goodwill allocation as erroneously found by the ALJs in FOF No. 204. MEPN also claim that contrary to the erroneous conclusion by the ALJs in FOF No. 206, the imputed debt does not uniformly carry a higher cost rate than the stand-

alone MEPN debt. Rather, according to the Companies, the imputed FirstEnergy debt carries a lower cost rate than some MEPN debt. (MEPN Exc. at 32).

MEPN note that neither the OTS nor the OCA offered an alternative rationale for deriving the favorable capital structure it proposed. Nonetheless, according to the Companies, the ALJs reject the inescapable implications of the only rational basis for deriving the adopted capital structure that appears in the record, and refuse to recognize the associated cost of the imputed FirstEnergy debt. MEPN requests that the Commission correct this error so as to ensure that the logical consequences of the capital structure ratemaking determinations are properly reflected in the end result of this proceeding. (MEPN Exc. at 32-33).

Additionally, MEPN notes that the ALJs accept the arguments of the OTS and the OCA that reflection of the cost of the imputed FirstEnergy debt would somehow violate a Commission prohibition on the recovery of the Merger acquisition premium. MEPN opines that this conclusion is erroneous, as the Commission prohibition was designed to preclude the amortization of goodwill in MEPN's cost of service. MEPN argues that the Commission has never addressed capital structure/cost of debt issues in the context of any rulings on the Merger. Therefore, according to the Companies, because it is not seeking to amortize goodwill in their cost of service, recognition of the cost of the imputed FirstEnergy debt does not violate the prohibition on the recovery of the acquisition premium. (MEPN Exc. at 33).

In reply, the OCA rejoins that the ALJs correctly concluded that FirstEnergy debt should not be included in the cost of debt for MEPN. The OCA avers that the method used by the Companies to reach the debt-to-equity ratio improperly brings goodwill, an accounting concept, into Pennsylvania ratemaking and improperly imposes the merger acquisition premium on ratepayers. The OCA opines that the Companies are incorrect to claim that neither the OCA nor the OTS offers alternative

rationales to the Companies' that would support the 51/49 debt-to-equity capital structure. The OCA states that its witness noted that a 51/49 debt-to-equity capital structure is reasonable in this case because it is similar to the Companies' pre-merger capital structures, the equity ratio is similar to the OCA proxy group, and the ratio is supportive of a strong single A credit rating. (OCA R.Exc. at 20-21).

In regard to the embedded cost of debt, the OCA notes that the Companies' argument in favor of imputing FirstEnergy debt, that reflects total corporate risks, into the capital structures of ME and PN have been demonstrated to be unsound, based upon both contradictory statements and factual errors, and as such should be rejected. The OCA requests that the Commission adopt the ALJs' conclusion that recommends a capital structure of 51/49 debt-to-equity and the use of the actual cost rate of debt for MEPN rather than the inflated cost rate from imputing FirstEnergy debt. (OCA R.Exc. at 21).

The OTS, in its Reply Exceptions, rejoins that the Companies' argument relies heavily on a misguided discussion as to the determination of the capital structure adopted in this proceeding. The OTS avers that it adopted the Companies' proposed capital structure as it was representative of the capital structures routinely found in this industry. OTS claims that at no point did it adopt the Companies' methodology as it has consistently maintained that their claimed hypothetical capital structure is based on the misallocation of debt. The OTS states that the proper capital structure only includes debt that was used to finance the Companies' rate base. Furthermore, the OTS notes that the record clearly indicates that the imputed debt for ME carried a cost rate of 6.45%, which is significantly higher than the 5.051% cost rate determined on a stand-alone basis for ME. Similarly, OTS avers that for PN, the imputed FirstEnergy debt has an issue rate of 7.375% in contrast to the stand-alone debt cost of 5.83%. According to the OTS, these facts indicate that including the misallocated debt from FirstEnergy improperly inflates the appropriate debt cost for MEPN in this proceeding. (OTS R.Exc. at 16-19).

4. Disposition

The resolution of both the appropriate Capital Structure and allowable Cost of Capital rate are dependent upon whether MEPN should be permitted to include a portion of FirstEnergy's merger acquisition debt within its claims in this proceeding. Our review of the record evidence leads us to adopt the recommendation of the ALJs to not allow for the allocation of this acquisition debt to the Companies. As a result, we are in agreement with the ALJs that the Companies proposed 51% long-term debt and 49% common equity capital structure, as agreed to by the OTS and the OCA, is reasonable, but that the Companies' methodology for arriving at this capital structure should be rejected.

Similarly, we are in agreement with the ALJs that the appropriate cost of debt for ME should be 5.051% and the appropriate cost of debt for PN should be 5.83%, which were derived by eliminating the imputed FirstEnergy acquisition debt from the calculations. Specifically, we adopt the position of the OCA that the cost of debt should be based on each of the Companies' own cost rate of actual long-term debt at December 31, 2006.

MEPN have not demonstrated that its proposal to allocate FirstEnergy's acquisition debt to MEPN is appropriate. We are in agreement with the position of the OCA that the Companies' methodology artificially increases the embedded cost of debt component and in agreement with the position of the OTS that only debt used to finance the Companies' rate base is properly included in this proceeding. We reject the contention of the Companies that its customers should be subjected to the higher FirstEnergy cost of debt which reflects FirstEnergy's business and financial risks associated with unregulated generation costs, nuclear assets and environmental compliance. As noted by the ALJs, MEPN are regulated distribution entities that do not

have risks of this type. Accordingly, the Exceptions of MEPN are denied and the recommendations of the ALJs are adopted.

C. Return on Equity

Although there are various models used to estimate the cost of equity, the Commission favors the Discounted Cash Flow (DCF) Model. The DCF model assumes that the market price of a stock is the present value of the future benefits of holding that stock. These benefits are the future cash flows of holding the stock, i.e., the dividends paid and the proceeds from the ultimate sale of the stock. Because dollars received in the future are worth less than dollars received today, the cash flow must be “discounted” back to the present value at the investor’s rate of return.

The following table summarizes the cost of common equity claims made, and methodologies used, by the Parties in this proceeding.

Methodology	MEPN	OCA (5)	OTS (6)
DCF	9.3 to 10.3 (1)	9.6 to 10.1	9.5 to 10.0
CAPM/ECAPM	10.8 to 12.5 (2)	n/a	n/a
CAPM/	n/a	9.2 to 11.0	n/a
Range Recommendation	11.5 to 12.25 (3)	9.6 to 10.1	9.5 to 10.0
Point Recommendation	12.0 (4)	9.7	9.75

- (1)** MEPN St. No. 8, Table MJV-7, MEPN M.B. at 71.
- (2)** MEPN St. No. 8 at 55, 62.
- (3)** MEPN St. No. 8 at 64.
- (4)** MEPN St. No. 8 at 63.
- (5)** OCA St. No. 4 at 4-6.
- (6)** OTS St. No. 1 at 27.

1. Positions of the Parties

MEPN proposed a return on equity of 12.0% for both Companies as just and reasonable. (MEPN St. 8, at 62-63). The Companies used the Capital Asset Pricing Model (CAPM) combined with the Empirical Capital Asset Pricing Model (ECAPM) to calculate a return on common equity. (ME/PE St. 8, at 22-27). The Companies advocated what their witness terms a Market Risk Premium of 6.5%-8.0% as an adjustment. This represents the risk that investors take by investing in stocks instead of risk-free Treasury bills. (ME/PE St. 8 at 28-30). The Companies argued that because of this greater risk, the Commission should allow a higher return on equity.

The Companies also advocated an adjustment to recognize financial risk. The underlying principle is that an equity investor intrinsically faces increased financial risk as the proportion of debt used to finance an investment increases. MEPN stated that applying this principle to determine the cost of equity involves two steps: (1) determine a market-derived overall cost of capital for a proxy group of companies of comparable business risk; and (2) use that overall cost of capital to derive the subject company's cost of equity by substituting its regulatory capital structure in the equation. According to MEPN, the two steps together recognize both business and financial risk and bring the Companies' cost of equity to a level that represents the rate of return that investors could expect to earn elsewhere without bearing more risk. (MEPN St. 8-R at 38).

The OCA used a cost of common equity analysis in which it relies on the Discounted Cash Flow (DCF) methodology, checked by a CAPM analysis, to recommend a 9.7% return on common equity for each company. When combined with its recommendation on capital structure and cost of debt, this produces an overall rate of return of 7.33% and 7.72% for MEPN, respectively. According to the OCA, the Commission has stated on numerous occasions that it prefers using the DCF method. The OCA admits that its recommendation is at the low end of the reasonable range

because of what it characterizes as ME's and PN's ongoing service problems that affect customers. (OCA St. 4 at 5).

To estimate the cost of equity, the OCA used a proxy group of similar companies, because as wholly-owned subsidiaries of FirstEnergy without publicly-traded stock, the market valuations for MEPN are unknown. (OCA St. 4 at 18). The OCA selected eight companies for its proxy group that: (1) are located in the Mid-Atlantic or Northeast; (2) are members of Regional Transmission Organizations; and (3) have divested most or all of their generation assets, thus operating primarily as delivery service utilities. (OCA St. 4 at 19 & Sch. MIK-3). According to the OCA, the capital structures of this group are similar to that of the Companies, and the average common equity ratio for the OCA's proxy group is 44.6%, a close match to the 49% that is being used for the Companies. (OCA St. 4 at 19, 20 & Sch. MIK-3).

Regarding the dividend yield (D_0/P_0) component in the DCF analysis, the OCA used a 4.9% DCF adjusted yield, based upon the 4.79% dividend yield of the proxy group of similar companies and assuming a half-year growth of 2.5% and a full year growth of 5%. (OCA St. 4 at 21).

Regarding the estimate for the growth rate (g) component of the DCF analysis, the OCA averaged the latest data for its group of proxy companies from four well-known sources of projected earnings growth rates, First Call, Zacks, Standard & Poors (S&P) and Value Line. (OCA St. 4 at 22-23 & Sch. MIK-5). This average of 5.19% represents the upper end of the OCA's growth rate, where the median five year growth rate for the group is 4.7% and the average was artificially inflated by growth rates of 10-11% of one company with a history of slow growth. (OCA St. 4 at 23 and Sch. MIK-5). The OCA's analysis determined that the DCF for its proxy group should result in a cost of equity in the range of 9.6% to 10.1% with a midpoint of 9.85%. (OCA St. 4 at 24).

Based on the above analyses, the OCA found a range for a return on equity of 9.6% to 10.1%. (OCA St. 4 at 24 & Sch. MIK-5). The OCA recommended a return on equity of 9.7% for each of the Companies, at the low end of the reasonable range, due to the Companies' ongoing service quality problems that affect ratepayers. (OCA St. 4 at 5). The OCA contended that MEPN have a long history of failing to achieve reliability standards. In support of its contention, the OCA referred to the Commission's investigation into this issue. *Investigation Regarding the Metropolitan Edison Co., Pennsylvania Electric Co., and Pennsylvania Power Co.'s Reliability Performance*, Docket No. I-00040102 (Order entered November 4, 2004). The OCA pointed out that the Companies have not yet fully achieved the agreed upon standards for reliability or key customer service metrics set forth in the settlement of that proceeding. The OCA concluded that because the Companies have failed to achieve reliability and service quality standards consistent with their obligations, their failure should be recognized in the rate of return.

The OTS also employed the DCF methodology to calculate the cost of common equity. The OTS recommended a 9.75% cost of common equity for MEPN as calculated by the application of the market based DCF. This leads to an overall rate of return of 7.38% for ME and 7.75% for PN. The OTS asserted that this methodology has traditionally been endorsed by this Commission and its continued use is warranted in this proceeding. To properly compute the components of the DCF method, the OTS utilized current, historical and forecasted market data for three different entities. (OTS St. 1).

The OSBA did not perform any calculation to arrive at a cost of equity recommendation. Rather, the OSBA advocated the recommendations of either the OTS or the OCA, given both Companies' poor reliability performance. Like the OCA, the OSBA refers to the Commission reliability investigation at Docket No. I-00040102. The

OSBA asserted that both MEPN have failed to achieve the level of performance to which they agreed in the settlement of the investigation. (OSBA St.1)

The OCA, the OSBA and the OTS all objected to the adjustments advocated by MEPN to recognize financial risk.

The Companies rejected the positions of the other Parties asserting that alleged reliability deficiencies should reduce the return on equity. The Companies argued that their reliability is improving. (ME/PE St. 18R (Revised) at 19-21). The Companies also asserted that they have expended significant amounts to improve overall reliability. The Companies contended that reducing the return on equity on this basis would be counter-productive because it would reduce the dollars available to the Companies to fund reliability improvements and perform maintenance functions.

2. ALJs' Recommendation

The ALJs recommended adoption of the OCA's position. The ALJs noted that while other methods can be used as a check on the results arrived at by use of the DCF method, the Commission has long favored use of the DCF method, tempered by informed judgment. The ALJs referenced the Commission Order at *PA Public Utility Commission v. Pennsylvania-American Water Co.*, Docket No. R-00016339, (Order entered January 25, 2002), as support for this position. Additionally, the ALJs stated that because of its strengths, and with its weaknesses ameliorated by informed judgment, primary reliance on the DCF method by the Commission is in the public interest. (R.D. at 125-127).

Furthermore, the ALJs found that MEPN have been unable to achieve reliability standards. The ALJs agreed with the Parties that the Companies have failed to achieve reliability and service quality standards consistent with their obligations and this

should be reflected in the approved rate of return. As a result, the ALJs recommended that the MEPN returns on equity should be 9.7%. (R.D. at 128-129).

Based upon the testimony and evidence of record, the ALJs recommended the following overall rate of return for each Company:

ME

Capital Type	Percent of total cost (%)	Cost Rate (%)	Weighted Cost (%)
Long-term Debt & Allocation Of Parent Debt	51	5.051	2.58
Preferred Stock	0	0	0
Common Equity	49	9.7	4.75
<i>Total</i>	<i>100</i>		<i>7.33</i>

PN

Capital Type	Percent of total cost (%)	Cost Rate (%)	Weighted Cost (%)
Long-term Debt & Allocation Of Parent Debt	51	5.83	2.97
Preferred Stock	0	0	0
Common Equity	49	9.7	4.75
<i>Total</i>	<i>100</i>		<i>7.72</i>

3. Exceptions

In its Exceptions, MEPN argues that the 9.7% return on equity recommended by the ALJ is 100 basis points lower than the return on equity deemed reasonable two years ago for another electric utility in Pennsylvania in *Pa. PUC v. Pennsylvania Power and Light*, Docket No. R-00049255 (Order entered December 22, 2004). This is so even though interest rates have increased since that time, opines the Companies. MEPN states that the ALJs' recommendation is inadequate and unreasonable due to several significant errors. MEPN notes that the ALJs failed to

recognize the impact of financial risk, failed to recognize that MEPN's business risk is greater than that of the proxy group because of the burden imposed by their POLR responsibility, failed to give any consideration whatsoever to alternative analyses such as risk premium or CAPM, failed to reflect application of informed judgment and improperly reduced the allowed return based on alleged poor reliability. MEPN avers that application of Commission precedent to the facts here warrants a move upward from the market derived baseline cost of equity to reflect financial risk, increased business risk and consideration of alternative analysis and informed judgment. (MEPN Exc. at 33-37).

MEPN states that the reduction in allowed return based on alleged poor reliability is improper. The Companies aver that the ALJs erroneously stated that they missed 2005 reliability targets by 70-100 minutes (R.D. at 230) because that target is a comparison to a goal set by the Reliability Settlement for year end 2007, not 2005. MEPN avers that they are, in fact, trending to meet that goal, having already spent \$282 million on reliability improvements in 2005. Also, MEPN notes that the ALJs fail to consider properly the evidence in MEPN's Joint 2nd Quarter Service Reliability Report²¹ that shows that reliability is improving. Additionally, MEPN avers that in 2005, they met 95% of the requirements of the Reliability Settlement.²² As further evidence of improved reliability, the Companies claim that ME has experienced a 53% reduction in service quality complaints and PN has realized a 44% reduction.²³ MEPN rejoins that reducing their rate of return based on a flawed perception of poor performance will only impair their ability to continue reliability related spending. They request that the better approach is to follow the process already agreed upon in the Reliability Settlement. (MEPN Exc. at 37).

²¹ OCA Cross Exh. 8, App A.

²² MEPN St. 18-R (Revised).

²³ MEPN MB at 72.

In reply, the OCA rejoins that the Companies arguments are without merit. First, the OCA avers that its witness demonstrated that the Companies proposed financial risk adjustment is a conceptual argument that may only be valid in a non-regulated setting. The OCA also notes that even if the concept were to be considered valid, the overall business and financial risk of the proxy group on average is very close to that of the Companies in this case, so that no adjustment would be necessary. Second, the OCA refers to the Companies argument that their greater business risk compared to the proxy group should be recognized and increase the ROE allowance by 25 basis points. The OCA avers that the Companies failed to develop this issue on the record and have failed to show that they have any above-average risk pertaining to their distribution service as compared to the proxy group. As a result, the OCA opines it must be rejected as wholly unsupported by the evidence. (OCA R.Exc. at 21-24).

Furthermore, the OCA notes that the Companies arguments that the ALJs erred by reducing the cost of equity based upon poor reliability are incorrect. First, the OCA notes that this will not affect reliability related spending as these dollars are expense dollars that are fully reflected, without adjustment, in the Companies revenue requirement. Second, the OCA avers that the ALJs did not reduce the ROE but found that the lower end of the range of reasonableness was more appropriate. Third, the OCA claims that the Companies failed to meet service quality thresholds set forth in settlement. It points out that both MEPN failed to achieve actual year-end 2005 SAIDI that were required by the Settlement, and instead recorded SAIDI measurements that indicated worsening reliability. The OCA requests that the ALJs' recommendation for a ROE set at the lower end of the reasonable range should be adopted by the Commission. (OCA R.Exc. at 24-25).

The OTS replies that the Companies' Exceptions lack foundation in the record and should be dismissed. The OTS avers that the Companies mistakenly believe that a prior Commission decision has somehow established the minimum return on equity

allowance for the entire industry. The OTS avers this error is further exacerbated by an unsupported claim with respect to interest rates and their relative impact on the calculation of a return on common equity allowance. According to the OTS, it is a well established axiom that utility regulation in Pennsylvania is based on the facts of a specific proceeding and that precedent merely establishes a benchmark as to the regulatory treatment of a particular issue, it does not create a specific standard upon which all subsequent cases must depend. Additionally, the Companies statement concerning interest rates is unsupported in the record and is faulty as the OTS witness testified that long term bond rates are at historic low levels and are expected to remain relatively stable. (OTS R.Exc. at 19-20).

Next, the OTS states that the Commission's long-standing acceptance of the DCF method as the preferred method of determining an appropriate return on equity is not disputed in this proceeding. The OTS explains that the DCF method takes into account several factors in the determination of the fair rate of return: (1) preferences of investors; (2) equity financing; (3) risk; and (4) inflation. It opines that the Companies' myriad of adders and adjustments are unnecessary as the DCF method inherently accounts for these influences in its determination. According to the OTS, additional adjustments to a properly calculated equity allowance based on the DCF method would result in certain economic factors being counted twice which is improper and should be rejected. (OTS R.Exc. at 20-22).

The OTS further rejoins that the Companies' Exceptions mischaracterize the Recommended Decision with respect to the role of reported poor reliability in the rate of return calculation. Contrary to the Companies' erroneous assertion that its rate of return was reduced, the ALJs properly determined that the rate of return calculation must include consideration of the reliability shortcomings of the Companies. There was no stated reduction to the DCF findings per the Companies, as the ALJs' resulting recommendation remained within the range of DCF results calculated by the intervening

Parties. OTS avers that the higher end of the calculated results is simply not warranted based on the record in this proceeding. (OTS R.Exc. at 22-23).

The OSBA also replies that the ALJs did not err in reducing ME's and PN's rate of return based on their poor reliability. The OSBA avers that despite the Companies' effort to portray their reliability in a favorable light, both Companies' reliability has been, and continues to be, far below adequate. The OSBA notes that both Companies' SAIDI scores are worse now than they are required to be at year-end 2007, that ME's SAIDI score is worse now than it was at year-end 2003, that ME does not meet the Commission standard for SAIDI, that both Companies' SAIFI scores are worse than the Commission standard and benchmark and that both Companies' CAIDI scores do not meet the Commission benchmark. Despite these shortcomings, the OSBA notes that the Companies are advocating upward adjustments in the calculated DCF results to reflect claimed financial and business risks. The OSBA opines that it would be inconsistent to approve any upward adjustments to compensate stockholders when the Companies' ratepayers have been forced to accept inadequate service. (OSBA R.Exc. at 8-10).

4. Disposition

As noted previously, we have primarily relied upon the DCF methodology in arriving at our determination of the proper cost of common equity. However, we agree with the ALJs' statement that other methodologies can be used as a check on the reasonableness of the results arrived at by the use of the DCF method, tempered by informed judgment. We note that both the Companies and the OCA have done so in the instant proceeding. We will also use the results of the CAPM and ECAPM methods as a check of the reasonableness of our DCF derived equity return calculation.

Based upon our analysis and review of the record evidence, the Recommended Decision and the Exceptions and Replies thereto, we reject the ALJs'

recommendation to adopt the low end of the OCA's unadjusted DCF return of 9.7%. We note that the OCA recommended a return on equity range from 9.6% to 10.1%, but utilized a point near the lower end of the range due to the Companies ongoing service quality problems. While we acknowledge that the Companies have experienced reliability problems in the past and have been subject to a Commission investigation, we do not agree with the ALJs that it is necessary to reflect this situation by going to the lower end range of equity return.

Other factors must be considered in this proceeding. Based upon the evidence of record, we find that the OCA's recommended range of reasonableness from 9.6% to 10.1% is appropriate. We conclude that within that range, a cost of common equity of 10.1% is reasonable and appropriate to incorporate into our return determinations under the circumstances of this proceeding. This recommendation is based upon the high end of the OCA recommended range of reasonableness giving deference to the business risk faced by the Companies under the current electric industry environment and to the cost of equity results from the other methodologies, as well as recent Commission precedent. We note that the OTS recommended a range of reasonableness from 9.5% to 10.0% based upon the DCF methodology. The Companies DCF calculations, adjusted to remove their financial risk adders, resulted in a range of reasonableness from 9.3% to 10.3%. Also, the OCA calculated the range of reasonableness based on the CAPM methodology from 9.2% to 11.0%, while the Companies CAPM calculations indicated a range from 10.8% to 12.5%. Based upon these findings, we are of the opinion that an equity return of 10.1% is reasonable.

Accordingly, the Exceptions of MEPN are granted, in part, and denied, in part, to the extent consistent with the foregoing discussion.

The following table summarizes our determinations concerning the Companies’ capital structure, cost of debt and cost of common equity, as well as the resulting weighted costs and overall rate of return:

ME			
Capital Structure	Ratio	Cost Rate	Weighted Cost
	(%)	(%)	(%)
Debt	51.00	5.051	2.58
Common Equity	49.00	10.1	4.95
	100.00		7.53

PN	Ratio	Cost Rate	Weighted Cost
	(%)	(%)	(%)
Capital Structure			
Debt	51.00	5.83	2.97
Common Equity	49.00	10.1	4.95
	100.00		7.92

X. COST OF SERVICE

A. ALJs’ Interpretation of *Lloyd v. Pa. PUC*, 904 A.2d 1010 (Pa. Cmwlth. 2006), Petitions for Allowance of Appeal Pending

1. Positions of the Parties

The Companies submitted unbundled cost of service studies (COSS) based on data gathering systems (AM/FM, CREWS) and analytics (TACOS Gold) that allocate generation, transmission, and distribution system costs to establish a revenue requirement for each customer rate schedule. (MEPN M.B. at 77; MEPN St. 5 at 4; MEPN St. 5-R at 6-7). MEPN claims that this is consistent with the Commonwealth Court’s determination in *Lloyd v. Pa. PUC*, 904 A.2d 1010 (Pa. Cmwlth. 2006), petitions for allowance of

Exhibit 37

1988 Pa. PUC LEXIS 407; 67 Pa. PUC 91; 93 P.U.R.4th 189

Pennsylvania Public Utility Commission

May 03, 1988

R-870732

Reporter

1988 Pa. PUC LEXIS 407 *; 67 Pa. PUC 91; 93 P.U.R.4th 189

Pennsylvania Public Utility Commission v. Pennsylvania Power Company

Core Terms

recommend, plant, defer, rate base, customer, load, block, valve, phase-in, energy, calculate, ratepayer, electric, dividend, annual, depreciate, estimate, charcoal, premium, modify, fuel, carrying charges, ratemaking, growth rate, amortize, nuclear, outage, tariff, peak, barometer

Counsel

James R. Edgerly, Esquire, Stephen L. Field, Esquire, 1 East Washington Street, P.O. Box 891, New Castle, PA 16102-0891, For Respondent

Alan L. Reed, Esquire, Thomas P. Gadsden, Esquire, Jack E. Jerrett, Morgan, Lewis & Bockius, 2000 One Logan Street, Philadelphia, PA 19103, For Respondent

Alan P. Buchmann, A. E. Korkosz, H. J. Nicols, Squire, Sanders & Dempsey, 1800 Huntingdon Bldg., Cleveland, OH 44115, For Respondent

Dennis P. Harkwaik, 520 Madison Avenue, New York, NY 10022, For Respondent

Scott J. Rubin, Joan C. Fitzpatrick, Marlane Chestnut, Christine Maloni, 1420 Strawberry Square, Harrisburg, PA 17120, For Office of Consumer Advocate

Wayne T. Scott, Carol F. Pennington, P.O. Box 3265, Harrisburg, PA 17120, For Office of Trial Staff

Michael P. Kerrigan, Esquire, 214 State Street, Harrisburg, PA 17101, For Hospital Council of Western PA

Charles R. Cornelius, Esquire, P.O. Box 270, Farrell, PA 16121, For Sharon Steel Corporation

Thomas J. Fee, House of Representatives, P.O. Box 81 - Main Capital Bldg., Harrisburg, PA 17120

Hon. [*2] Michael C. Gruitza, House of Representatives, House Pose Office - Main Capitol, Harrisburg, PA 17120

Panel: Commissioners Present: Bill Shane, Chairman, dissenting in part; William H. Smith, Vice-Chairman; Linda C. Taliaferro; Frank Fischl

Opinion

OPINION AND ORDER

BY THE COMMISSION:

VII. RATE OF RETURN

A. Introduction

Before commencing a discussion of the evidence before us regarding [*183] the appropriate cost of common equity, we shall engage in our customary review of the legal standards which are relevant to such determination.

A public utility is entitled to an opportunity to earn a fair rate of return on the fair value of its property. Pennsylvania Gas & Water Co. v. Pa. P.U.C., 19 Pa. Commonwealth Ct. 214, 341 A.2d 239 (1975); Keystone Water Company White Deer District v. Pa. P.U.C., 19 Pa. Commonwealth Ct. 293, 302, 330 A.2d 873, 877 (1975); Riverton Consolidated Water Co. v. Pa. P.U.C., 186 Pa. Superior Ct. 1, 140 A.2d 114 (1958). Rate of return can be defined as:

. . . the amount of money a utility earns, over and above operating expenses, depreciation expense, and taxes, expressed as a percentage of the legally established net valuation of utility property, the rate base. Included in the 'return' are interest on long-term debt, dividends on preferred stock, and earnings on common equity. In other words, the return is the money earned from operations which is available for distribution among the various classes of contributors of money capital.

Public Utility Economics, Paul J. Garfield and Wallace F. Lovejoy (1964), at 116. The return authorized [*184] must not be confiscatory, and must be based upon the evidence presented. Pittsburgh v. Pa. P.U.C., 165 Pa. Superior Ct. 519, 69 A.2d 844 (1949).

Although it is acknowledged that the fair rate of return and cost of capital are not always synonymous, we consider the "cost of capital" approach to be one of the important bases upon which a fair rate of return is determined. Lower Paxton Twp. v. Pa. P.U.C., 13 Pa. Commonwealth Ct. 135, 317 A.2d 917 (1974); Pa. P.U.C. v. Duquesne Light Company, 54 Pa. PUC 695 (1981). In availing ourselves of this generally accepted method of arriving at a fair rate of return, we, the ratemaking authority, first examine the utility's capital structure to identify the sources of the utility's capital and accompanying ratios. We then ascertain the cost of each component; namely, the cost of debt, determined essentially by the annual interest requirement of the utility's bonds, the cost of preferred stock, and the cost of common stock (common equity), determined by the return required to sell such stock upon reasonable terms in the market. Pa. P.U.C. v. The Bell Telephone Company of Pennsylvania, 57 Pa. P.U.C. 639 (1983); Pa. P.U.C. v. Pennsylvania Power Company, 55 Pa. P.U.C. 552 (1982).

Regardless of the procedure employed in determining fair rate of return, we must exercise "informed judgement". As we stated in Pennsylvania Power:

The return finding should consider the financial costs being incurred, so that the utility has the opportunity to recover its present cost of capital or to attract needed capital at reasonable cost. A fair rate of return for a public utility, however, is not a matter which is to be determined by the application of a mathematical formula. It requires the exercise of informed judgement based upon an evaluation of the particular facts presented in each proceeding. There is no one precise answer to the question as to what constitutes a proper rate of return. The interests of the company and its investors are to be considered along with those of the customers, all to the end of assuring adequate service to the public at the least cost, while at the same time maintaining the financial integrity of the utility involved. (Emphasis supplied).

Id at 579. Moreover, we must adhere to the legal constraints which guide our decision.

In the landmark case of Bluefield Water Works and Improvement Co. v. Public Service Commission of West Virginia, 262 U.S. 679 (1923), the United States Supreme Court addressed the issue of fair rate of return for a public utility. In Bluefield, the Court stated:

What annual rate will constitute just compensation depends upon many circumstances and must be determined by the exercise of a fair and enlightened judgement, having regard to all relevant facts. A public utility is entitled to such rates as will permit it to earn a return on the value of the property which it employs for the convenience of the

public equal to that generally being made at the same time and in the same general part of the country in investments in other business undertakings which are attended by corresponding risk and uncertainties; but it has no constitutional rights to profits such as are realized or anticipated in highly profitable enterprises or speculative ventures. The return should be reasonably sufficient to assure confidence in the financial soundness of the utility and should be adequate under efficient and economical management, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties. A rate [*187] of return may be reasonable at one time, and become too high or too low by changes affecting opportunities for investment, the money market, and business generally.

Id. at 692-693.

In establishing the standards to be applied in implementing the Federal Natural Gas Act, the United States Supreme Court, in *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S. 591 (1944), said:

The rate-making process, under the Act, i.e., the fixing of "just and reasonable" rates, involves a balancing of the investor and the consumer interest . . . "[R]egulation does not insure that the business shall produce net revenues." (Citations omitted)

But such considerations aside, the investor interest has legitimate concern with the financial integrity of the company whose rates are being regulated. From the investor or company point of view it is important that there be enough revenue not only for operating expenses but also for the capital costs of the business. These include service on the debt and dividends on the stock. By that standard the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. The return, moreover, [*188] should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital.

Id. at 603.

As noted in these cases, we are required to approve as just and reasonable, rates which will produce revenue sufficient to enable the utility to recover all reasonable operating and maintenance expenses, depreciation and taxes. Additionally, the utility is entitled to have an opportunity to earn a fair rate of return on the capital invested in the enterprise. *Pa. P.U.C. v. North Penn Gas Company*, 55 Pa. P.U.C. 425 (1981). We stated in *Pa. P.U.C. v. Philadelphia Electric Co.*, 52 Pa. P.U.C. 772 (1978):

Among the factors to be considered in determining a fair return are (1) the earnings which are necessary to assure confidence in the financial integrity of the utility and to maintain its credit standing; (2) the payment of dividends and interest; and (3) the amount of the investment, the size and nature of the utility, its business and financial risks, and the circumstances attending its origin, development and operation.

Id. at 808.

Finally, we must engage in an appropriate balancing of the rates charged to the customers, [*189] for the services provided, with the return to which investors in the enterprise are entitled to have an opportunity to earn.

B. Capital Structure

The Company proposed a capital structure of: (1) 48.4% debt; (2) 14.2% preferred stock; and (3) 37.4% common stock, which represents its estimated capital structure as of April 30, 1988, the end of the future test year. No party took issue with the Company's proposal. The ALJ recommended its adoption.

We find the proposed capital structure to be reasonable and economical and, therefore, perceiving no reason to consider the use of a hypothetical capital structure, we adopt such capital structure for the purpose of determining a fair rate of return in this proceeding.

C. Cost of Debt

The Company claimed an estimated April 30, 1988, debt cost rate of 10.15%. No party took issue with this claim. The ALJ recommended that we adopt the Company's proposed cost rate. We find the Company's projected cost rate of 10.15% to be reasonable and, accordingly, adopt it for use in this proceeding.

D. Cost of Preferred Stock

The Company claimed a projected preferred stock cost rate of 9.89%, as of April 30, 1988. No party took issue [*190] with this claim. The ALJ recommended that we adopt the Company's proposed cost rate. We find that the Company's projected cost of rate of 9.89% to be reasonable and, accordingly, adopt it for use in this proceeding.

E. Cost of Common Equity

Testimony on the subject of the cost of common equity was presented by Paul R. Moul, Vice-President, Associated Utility Services, Inc., on behalf of the Company; Dr. Matiyahu Marcus, Professor of Economics, Rutgers University, on behalf of the Office of Consumer Advocate; and Mr. John J. Steslow, Supervisor, Rate of Return Section, Office of Trial Staff, on behalf of that office.

When addressing the issue of the cost of equity, we have come to expect a wide range of cost estimates. Therefore, the controversy which is present here is to be expected. Due to the extensive record developed on this issue, we shall not be able to note or comment on every point, observation, supporting argument or criticism presented by the parties. However, this does not mean that we have not considered material which is not specifically addressed in the discussion below.

The following table and footnotes, provided by the ALJ at page 14 of his Recommended [*191] Decision, Summarize the methodologies, conclusions and recommendations of the various witnesses:

Methodology	Penn		
	Power ¹	OCA ²	OTS ³
	%	%	%
Discounted Cash Flow	14.25	12.25	11.65-12.5
Risk Premium	15.25		
Capital Asset Pricing Model			13.05
Earnings/price ratio			12.5 -13.5
Recommendation	14.75	12.25	12.5 -13.0

* Penn Power, OCA and OTS have all adjusted the dividend yields of their respective DCF calculations to reflect next period growth (Penn Power Statement 4, p. 40; OCA Statement 1, p. 20; and OTS Statement 1, pp. 12-13). Penn Power adjusted its DCF by 25 basis points to reflect investment risk differences (Penn Power St. 4, p. 56). OTS adjusted the dividend yield component of its DCF calculation to reflect market pressure and selling expense (OTS St. 1, p. 13).

1. Comparison Companies or Groups

Mr. Moul employed a barometer group [*192] of five companies, based upon the following criteria:

1. SIC Code of 4911 (electric service) or 4931 (electric and other services combined);
2. actively traded common stock;

3. have not reduced or eliminated dividends on common stock;
4. operate in Pennsylvania, Ohio, or New York;
5. have at least 85% of their 1986 operating revenues from electric sales; and
6. have a major generating plant construction program.

These criteria yield the following five companies: Centerion Energy Corp.; Central Hudson Gas & Electric Corp.; New York State Electric & Gas Corp.; Ohio Edison Company; and Philadelphia Electric Company. Mr. Moul also looked to certain data pertaining to the Standard & Poor's 21 Electrics and Standard & Poor's 40 Public Utilities.

OTS witness Steslow utilized a barometer group of 6 electric utilities, consisting of: Centerion Energy Corp.; Central Hudson Gas & Electric Corp.; Duquesne Light Company; New York State Electric & Gas Corp.; Niagara Mohawk Power Corp.; and Philadelphia Electric Company. The primary consideration in Mr. Steslow's selection of his barometer group was "involvement in nuclear power generation to some degree since Penn Power's [*193] partial ownership of Perry 1 has had a major impact in its cost of capital" (OTS St. No. 1, p. 8). Mr. Steslow also noted that comparability of the six companies with Ohio Edison was demonstrated by the fact that the average of the company betas is .75, identical to that of Ohio Edison. He additionally noted that Value Line's average ranking for the six companies is 4/4 while the Ohio Edison ranking is 3/4 (OTS St. No. 1, p. 9).

Dr. Marcus utilized a group of 79 electric utilities consisting of "all electric utilities listed on the New York Stock Exchange which are also covered by Value Line, excluding utilities which have reduced or eliminated their common stock dividends" (OCA St. No. 1, p. 8).²⁷ Dr. Marcus utilized a large group because he is of the view that there is no agreement for identifying utilities which can be deemed of equal risk and, as a consequence, selection criteria which are formulated for a particular proceeding may produce a biased group.

2. Discounted Cash Flow

In this proceeding all three analysts have performed analyses utilizing the discounted cash flow methodology. The basic formula is: [*194] $k = D / p + g$, where k is the investors capitalization rate (or cost of capital), D is the current dividend, P is the current market price, and g is the anticipated future growth rate of dividends.

The DCF analysis is a market-based technique which is founded upon the principle that the amount an investor will pay for a share of common stock is based upon the present value of anticipated future dividends and appreciation in market price. Pa. P.U.C. v. Dauphin Consolidated Water Supply, 55 Pa. P.U.C. 44 (1981); Pa. P.U.C. v. Pennsylvania Power Company, 55 Pa. P.U.C. 552 (1982). In theory, the DCF method analyzes what an investor expects to receive, as opposed to what he would like to receive, as a return on the investment made.

The DCF methodology is not without its infirmities. The Market price of a stock reflects both the current and future investor expectations regarding growth in earnings, and, hence dividends. Therefore, a separate consideration of growth rates, either in earnings, dividends, or book value (reflective of earnings retention) could result in the duplication of a growth estimate which is already reflected, in part at least, in market price. Moreover, normally [*195] market price will also reflect present inflation and an assumption regarding future inflation. Pa. P.U.C. v. Pennsylvania Power Company, supra.

It should also be noted at the outset that there are a number of implicit assumptions in this methodology. First, that the payout ratio will remain constant over time, in order that the rate of growth of dividends will track or equal the growth of earnings. Second, that the price/earnings ratios will remain constant, or at least be the same at the time of sale as the time of purchase.

a. Mr. Moul

Mr. Moul developed a five year (1982-1986) average dividend yield for his barometer group of 12.1%. The 12 month yield for the period ending June 1987 was 9.8%. Mr. Moul adjusted this yield by one-half of his derived growth rate (or 2%) and derived an adjusted yield of 10.0% ($9.8 \times 1.02 = 10.0\%$).²⁸

[*196]

In order to develop a growth rate Mr. Moul looked to Value Line and the Institutional Brokers Estimate System ("IBES") a service of Lynch, James & Ryan, a New York Stock Exchange member securities broker service. IBES provides data on consensus earnings per share forecasts and five year earnings growth rate estimates. Mr. Moul's growth rate estimates appear in his Schedule 11 and the averages for his barometer group are as follows: (1) IBES mean (1.15%), median (1.98%); and (2) Value Line's dividends per share average of (-0.7%) and percentage retained to common equity of +2.8%. With regard to his barometer group Mr. Moul also looked at five-year average compound growth rates in dividends per share of +4.1% (Schedule 12).

By a process which is far from clear to us, Mr. Moul settled upon a 4% growth rate to use in his DCF analysis, for a DCF indicated cost of capital of 14.0%.

Mr. Moul, however, was not finished. He advocated an upward adjustment of his 14.0% result, by 25 basis points to account for Penn Power's substantially lower common equity ratio and, hence, its significantly greater financial risk. Thus the result of his DCF analysis was, in fact, 14.25%.

Mr. [*197] Moul later stated that, between the time that his direct testimony was prepared in July 1987, and the time of his cross examination in October 1987, the cost of capital increased substantially, and that if conditions remained the same he would be inclined to raise his original equity recommendation by a full percentage point (TR., p. 7).

During the rebuttal phase, by merely updating his dividend yield to reflect the then most recent 12 month period for the barometer group, he produced a DCF indicated cost of common equity of 15.0%, before the 25 basis point adjustment for the cost associated with Penn Power's lower equity rates. This resulted in a 15.25% DCF indicated cost of common equity determination by Mr. Moul.

b. Mr. Steslow

Mr. Steslow developed dividend yields for the 12 months ending September 30, 1987 and a spot yield as of the date for both his barometer group and for Ohio Edison. These were as follows:

	12 months	Spot
Barometer Group Average	10.3	10.08
Ohio Edison	9.4	9.5

Mr. Steslow utilized the 12 month average yields in his DCF analysis. When adjusted by one-half of his adopted growth rate, the yields for the barometer group and Ohio Edison [*198] became 10.4% and 9.5%, respectively.

Mr. Steslow also adjusted the dividend yields by 1.5% to reflect market pressure and selling expense and the yields, thus, became 10.56% (10.40 divided by .985 = 10.56%) and 9.64% (9.50 divided by .985 = 9.64%), respectively.

In order to determine an appropriate growth rate Mr. Steslow looked to Value Line for both historic and projected growth rates for the barometer companies and for Ohio Edison. He also looked at the five year growth forecasts of earnings by IBES. With regard to future growth, Value Line estimates that the average earnings of the barometer group will grow at a negative 1.4% rate and the average dividends will grow at a negative 1.5% rate for the period 1984-86 to 1990-92. Similar data for Ohio Edison is an earnings growth rate of 1.5% and a dividend growth rate of 2.0%. The IBES estimates an average growth in earnings for the barometer group of 1.07% and for Ohio Edison of 1.55%.²⁹

Based upon an average forecast of an IBES growth rate in earnings of 1.07% for the barometer group, and an average historic 10 year growth rate in earnings of 3.7% and an average historic [*199] 10 year growth rate in dividends of 3.9%, he settled upon a growth in divided rate of 2.0%.³⁰

Combining his adjusted dividend yield of 10.56% for the barometer group with his adopted growth in dividend rate of 2.0%, yielded a DCF indicated cost of common equity for the barometer group of 12.56%.

Using Ohio Edison as a proxy for Penn Power, Mr. Steslow combined his adjusted dividend yield of 9.64% with a growth in dividend rate of 2.0%, resulting in a DCF indicated cost of common equity for Ohio Edison of 11.64%.

c. Dr. Marcus

With regard to Ohio Edison Dr. Marcus found a 9.4% dividend yield for the 12 months ending September 1987. He also indicated that the yield could increase by 0.1% if the October 1987 dividend yield were included. He adjusted this yield by one-half of his adopted growth rate to 9.62% ($9.5\% \times 1.013 = 9.62\%$), in order to reflect the projected increase in dividends in the first year.

With respect to an appropriate growth rate Dr. Marcus chose not to rely upon historic trends but, rather, focused upon retained [*200] earnings growth and industry analysts' growth projections. Based upon the period 1981-1986, Dr. Marcus found an average earnings on common equity of 14.7% for Ohio Edison. Combining this with an average retention rate of 0.22, yielded a retained earnings indicated growth rate of 3.23%. During the same period, the average earnings on common equity for the industry as a whole was 14.2%, which, when comined with a retention rate of 0.29, resulted in a retained earnings indicated growth rate of 4.12% (Schedule MM-16). The 1986 growth rates for Ohio Edison and the industry were 3.28% and 3.95%, respectively.

Turning to analysts' growth projections for Ohio Edison, Dr. Marcus found that IBES consensus forecast for September 1987 was 1.5%, which reflects the estimates of 14 individual analysts.

Considering the retained earnings growth rate range of 3.2% to 3.8% and the IBES projection of 1.5%, Dr. Marcus settled upon a growth rate of 2.6%. Combining his adjusted dividend yield of 9.62% and his adopted growth rate of 2.6%, resulted in a DCF indicated cost of common equity of 12.22%, which Dr. Marcus rounded to 12.25%.

Dr. Marcus conducted a similar analysis for the electric industry [*201] as a whole and determined at a cost of 12.0%. In doing so, he utilized an adjusted dividend yield for the 12 months ending September 1987 of 7.5%. Using the same methodology employed for Ohio Edison, he settled upon a growth rate of 4.5%. The combination of these two inputs total 12.0%.

Giving Penn Power the benefit of the highest of his two inputs, Dr. Marcus recommended a common equity cost rate of 12.25%.

3. Risk Premium

There are a variety of methods of conducting a risk premium analysis. Some analysts attempt to quantify a risk premium associated with an equity investment, over a risk free investment, such as a Treasury Bond. Other analysts quantify a risk premium associated with an equity investment over and above a fixed income security such as a utility bond. Mr. Moul, the witness for the Company, used the latter approach. He observed that for the 12 month and 1 month periods ending June 30, 1987, the yields on A-rated public utility bonds were 9.31% and 10.02% respectively. Mr. Moul also states that the forecast yield on A-rated public utility bonds for the 3rd and 4th quarter 1987 and the first three quarters of 1988 was approximately 10.0%, according to the [*202] July 1, 1987 Blue Chip Finanical Forecasts. Mr. Moul also demonstrated (Exhibit 4A, Schedule 8, page 5) that the 12 month average bond yield of his barometer group for the period ending June 1987, was 9.72%.

Mr. Moul concludes that the long term borrowing rate for Penn Power would be about 50 basis points higher, taking into consideration its lower bond rating (S&P -- BBB, Moody's -- Baaa3).³¹ Accordingly, he selected a bond yield of 10.5% to use in his risk premium analysis.

In order to determine the risk premium, Mr. Moul examined studies performed by Ibbotson and Singuefield. This review revealed that the spread between the return on electric utility common stocks and long term public utility bonds was 3.42%, on a geometric mean [*203] basis; 6.34% on a median basis; with the mid-point of that range

being 4.88%. This analysis encompassed the years 1928 through 1985. Utilizing a shorter period, that is, the years 1952-1985, the differential is 5.52%, on a geometric mean basis; 6.68% on a median basis; with a mid-point of that range of 6.60%. After looking at the S&P 40 Public Utilities, whose premium, on an arithmetic mean basis, is 5.37%, and electric utilities whose premium, on an arithmetic mean basis, is 5.78% ³², Mr. Moul concluded that an appropriate risk premium for Penn Power is 4.75%. Combining this risk premium with a prospective bond yield of 10.50%, determined as indicated above, Mr. Moul arrived at his 15.25% risk premium determined cost of common equity for Penn Power.

Subsequently, in his rebuttal testimony (PP St. 4-R, pp. 22-23), Mr. Moul noted that if more recent debt cost projections were used, i.e., December 1987, the comparable risk analysis would yield a cost of common equity for Penn Power of approximately 15.75%.

4. Capital Asset Pricing Model ("CAPM").

An additional analysis performance by OTS witness Steslow utilized the Capital Asset [*204] Pricing Model. Reduced to simple terms, the theory states that the expected return on equity is equal to the risk-free return, plus a premium for bearing risk. This description sounds almost identical to the theory underlying Mr. Moul's risk premium method. However, there is a difference in approach in determining the risk premium. First, rather than utilizing a segment of the market in measuring the premium of an equity return over a fixed income security such as a corporate bond, the risk premium under the CAPM method measures the risk premium of a well diversified portfolio (consisting of at least one share of all stocks traded in the market) over and above a risk free return (Treasury security), rather than a corporate bond. The second step is to adjust the result by the beta of the firm under consideration. ³³

The formula for CAPM may be stated as follows: $COEC = N + (B \times RP)$, [*205] where "N" is the riskless rate of return, B is the beta (in Mr. Steslow's presentation the average beta of his comparison group is .75), ³⁴ and RP is the risk premium (in Mr. Steslow's analysis, the risk premium developed in the Ibbotson-Singuefield studies for the period 1926-1986).

Mr. Steslow chose not to use long term treasury bonds of 20 years as the riskless rate, because to do so suggests that the investment horizon for most investors is 20 years. Noting that Ibbotson's yearbook designates the U.S. Treasury bill return as the risk free rate, he used the highest projected interest rate of six quarters of T-Bills ending with the December 1988 quarter, as projected by Standard & Poor's in their Outlook, dated August 1987. This rate is 6.60%. Mr. Steslow then developed a risk premium of 8.6% by subtracting the 3.5% arithmetic mean annual return for U.S. Treasury Bills from the 12.1% arithmetic mean annual return on common stocks (S&P 500) for the period 1926-1986. The CAPM formula is then solved as follows: $6.6\% + .75 (8.6\%) = 13.05\%$, resulting in Mr. Steslow's [*206] CAPM derived cost of common equity for Penn Power of that level.

5. Earnings/ Price Ratios

It has been a long time since we have had a cost of capital witness present an earnings/ price ratio analysis. Mr. Steslow quoted from an article in the March 12, 1979 issue of Fortune titled, "The Stock Market Should Be Twice As High As It Is", by way of explanation of the theory of earnings/ price ratios.

The market price of any stock is supposed to be equal to the present value of the future stream of the company's earnings. In essence, present value is determined by dividing current earnings by the capitalization rate -- or rate of return -- that seems appropriate. In effect, the capitalization rate is the reciprocal of the earnings multiple. A company that has a record of highly stable earnings may succeed in getting investors to accept a capitalization rate of, say, 8 percent. If that company earned a dollar a share, its stock would then sell at around \$12.50 -- twelve and a half times earnings. Another company whose earnings outlook was riskier might find investors investing on a capitalization rate of, say, 20 percent. Its earnings would therefore command a multiple of only [*207] five in the marketplace.

Mr. Steslow set forth on his Schedule 7, p. 2, of OTS Ex. No .1-A, a ten year historical comparison of the earnings price ratios of Ohio Edison and the six company barometer group for the years 1977 to 1986. He concluded from

the earnings/ price ratios shown there that investors have capitalized Ohio Edison somewhat more favorably than the barometer group (average), except for the years 1984 and 1985, where the barometer group average was 17.2% in 1984, and 15.5% in 1985, contrasted with 20.8% and 16.4% for Ohio Edison for those years. In 1986 the average was 12.6%, contrasted with 12.8% for Ohio Edison.

Mr. Steslow then prepared a schedule in which he undertook to discern the direction with investors have taken in their assessment of electric utility investments, as reflected in the barometer group and Ohio Edison (OTS Ex. No. 1-A, Sch. 7, p. 7). There he demonstrated that the 1986 earnings/ price ratios varied, on average, from 17.6 to 10.6% for the barometer group, based on the 1986 price range and earnings. For Ohio Edison the range of earnings/ price ratios was 15.5 to 11.0%. Based upon September 30, 1987 closing price and earnings for the 12 months [*208] ending June 30, 1987, the barometer group average price/earnings ratio was 15.4%, while that of Ohio Edison was 12.5%. A similar calculation using the September 30, 1987, closing price, and the 1987 earnings estimate of Salomon Brothers produced an average price/earnings ratio for the barometer group of 12.1%.

From his array of data Mr. Steslow arrives at a price/earnings ratio indicated cost of common equity, although he has not provided a rationale between his data and his conclusion.

Mr. Steslow advocated an adjustment to his earnings/ price ration conclusion, one percent for market pressure and one-half for selling expenses, even though knowledge of a new issue year in advance. ³⁵ This allowance has already been included by Mr. Steslow in his 12.5% to 13.5% earnings/ price ratio conclusion.

Having reached the following indication of the cost of common equity:

DCF	11.65 - 12.50%
CAPM	13.05%
E/P Ratio	12.50 - 13.50

Mr. Steslow arrived at a cost of common equity [*209] conclusion for Ohio Edison of 12.50-13.00%.

6. Discussion

Much of the briefing of the parties as well as the direct (in some instances) and the rebuttal testimony of the witnesses is devoted to critiques and criticisms of the evidentiary presentations of other parties. Based upon our review of these critiques, both as to the inherent flaws of various analytical methodologies, as well as to the particular method of application by a witness, we conclude that many of the criticisms are valid. We do not find it necessary, however, to review and comment upon these criticisms; if we were to do so, and reject all the evidence with is flawed in some manner, we could well find ourselves with no "unflawed evidence" to consider. We do assure the parties, however, that criticisms and critiques, whether contained in the briefs of the parties or in witness tesimony have been reviewed in great detail, and where found to have merit, we have accorded the evidence in question only such weight as we deem it deserving.

a. Discounted Cash Flow

The ALJ provided a table which summarized the DCF conclusions reached by Mr. Moul, Mr. Steslow and Dr. Marcus. We shall set forth this table below. [*210]

	Penn Power ¹	OCA ²	OTS ³
	%	%	%
Dividend Yield	9.8	9.5	9.4-10.3
Growth Rate	4.0	2.6	2.0
DCF Finding	13.8	12.1	11.4-12.2

The dividend yields set forth by the ALJ are the yields calculated by each analyst, without adjustment for one-half of his determined growth rate. All three analysts adjusted [*211] the dividend yield by one-half of his individually determined growth rate, to reflect the investor's anticipation of an increase in dividends and also to recognize the periodicity of dividends. In most, if not all, recent general rate increase proceedings, we have routinely adjusted dividend yields. This adjustment is, in effect, a refinement of the basic DCF formula, which we have set forth and described above, which is referred to as the "Gordon" model, so named for Myron J. Gordon, one of its ardent proponents in the mid-1950's.

The adjusted dividend yields determined by the analysts are: (1) Mr. Moul -- 10.0%; Mr. Steslow -- 9.5%-10.4%; and Dr. Marcus -- 9.62%. Dr. Marcus' 9.62% and Mr. Steslow's lower 9.5% figure, were both derived from data pertaining to Ohio Edison. We are inclined here to rely more upon a broader segment of the market as represented by Mr. Moul and Mr. Steslow's barometer groups, since there is a degree of circularity in determining a cost of common equity for Penn Power by only relying upon cost data applicable to its parent. We believe that an appropriately adjusted dividend yield to utilize in this proceeding, is in the range of 10.0%-10.4%. [*212]

For a growth factor we have a wide range from Mr. Steslow's 2.0% to Mr. Moul's 4.0% with Dr. Marcus toward the lower end of that range at 2.6%.

All of the analysts looked at historic growth rates and either IBES or Value Line projections, or both. In the case of Dr. Marcus, he calculated historic growth rates as indicated by retained earnings.

From an array of figures it seems that each analyst leaped to a growth rate conclusion, since no rationale leading from the data to a conclusion has been provided. Perhaps they were as confused as we, as to why, with historic growth approaching 4.0%, the IBES and Value Line forecasts reflect negative growth. We conclude that the forecasts reflect problems which the barometer group companies are expected to encounter, which is not apparent from the data furnished. With regard to Penn Power, with its nuclear construction program completed and the expectation that its future construction will be accomplished entirely with internally generated funds, we believe that an investor growth expectation in the range of 2.4%-2.6% is reasonable.

Accordingly, we find a DCF indicated cost of common equity in the range of 12.4%-13.0% to be reasonable. [*213]

36

b. Risk Premium & CAPM

Although Mr. Moul's risk premium and Mr. Steslow's CAPM analyses are different, they do have similarities, in that they both quantify the premium earned [*214] by an equity investment, over a fixed income investment, during an historic period, and then add that premium to the current return on a similar fixed income investment. In the instance of Mr. Moul, the fixed income investment was an A-rated utility bond. In the instance of Mr. Steslow, the fixed income investment was a T-Bill. Because of the difference in risk involved in these two fixed income investments, the premiums derived varied greatly, Mr. Moul's was 4.75%, while that of Mr. Steslow was 8.6%. The CAPM method does have the added attribute of adjusting the risk by the beta of the enterprise for which one is attempting to determine a cost of capital.

However, there are two objections which are shared by each methodology which we find to be an insurmountable impediment to placing much, if any, weight upon the results. They are: first, we cannot accept that historic experienced earnings reflect the cost of capital. We know of no reputable analyst who would seriously argue that experienced earnings represent the cost of capital, except by pure happenstance. But, such is the inherent assumption of each methodology. Second, we cannot accept, even assuming that historic [*215] experienced earnings represented the cost of capital, that the average premium of an equity investment over a fixed income investment, over a period as long as 50 years, represents the investor required premium in today's and tomorrow's market.

Accordingly, we conclude that we can place little credence in the results of these methodologies.

c. Earnings/ Price Ratios

As noted above, it has been quite some time since we have been presented with an earnings/ price ratio analysis. We do find some conflict in theory between it and the DCF method. The DCF theory tells us that the investor is influenced by his expectation of appreciation in his investment, which is quantified by the growth in dividend element in the DCF formula. The earnings/ price ratio analysis suggests that we can determine investor's expectation without attempting to directly quantify the investor's appreciation expectation. This aside, it does seem that the earnings/ price ratio analysis has some value.

In this instance, Mr. Steslow's conclusion was an earnings requirement in the range of 12.5% to 13.5%. Since this range is somewhat broader and somewhat higher than our DCF indicated result, we are inclined [*216] toward a somewhat higher conclusion than we might reach, relying upon the DCF analysis alone.

We note that although the ALJ analyzed the evidence before him significantly differently than we have done, he arrived at a conclusion of 12.91%. This is toward the upper end of our DCF range and near the mid-point of our earnings/ price ratio conclusion. Accordingly, we shall adopt his conclusion of 12.91%.

F. Conclusion

Based upon the foregoing, our allowable rate of return determination in this proceedings is 11.14%, as illustrated in the following table:

Capital	Cost	Weighted
Structure	Ratios	Cost
	%	%
Debt	48.4	4.91
Preferred	14.2	1.40
Equity	37.4	4.83
Total	100	11.14

VIII. RATE STRUCTURE

The Company has stated that the rates set forth in its Supplement No. 69 were designed to: (1) reflect, to the maximum extent practical, the cost of providing service; and (2) avoid any disruptive changes in the design of rates, which would unduly affect any customer or customer class.

A. Cost of Service

The OCA took issue with the Company's cost of service studies. The ALJ reported upon that dispute and recommended as [*217] follows:

The Company conducted its cost of service studies to allocate or directly assign plant investment and expenses in a manner which reflects each class' contribution to the incurrence of those costs. In preparing his cost of service studies, Mr. Harris employed the same methods and procedures involved in the functionalization, classification, and allocation of costs which have been reviewed and repeatedly approved by the Commission in prior Company rate proceedings. Those methods are also consistent with the standards set forth in the NARUC Electric Utility Cost Allocation Manual, and with generally accepted industry standards. The development of the Company's cost of service studies is described in detail in Mr. Harris' direct testimony (Penn Power Statement No. 7).

Exhibit 38

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

**METROPOLITAN EDISON COMPANY
DOCKET NO. R-2014-2428745**

**PENNSYLVANIA ELECTRIC COMPANY
DOCKET NO. R-2014-2428743**

**PENNSYLVANIA POWER COMPANY
DOCKET NO. R-2014-2428744**

**WEST PENN POWER COMPANY
DOCKET NO. R-2014-2428742**

**Direct Testimony
of
Steven R. Staub**

List of Topics Addressed

**Capital Structure
Cost of Long Term Debt
Cost of Common Equity
Weighted Average Cost of Capital**

TABLE OF CONTENTS

	Page
I. INTRODUCTION AND PURPOSE	1
II. CAPITAL STRUCTURE.....	3
III. COST OF LONG-TERM DEBT	5
IV. COST OF COMMON EQUITY	6
V. OVERALL COST OF CAPITAL	7

1 including fifteen years with the regulated utility industry. My work and
2 testimonial experience is more fully outlined in Appendix A.

3 **Q. On whose behalf are you testifying in this matter?**

4 A. I am testifying on behalf of Metropolitan Edison Company (“Met-Ed”),
5 Pennsylvania Electric Company (“Penelec”), Pennsylvania Power Company
6 (“Penn Power”), and West Penn Power Company (“West Penn”) (collectively, the
7 “Companies”). My testimony applies to all of the Companies, unless otherwise
8 stated.

9 **Q. What is the purpose of your direct testimony?**

10 A. My testimony describes and supports the capital structure, embedded cost of long-
11 term debt and overall weighted average cost of capital claimed by each of the four
12 Companies. In addition, I explain why the Companies have requested that their
13 authorized return on common equity be set at the high end of the range of values
14 developed by their outside consultant on the cost of capital, Dr. Michael J. Vilbert
15 of The Brattle Group.

16 **Q. Are you sponsoring any exhibits?**

17 A. Yes. I am sponsoring responses to various standard filing requirements dealing
18 with financial matters, which responses are sequentially numbered as Exhibits
19 SRS-1 through SRS-21 for each of the Companies. In addition, I am sponsoring
20 the following summary schedules for each of the four Companies, which will be
21 discussed further in this testimony:

- 1 Exhibits SRS-22: Capitalization and Capitalization Ratios
- 2 Exhibits SRS-23: Schedule of Long-Term Debt Outstanding Projected at
- 3 April 30, 2016
- 4 Exhibits SRS-24: Capital Cost Rates April 30, 2016

5 Each of these exhibits were prepared by me or under my supervision.

6 **II. CAPITAL STRUCTURE**

7 **Q. What capital structure ratios are you proposing be utilized for purposes of**
8 **determining the Companies' overall weighted average costs of capital?**

9 A. I recommend use of each Company's projected capital structure at April 30, 2016,
10 exclusive of short-term debt. That date corresponds to the end of the fully
11 projected future test year in these proceedings and, accordingly, reflects the mix
12 of long-term debt and common equity capital that will support the Companies'
13 claimed rate bases.

14 **Q. Why have you excluded short-term debt from your proposed capital**
15 **structure ratios?**

16 A. Short-term borrowings typically are sources of liquidity and are not utilized to
17 finance long-lived assets, such as those included in the Companies' claimed rate
18 bases. In addition, it is my understanding that the Pennsylvania Public Utility
19 Commission typically excludes short-term debt from a utility's capital structure in
20 base rate cases.

21

1 **Q. How did you derive the Companies' anticipated capital structure ratios at**
 2 **April 30, 2016?**

3 A. As set forth in Exhibits SRS-22, the starting point was the actual capital structure
 4 in place at March 31, 2014, which represents the end of the historic test year.
 5 Then, based on recent financial forecasts, the respective amounts of long-term
 6 debt and common equity¹ were adjusted forward to March 31, 2015, the end of
 7 the future test year, and to April 30, 2016, the end of the fully projected future test
 8 year, to capture: (1) consummated and planned issuances of long-term debt (Met-
 9 Ed and Penelec in 2014 and Penn Power and West Penn prior to April 30, 2016);
 10 (2) the pay down of long-term debt; (3) the amortization of long-term debt
 11 discount and, in the case of West Penn, certain fair value adjustments booked in
 12 accordance with the FirstEnergy / Allegheny Energy merger; and (4) anticipated
 13 increases in retained earnings.

14 **Q. What specific capital structure ratios do you recommend be adopted for rate**
 15 **of return purposes in this case?**

16 A. Since rate setting is prospective, the rate of return should reflect a utility's
 17 expected capital structure at the end of the test year. I therefore recommend the
 18 adoption of the projected April 30, 2016 capital structure ratios set forth below:

Company	Long-Term Debt	Common Equity
Met-Ed	50.0%	50.0%
Penelec	50.1%	49.9%
Penn Power	49.9%	50.1%
West Penn	49.9%	50.1%

¹ None of the four Companies has any preferred or preference stock outstanding.

1 **III. COST OF LONG-TERM DEBT**

2 **Q. What cost rates have you assigned to the long-term debt component of the**
3 **Companies' capital structures?**

4 A. The determination of a utility's weighted average long-term debt cost rate is
5 essentially an arithmetic exercise due to the fact that the utility has contracted for
6 the use of the capital in question for a defined period of time at a specified cost
7 rate. The necessary calculations, which take into account issuance expense and,
8 in the case of Penn Power, annual sinking fund requirements, are provided in
9 Exhibits SRS-23.

10 **Q. Please describe what is shown in Exhibits SRS-23.**

11 A. Exhibits SRS-23 itemize each series of debt, the date of issuance, maturity,
12 original amount issued and projected amount outstanding as of April 30, 2016.
13 The Premium/Discount and Issuance Expenses column represents legal,
14 underwriting and other miscellaneous costs associated with each issuance. The
15 principal amount issued, adjusted for any premium or discount, less any issuance
16 expenses equals the Net Proceeds. The effective rate is calculated by taking the
17 Net Proceeds at the time of issuance and calculating the Internal Rate of Return
18 based on the interest rate and the years to maturity. After the effective rate is
19 calculated for each individual series, the rates are weighted by taking the effective
20 rate multiplied by each respective amount outstanding divided by the total
21 adjusted amount of long-term debt outstanding.

1 **Q. What long-term debt cost rates do you recommend be utilized in developing**
 2 **the Companies’ overall costs of capital?**

3 A. As indicated in Exhibits SRS-23 and as summarized below, the Companies’
 4 weighted average long-term debt cost rates range from 5.21% (Met-Ed) to 6.12%
 5 (Penn Power):

Company	Long-Term Debt Cost Rate
Met-Ed	5.21%
Penelec	5.72%
Penn Power	6.12%
West Penn	5.38%

6

7 **IV. COST OF COMMON EQUITY**

8 **Q. What rate of return on common equity (“ROE”) are the Companies**
 9 **requesting authorization to earn?**

10 A. The Companies seek a reasonable opportunity to earn an ROE of 10.9%. As
 11 noted previously, this represents the upper end of the cost of equity range
 12 determined by Dr. Vilbert, and is more fully explained in Met-Ed/Penelec/Penn
 13 Power/West Penn Statement No. 9.

14 **Q. Why do you believe that the Companies should be provided an ROE at the**
 15 **high end of Dr. Vilbert’s range?**

16 A. For several reasons. First, the Companies project the need to make very
 17 significant capital investments over the next five to ten years as they install smart
 18 meters and replace and rehabilitate aging infrastructure to ensure reliability. To

1 that end, it is critically important that they maintain a healthy financial profile so
2 they can access the capital markets on reasonable terms.

3 Second, and as pointed out by Dr. Vilbert, capital-intensive entities such as the
4 Companies face considerable uncertainty as to the future course of the capital
5 markets. In my view, short and medium term interest rates will likely not go any
6 lower than they are today and, in all probability, will begin to trend upwards in
7 2015. Consequently, my proposed 10.9% equity allowance reflects, in part, my
8 expectation that capital costs are far more likely to increase than they are to
9 decrease or remain flat during the period that the new rates are in effect.
10 Furthermore, setting rates with a ROE that is below that of other investment
11 opportunities of corresponding risk will imperil the Companies' ability to
12 maintain their financial integrity and continue to attract capital at reasonable rates
13 and terms.

14 Third, the Companies have taken a number of positive steps over the past several
15 years to control costs, improve customer service, and promote retail electric
16 competition, as described by Mr. Fullem in Met-Ed/Penelec/Penn Power/West
17 Penn Statement No. 1. I believe all of these efforts should be considered as
18 favorable factors in setting the Companies' authorized ROE.

19 **V. OVERALL COST OF CAPITAL**

20 **Q. How did you calculate the Companies' overall costs of capital?**

21 A. As set forth in the respective Exhibits SRS-24, I quantified, and then combined,
22 each Company's weighted average costs of long-term debt and common equity by

1 multiplying the projected April 30, 2016 capitalization ratios presented in Exhibit
2 SRS-22 by: (1) the average cost of debt developed on Exhibits SRS-23; and (2)
3 the recommended ROE of 10.9%. The results are as follows:

Company	Overall Weighted Cost of Capital
Met-Ed	8.05%
Penelec	8.31%
Penn Power	8.51%
West Penn	8.14%

4

5 **Q. Does that conclude your direct testimony at this time?**

6 **A.** Yes, it does.

METROPOLITAN EDISON COMPANY

FILING REQUIREMENT III-A-2:

“Provide a schedule in the same format as Schedule 1, except for the omission of the descriptive statement, for the most immediate comparable annual historical period prior to the test year and the two calendar years most immediately preceding the rate of return claim period. Irrespective of whether the capitalization claimed on Schedule 1 includes short-term debt, Schedule 2 should reflect capital ratios with and without short-term debt.”

RESPONSE:

See ME Exhibit SRS-4 Attachment A

PUBLIC VERSION

Metropolitan Edison Company
Capitalization & Capitalization Ratios
(\$000)

	Actuals at March 31, 2013			Actuals at March 31, 2014			Forecast at March 31, 2015			Forecast at April 30, 2016		
	Amount	Ratios		Amount	Ratios		Amount	Ratios		Amount	Ratios	
	Outstanding	Excl. S-T-Debt	Incl. S-T-Debt	Outstanding	Excl. S-T-Debt	Incl. S-T-Debt	Outstanding	Excl. S-T-Debt	Incl. S-T-Debt	Outstanding	Excl. S-T-Debt	Incl. S-T-Debt
Long Term Debt ⁽¹⁾	877,999	52.7%	49.9%	778,118 ⁽²⁾	48.8%	44.9%	849,661 ⁽²⁾	50.4%	49.3%	849,707 ⁽²⁾	50.0%	48.5%
Preferred Stock	0	0.0%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%	0	0.0%	0.0%
Common Equity	788,885	47.3%	44.9%	817,892	51.2%	47.2%	834,704	49.6%	48.4%	848,489	50.0%	48.5%
Total Permanent Capital	<u>1,666,884</u>	<u>100.0%</u>	<u>94.8%</u>	<u>1,596,010</u>	<u>100.0%</u>	<u>92.1%</u>	<u>1,684,365</u>	<u>100.0%</u>	<u>97.7%</u>	<u>1,698,196</u>	<u>100.0%</u>	<u>97.0%</u>
Short-term Debt	91,306		5.2%	136,845		7.9%	39,888		2.3%	52,077		3.0%
Total Capital	<u>1,758,190</u>		<u>100.0%</u>	<u>1,732,855</u>		<u>100.0%</u>	<u>1,724,253</u>		<u>100.0%</u>	<u>1,750,273</u>		<u>100.0%</u>

Notes: ⁽¹⁾ Includes current portion of long-term debt
⁽²⁾ Reflects changes in long-term debt of:
new long-term debt issues 0
long-term debt paydown (100,000)
Unamort Discount on long-term debt 119

0	250,000	issued in June 2014	0
(100,000)	(178,500)		0
119	43		46

Exhibit 39

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Public Meeting held October 22, 2015

Docket Number: M-2015-2505842

BUREAU OF TECHNICAL UTILITY SERVICES

REPORT ON THE QUARTERLY EARNINGS

OF JURISDICTIONAL UTILITIES

FOR THE YEAR ENDED

June 30, 2015

Gladys M. Brown, Chairman
John F. Coleman, Jr., Vice Chairman
Pamela A. Witmer
Robert F. Powelson
Andrew G. Place

PUBLIC VERSION
TABLE OF CONTENTS

Page No.

Introduction	5
<p>West Penn Power Company, Pennsylvania Power Company, Pennsylvania Electric Company, Metropolitan Edison Company, PPL Electric Utilities Corporation, PECO Energy-Electric, and Columbia Gas had a pending rate filing at Docket Nos. R-2014-2428742, R-2014-2428744, R-2014-2428743, R-2014-2428745, R-2015-2469275, R-2015-2468981, and R-2015-2468056, respectively, and filed a letter with the Secretary in place of a report in accordance with 52 Pa. Code § 71.4.</p>	
Attachment A – Summary of Equity Returns	6
Attachment B – Summary of Returns	10
<p>This chart depicts the overall and equity returns (actual and adjusted) for the filing utilities for the current quarter. The last authorized equity return and the year authorized is also shown.</p>	
Attachment C – Allowed Rates of Return on Common Equity	13
<p>This is a historical chart that shows the most recent fully litigated rate cases for select companies in electric, gas, and water. A docket number followed by their final return on equity and year is also given.</p>	
Attachment D – Market Based Returns on Equity – Electric	14
<p>The market indicated common equity cost rate range consists of data used from the electric barometer groups and is based on a series of calculations to average the DCF methods. Also indicates Distribution System Improvement Charge Return.</p>	
Attachment D – Electric Barometer Group Calculation of a Current and 52 Week Average Dividend Yield	15
<p>Electric barometer companies are used to calculate a current DCF in the first chart. The second chart demonstrates the companies 52 week average DCF. A final average of the two calculations is also shown at the bottom.</p>	
Attachment D – Development of a Representative Dividend Growth Rate	16
<p>Multiple sources of the gas barometer companies projected 5 year Earnings Per Share are used to calculate the Group Average Dividend Growth Estimate.</p>	
Attachment D – Common Equity Ratios of Electric Barometer Companies	17
<p>The Common Equity Ratios of Electric Utility Barometer Companies table depicts each company’s common equity ratio. The range of reasonable equity ratios consists of the lowest and highest common equity ratio in the quarter for the barometer group companies.</p>	
Attachment D – Capital Structure and Cost of Debt and Preferred Stock	18
<p>The Capital Structure and Cost of Debt and Preferred Stock table is taken from the Schedule E and Schedule F of each Pennsylvania electric company’s quarterly earnings report.</p>	
Attachment E – Market Based Returns on Equity – Gas	19
<p>The market indicated common equity cost rate range consists of data used from the gas barometer groups and is based on a series of calculations to average the DCF methods. Also indicates Distribution System Improvement Charge Return.</p>	
Attachment E – Gas Barometer Group Calculation of a Current and 52 Week Average Dividend Yield	20
<p>Gas barometer companies are used to calculate a current DCF in the first chart. The second chart demonstrates the companies 52 week average DCF. A final average of the two calculations is also shown at the bottom.</p>	

Attachment E – Development of a Representative Dividend Growth Rate.....	21
Multiple sources of the gas barometer companies projected 5 year Earnings Per Share are used to calculate the Group Average Dividend Growth Estimate.	
Attachment F – Market Based Returns on Equity – Water	22
The market indicated common equity cost rate range consists of data used from the water barometer groups and is based on a series of calculations to average the DCF methods. Also indicates Distribution System Improvement Charge Return.	
Attachment F – Water Barometer Group Calculation of a Current and 52 Week Average Dividend Yield.....	23
Water barometer companies are used to calculate a current DCF in the first chart. The second chart demonstrates the companies 52 week average DCF. A final average of the two calculations is also shown at the bottom.	
Attachment F – Development of a Representative Dividend Growth Rate.....	24
Multiple sources of the water barometer companies projected 5 year Earnings Per Share are used to calculate the Group Average Dividend Growth Estimate.	

Introduction:

On September 20, 1991, the Commission initiated a rulemaking at L-00910061 pertaining to earnings disclosures by the public utilities subject to its jurisdiction. At that docket, the Commission stated that the submission of accurate, reliable and complete earnings disclosure reports, at regular intervals, is essential to the fulfillment of the broad regulatory oversight responsibilities entrusted to the Commission by the Legislature in the Public Utility Code. The earnings disclosure regulations promulgated by the Commission were adopted October 1, 1992, and published January 23, 1993, at 23 Pa.B. 463. Based upon those regulations, codified at 52 Pa. Code, Chapter 71, a reporting format was developed and distributed to the jurisdictional fixed utilities of Pennsylvania.

All fixed utilities having jurisdictional revenues of \$1,000,000 or more, for a calendar year, are required to file the report by March 31 of each year. Such reports are to be based upon the results of operations for the 12-month period ending December 31 of the prior year. Utilities having more than \$10,000,000 in jurisdictional revenues are also required to file reports for the 12 months ending on March 31, June 30, and September 30 of each year. On November 30, 2004, however, the Pennsylvania General Assembly signed into law Act 183 concerning alternative telecommunications regulation and broadband deployment. As a result of Act 183, the reporting requirements for the PUC jurisdictional telecommunications companies of Pennsylvania have been streamlined at section 3015(e) of the Public Utility Code. A quarterly earnings report is not listed among those reports now required of PUC jurisdictional telecommunications utilities in Pennsylvania and, therefore, this report does not address telephone company earnings.

The reports have been filed for the period ended June 30, 2015.¹ The Finance Staff of the Bureau of Technical Utility Services has reviewed the reports and has prepared this summary report for public release. This report sets forth the achieved return on equity for each company, the last allowed return for that utility, a market return as determined through the analysis of the barometer group data and the most recent returns allowed, per industry, by the Pennsylvania Public Utility Commission and by other regulatory bodies. Where a utility has not filed a report, the reasons for not filing are indicated.

Questions pertaining to the preparation and contents of this Report should be directed to Ms. Erin Laudenslager, Manager - Finance, Bureau of Technical Utility Services, at (717) 705-4364.

¹ West Penn Power Company, Pennsylvania Power Company, Pennsylvania Electric Company, Metropolitan Edison Company, PPL Electric Utilities Corporation, PECO Energy-Electric, and Columbia Gas had a pending rate filing at Docket Nos. R-2014-2428742, R-2014-2428744, R-2014-2428743, R-2014-2428745, R-2015-2469275, R-2015-2468981, and R-2015-2468056, respectively, and filed a letter with the Secretary in place of a report in accordance with 52 Pa. Code § 71.4.

The market indicated common equity cost rate range consists of data used from the barometer groups and is based on a series of calculations to average the DCF methods.

Market Based Returns on Common Equity (1)			
September 23, 2015			
<u>Electric Company Barometer Group</u>			
			Cost Rates
			<u>%</u>
(1)	Current DCF		8.59
(2)	52-Week Average DCF		<u>8.31</u>
(3)	Overall DCF (1) + (2) / 2		<u>8.45</u>
(4)	Market Indicated Common Equity Cost Rate Range @ 1 standard deviation around the mean. ²		<u>7-9.89</u>
(5)	CAPM Check of DCF Reasonableness		9.00
(6)	Recent Commission Approved ROEs ³ : None within last two years		
(7)	Distribution System Improvement Charge (DSIC) Return		<u>9.90%</u>
<u>Barometer Group Companies</u>			
Consolidated Edison			
Dominion Resources			
PPL Corporation			
Public Service Enterprise Group			
Pepco Holdings			
Eversource Energy			
¹ As calculated by the Bureau of Technical Utility Services			
² Standard Deviation of 12 DCF observations			
³ ROEs from base rate cases within last two years, fully litigated or stipulated for DSIC purposes			
Any questions concerning DSIC should be directed to Andrew Herster of the Bureau of Technical Utility Services at (717) 783-5392.			

Barometer electric companies are used to calculate a current DCF in the first chart. The second chart demonstrates the companies 52 week average DCF. A final average of the two calculations is also shown at the bottom.

Electric Company Barometer Group						
Calculation of a Current Dividend Yield						
	Closing	Latest	Ind. Div.			
	Market	Indicated	Plus 1/2	Current		
	Price (Po)	Dividend	Div. Growth	Dividend		
	<u>9/21/2015</u>	<u>Do</u>	<u>Rate (D1)</u>	<u>Yield(D1/Po)</u>	<u>DCF</u>	
	(\$)	(\$)	(\$)	(%)	(%)	
Consolidated Edison	65.03	2.60	2.63	4.05	6.90	
Dominion Resources	69.32	2.59	2.69	3.88	10.24	
PPL Corporation	31.33	1.51	1.52	4.86	7.26	
Public Service Enterprise Group	40.61	1.56	1.60	3.93	7.38	
Duke Energy Corporation	70.05	3.30	3.36	4.79	9.47	
Eversource Energy	47.51	1.67	1.72	3.63	10.23	
Group Average D1/Po				4.19		
Group Average G				4.40		
DCF				8.59		
Electric Company Barometer Group						
52-week Average Dividend Yield Calculation						
				Latest	Average	
	<u>High</u>	<u>Low</u>	<u>Average (Pa)</u>	<u>Indicated</u>	<u>Dividend</u>	<u>DCF</u>
	(\$)	(\$)	(\$)	(\$)	(%)	(%)
Consolidated Edison	72.25	55.80	64.03	2.60	4.06	6.91
Dominion Resources	80.89	65.53	73.21	2.59	3.54	9.90
PPL Corporation	38.14	29.18	33.66	1.51	4.49	6.89
Public Service Enterprise Group	44.45	36.37	40.41	1.56	3.86	7.31
Duke Energy Corporation	89.97	67.27	78.62	3.30	4.20	8.87
Eversource Energy	56.83	43.88	50.36	1.67	3.32	9.92
Group Average Do / Pa					3.91	
Group Average G					4.40	
DCF					8.31	
Average of Current and 52-Week					8.45	

Multiple sources of the Barometer companies projected 5 year Earnings Per Share are used to calculate the Group Average Dividend Growth Estimate.

Development of a Representative Dividend Growth Rate for the Barometer Group of Six Electric Companies							
	5 Year Forecast						
	Value Line	Value Line	Zack's	Yahoo	Morningstar	Average Earnings	Growth
	<u>DPS</u>	<u>EPS</u>	<u>EPS</u>	<u>EPS</u>	<u>EPS</u>	<u>Growth</u>	<u>Estimate</u>
	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Consolidated Edison	2.50	3.00	2.70	2.72	2.00	2.61	2.85
Dominion Resources	7.50	8.00	6.30	5.38	7.40	6.77	6.36
PPL Corporation	1.50		2.40	1.85	0.30	1.52	2.40
Public Service Enterprise Group	4.50	3.50	3.40	2.18	7.50	4.15	3.45
Duke Energy Corporation	3.50	5.00	4.70	4.33	10.00	6.01	4.68
Eversource Energy	6.50	8.50	6.80	6.21	6.80	7.08	6.60
Group Average	4.33	5.60	4.38	3.78	5.67	4.86	4.39
USE							4.40
Sources: Morningstar , September 23, 2015 (http://financials.morningstar.com)							
Value Line Investment Survey , September 23, 2015							
Zacks , September 23, 2015 (www.zacks.com)							
Yahoo! , September 22, 2015 (http://finance.yahoo.com/)							

The Common Equity Ratios of Electric Utility Barometer Companies table depicts each company's quarterly common equity ratio. The range of Reasonable Equity Ratios consists of the lowest and highest common equity ratio for the barometer group companies.

<u>Common Equity Ratios of Electric Utility Barometer Groups (2)</u>	
<u>Company</u>	<u>2015 Common Equity Ratio (1)</u>
Consolidated Edison	51.50%
Dominion Resources	36.50%
PPL Corporation	41.50%
Public Service Enterprise Group	59.50%
Duke Energy Corporation	51.00%
Eversource Energy	53.00%
Average	48.83%
<u>Range of Reasonable Equity Ratios</u>	<u>36.50-59.50%</u>
(1) Source: Value Line Investment Survey September 23, 2015	
(2) The common equity ratios reported by Value Line exclude short-term debt and current maturities of long-term debt.	

The Capital Structure and Cost of Debt and Preferred Stock table shows the Schedule E and Schedule F of each company's quarterly earnings report.

Capital Structure and Cost of Debt and Preferred Stock for Pennsylvania Electrics - Twelve months ended June 30, 2015 ¹								
	PPL Electric	Duquesne Light Company	UGI Utilities Inc.	West Penn Power Co.	PECO Electric	Metropolitan Edison Company	PA Electric Company	PA Power Company
Schedule E								
Total Debt		46.82%	38.72%					
Total Preferred & Preference Stock		1.46%	0.00%					
Total Common Equity		51.72%	61.28%					
Schedule F								
Cost of Debt		4.93%	5.92%					
Cost of Preferred Stock		4.09%	0.00%					

¹ Source: Company supplied quarterly earnings report, Schedules E & F

Exhibit 40

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

**METROPOLITAN EDISON COMPANY
DOCKET NO. R-2016-2537349**

2016 GENERAL BASE RATE FILING

(Volume III of III)

FILED: April 28, 2016

PUBLIC VERSION

Met-Ed Statement No. 9

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

**METROPOLITAN EDISON COMPANY
DOCKET NO. R-2016-2537349**

**Direct Testimony
of
Joseph Dipre**

List of Topics Addressed

**Capital Structure
Cost of Long-Term Debt
Weighted Average Cost of Capital**

VZ00773

TABLE OF CONTENTS

	Page
I. INTRODUCTION AND PURPOSE	1
II. CAPITAL STRUCTURE.....	3
III. COST OF LONG-TERM DEBT	4
IV. OVERALL COST OF CAPITAL	5

**DIRECT TESTIMONY
OF
JOSEPH DIPRE**

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21

I. INTRODUCTION AND PURPOSE

Q. Please state your name and business address.

A. My name is Joseph Dipre and my business address is 76 South Main Street, Akron, Ohio 44308.

Q. By whom are you employed and in what capacity?

A. I am employed by FirstEnergy Service Company. My title is Sr. Advisor, Strategy & Long-Term Planning.

Q. What are your current responsibilities?

A. I am responsible for supporting finance-related activities, including budgeting, forecasting, and financial planning. My responsibilities primarily focus on the regulated companies owned by FirstEnergy Corp. (“FirstEnergy”) and its subsidiaries, including its Pennsylvania distribution operating companies.

Q. Please describe your educational and professional experience.

A. I am a graduate of Defiance College with undergraduate degrees in Business/Accounting and Mathematics. I earned my CPA status from the State of Ohio in February 1994. I began my professional career at Ducato and Kline, CPA, performing in various accounting-related roles between 1986 and 1989. My utility industry career began with Centerior Energy Corporation (a predecessor to FirstEnergy) in 1989 as a Tax Analyst in

1 the Tax Department. In 2004, I moved over to FirstEnergy's Strategic Planning
2 Department as a Financial Analyst and served in a similar role in the Business Planning
3 Department. I was promoted to Sr. Financial Analyst, Staff Business Analyst, and
4 Consultant over time. In 2005, I was promoted as Manager of Financial Studies and
5 Capital Planning. In 2007, I was assigned to the Business Development Department as
6 Manager of Business Development and Performance Management and in 2009 was
7 promoted as Sr. Business Development Advisor. I maintained the Sr. Advisor title when
8 I moved to the Treasury Department in 2011 and to my current department, Strategy &
9 Long-Term Planning, in 2015.

10 **Q. On whose behalf are you testifying in this matter?**

11 A. I am testifying on behalf of Metropolitan Edison Company ("Met-Ed").

12 **Q. What is the purpose of your direct testimony?**

13 A. My testimony describes and supports the capital structure, embedded cost of long-term
14 debt and overall weighted average cost of capital claimed by Met-Ed.

15 **Q. Are you sponsoring any exhibits?**

16 A. Yes. I am sponsoring responses to various standard filing requirements dealing with
17 financial matters, which responses are sequentially numbered as Exhibits JD-1 through
18 JD-21 for Met-Ed. In addition, I am sponsoring the following summary schedules for
19 Met-Ed, which will be discussed further in this testimony:

20

1 Exhibit JD-22: Capitalization & Capitalization Ratios

2 Exhibit JD-23: Schedule of Long-Term Debt Outstanding at 12/31/2017

3 Exhibit JD-24: Capital Cost Rates 12/31/2017

4 Each of these exhibits was prepared by me or under my supervision.

5 **II. CAPITAL STRUCTURE**

6 **Q. What capital structure ratios are you proposing be utilized for purposes of**
7 **determining Met-Ed's overall weighted average cost of capital?**

8 A. I recommend use of Met-Ed's projected capital structure at December 31, 2017, exclusive
9 of short-term debt. That date corresponds to the end of the fully projected future test year
10 in these proceedings and, accordingly, reflects the mix of long-term debt and common
11 equity capital that will support Met-Ed's claimed rate base.

12 **Q. Why have you excluded short-term debt from your proposed capital structure**
13 **ratios?**

14 A. Short-term borrowings typically are sources of liquidity and are not utilized to finance
15 long-lived assets, such as those included in Met-Ed's claimed rate base. In addition, it is
16 my understanding that the Pennsylvania Public Utility Commission typically excludes
17 short-term debt from a utility's capital structure in base rate cases.

18 **Q. How did you derive Met-Ed's anticipated capital structure ratios at December 31,**
19 **2017?**

20 A. As set forth in Exhibit JD-22, the starting point was the actual capital structure in place at
21 December 31, 2015, which represents the end of the historic test year. Then, based on

1 recent financial forecasts, the respective amounts of long-term debt and common equity¹
2 were adjusted forward to December 31, 2016, the end of the future test year, and to
3 December 31, 2017, the end of the fully projected future test year, to capture: (1)
4 consummated and planned issuances of long-term debt; (2) the pay down of long-term
5 debt; (3) the amortization of long-term debt discount; (4) planned equity infusions; and
6 (5) anticipated increases in retained earnings.

7 **Q. What specific capital structure ratios do you recommend be adopted for rate of**
8 **return purposes in this case?**

9 A. Since rate setting is prospective, the rate of return should reflect a utility's expected
10 capital structure at the end of the fully projected future test year. I therefore recommend
11 the adoption of the projected December 31, 2017 capital structure ratios of 48.8% long-
12 term debt and 51.2% common equity.

13 **III. COST OF LONG-TERM DEBT**

14 **Q. What cost rate have you assigned to the long-term debt component of Met-Ed's**
15 **capital structure?**

16 A. The determination of a utility's weighted average long-term debt cost rate is essentially
17 an arithmetic exercise due to the fact that the utility has contracted for the use of the
18 capital in question for a defined period of time at a specified cost rate. The necessary
19 calculations, which take into account issuance expense, are provided in Exhibit JD-23.

20 **Q. Please describe what is shown in Exhibit JD-23.**

¹ Met-Ed has no preferred or preference stock outstanding.

1 A. Exhibit JD-23 itemizes each series of debt, the date of issuance, maturity, original amount
2 issued and projected amount outstanding as of December 31, 2017. The
3 Premium/Discount and Issuance Expenses column represents legal, underwriting and
4 other miscellaneous costs associated with each issuance. The principal amount issued,
5 adjusted for any premium or discount, less any issuance expenses equals the Net
6 Proceeds. The effective rate is calculated by taking the Net Proceeds at the time of
7 issuance and calculating the Internal Rate of Return based on the interest rate and the
8 years to maturity. After the effective rate is calculated for each individual series, the
9 rates are weighted by taking the effective rate multiplied by each respective amount
10 outstanding divided by the total adjusted amount of long-term debt outstanding.

11 **Q. What long-term debt cost rate do you recommend be utilized in developing Met-**
12 **Ed's overall cost of capital?**

13 A. As indicated in Exhibit JD-23, Met-Ed's projected weighted average long-term debt cost
14 rate is 5.25%.

15 **IV. OVERALL COST OF CAPITAL**

16 **Q. How did you calculate Met-Ed's overall cost of capital?**

17 A. As set forth in Exhibit JD-24, I quantified, and then combined, Met-Ed's weighted
18 average cost of long-term debt and cost of common equity by multiplying the projected
19 December 31, 2017 capitalization ratios presented in Exhibit JD-22 by: (1) the average
20 cost of debt developed on Exhibit JD-23; and (2) Met-Ed's requested return on common

1 equity of 10.90%. The proposed cost of equity is supported by Ms. Pauline Ahern in
2 Met-Ed Statement No. 8. Met-Ed's overall weighted cost of capital is 8.14%.

3 **Q. Does that conclude your direct testimony at this time?**

4 A. Yes, it does.

5

DB1/ 87345853.2

Exhibit 41

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

**PENNSYLVANIA ELECTRIC COMPANY
DOCKET NO. R-2016-2537352**

2016 GENERAL BASE RATE FILING

(Volume III of III)

FILED: April 28, 2016

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

**PENNSYLVANIA ELECTRIC COMPANY
DOCKET NO. R-2016-2537352**

**Direct Testimony
of
Joseph Dipre**

List of Topics Addressed

**Capital Structure
Cost of Long-Term Debt
Weighted Average Cost of Capital**

TABLE OF CONTENTS

	Page
I. INTRODUCTION AND PURPOSE	1
II. CAPITAL STRUCTURE.....	3
III. COST OF LONG-TERM DEBT	4
IV. OVERALL COST OF CAPITAL	5

**DIRECT TESTIMONY
OF
JOSEPH DIPRE**

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21

I. INTRODUCTION AND PURPOSE

Q. Please state your name and business address.

A. My name is Joseph Dipre and my business address is 76 South Main Street, Akron, Ohio 44308.

Q. By whom are you employed and in what capacity?

A. I am employed by FirstEnergy Service Company. My title is Sr. Advisor, Strategy & Long-Term Planning.

Q. What are your current responsibilities?

A. I am responsible for supporting finance-related activities, including budgeting, forecasting, and financial planning. My responsibilities primarily focus on the regulated companies owned by FirstEnergy Corp. (“FirstEnergy”) and its subsidiaries, including its Pennsylvania distribution operating companies.

Q. Please describe your educational and professional experience.

A. I am a graduate of Defiance College with undergraduate degrees in Business/Accounting and Mathematics. I earned my CPA status from the State of Ohio in February 1994. I began my professional career at Ducato and Kline, CPA, performing in various accounting-related roles between 1986 and 1989. My utility industry career began with Centerior Energy Corporation (a predecessor to FirstEnergy) in 1989 as a Tax Analyst in

1 the Tax Department. In 2004, I moved over to FirstEnergy's Strategic Planning
2 Department as a Financial Analyst and served in a similar role in the Business Planning
3 Department. I was promoted to Sr. Financial Analyst, Staff Business Analyst, and
4 Consultant over time. In 2005, I was promoted as Manager of Financial Studies and
5 Capital Planning. In 2007, I was assigned to the Business Development Department as
6 Manager of Business Development and Performance Management and in 2009 was
7 promoted as Sr. Business Development Advisor. I maintained the Sr. Advisor title when
8 I moved to the Treasury Department in 2011 and to my current department, Strategy &
9 Long-Term Planning, in 2015.

10 **Q. On whose behalf are you testifying in this matter?**

11 A. I am testifying on behalf of Pennsylvania Electric Company ("Penelec").

12 **Q. What is the purpose of your direct testimony?**

13 A. My testimony describes and supports the capital structure, embedded cost of long-term
14 debt and overall weighted average cost of capital claimed by Penelec.

15 **Q. Are you sponsoring any exhibits?**

16 A. Yes. I am sponsoring responses to various standard filing requirements dealing with
17 financial matters, which responses are sequentially numbered as Exhibits JD-1 through
18 JD-21 for Penelec. In addition, I am sponsoring the following summary schedules for
19 Penelec, which will be discussed further in this testimony:

20

- 1 Exhibit JD-22: Capitalization & Capitalization Ratios
- 2 Exhibit JD-23: Schedule of Long-Term Debt Outstanding at 12/ 31/2017
- 3 Exhibit JD-24: Capital Cost Rates 12/31/2017

4 Each of these exhibits was prepared by me or under my supervision.

5 **II. CAPITAL STRUCTURE**

6 **Q. What capital structure ratios are you proposing be utilized for purposes of**
7 **determining Penelec’s overall weighted average cost of capital?**

8 A. I recommend use of Penelec’s projected capital structure at December 31, 2017,
9 exclusive of short-term debt. That date corresponds to the end of the fully projected
10 future test year in these proceedings and, accordingly, reflects the mix of long-term debt
11 and common equity capital that will support Penelec’s claimed rate base.

12 **Q. Why have you excluded short-term debt from your proposed capital structure**
13 **ratios?**

14 A. Short-term borrowings typically are sources of liquidity and are not utilized to finance
15 long-lived assets, such as those included in Penelec’s claimed rate base. In addition, it is
16 my understanding that the Pennsylvania Public Utility Commission typically excludes
17 short-term debt from a utility’s capital structure in base rate cases.

18 **Q. How did you derive Penelec’s anticipated capital structure ratios at December 31,**
19 **2017?**

20 A. As set forth in Exhibit JD-22, the starting point was the actual capital structure in place at
21 December 31, 2015, which represents the end of the historic test year. Then, based on

1 recent financial forecasts, the respective amounts of long-term debt and common equity¹
2 were adjusted forward to December 31, 2016, the end of the future test year, and to
3 December 31, 2017, the end of the fully projected future test year, to capture: (1)
4 consummated and planned issuances of long-term debt; (2) the pay down of long-term
5 debt; (3) the amortization of long-term debt discount; (4) planned equity infusions; and
6 (5) anticipated increases in retained earnings.

7 **Q. What specific capital structure ratios do you recommend be adopted for rate of**
8 **return purposes in this case?**

9 A. Since rate setting is prospective, the rate of return should reflect a utility's expected
10 capital structure at the end of the fully projected future test year. I therefore recommend
11 the adoption of the projected December 31, 2017 capital structure ratios of 47.4% long-
12 term debt and 52.6% common equity.

13 **III. COST OF LONG-TERM DEBT**

14 **Q. What cost rate have you assigned to the long-term debt component of Penelec's**
15 **capital structure?**

16 A. The determination of a utility's weighted average long-term debt cost rate is essentially
17 an arithmetic exercise due to the fact that the utility has contracted for the use of the
18 capital in question for a defined period of time at a specified cost rate. The necessary
19 calculations, which take into account issuance expense, are provided in Exhibit JD-23.

20 **Q. Please describe what is shown in Exhibit JD-23.**

¹ Penelec has no preferred or preference stock outstanding.

1 A. Exhibit JD-23 itemizes each series of debt, the date of issuance, maturity, original amount
2 issued and projected amount outstanding as of December 31, 2017. The
3 Premium/Discount and Issuance Expenses column represents legal, underwriting and
4 other miscellaneous costs associated with each issuance. The principal amount issued,
5 adjusted for any premium or discount, less any issuance expenses equals the Net
6 Proceeds. The effective rate is calculated by taking the Net Proceeds at the time of
7 issuance and calculating the Internal Rate of Return based on the interest rate and the
8 years to maturity. After the effective rate is calculated for each individual series, the
9 rates are weighted by taking the effective rate multiplied by each respective amount
10 outstanding divided by the total adjusted amount of long-term debt outstanding.

11 **Q. What long-term debt cost rate do you recommend be utilized in developing**
12 **Penelec's overall cost of capital?**

13 A. As indicated in Exhibit JD-23, Penelec's projected weighted average long-term debt cost
14 rate is 5.56%.

15 **IV. OVERALL COST OF CAPITAL**

16 **Q. How did you calculate Penelec's overall cost of capital?**

17 A. As set forth in Exhibit JD-24, I quantified and then combined Penelec's weighted average
18 cost of long-term debt and cost of common equity by multiplying the projected December
19 31, 2017 capitalization ratios presented in Exhibit JD-22 by: (1) the average cost of debt
20 developed in Exhibit JD-23; and (2) Penelec's requested return on common equity of

1 11.30%. The proposed cost of equity is supported by Ms. Pauline Ahern in Penelec
2 Statement No. 8. Penelec's overall weighted cost of capital is 8.58%.

3 **Q. Does that conclude your direct testimony at this time?**

4 A. Yes, it does.

5

DBI/ 87346880.2

Exhibit 42

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

**PENNSYLVANIA POWER COMPANY
DOCKET NO. R-2016-2537355**

2016 GENERAL BASE RATE FILING

(Volume III of III)

FILED: April 28, 2016

PUBLIC VERSION

Penn Power Statement No. 9

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

**PENNSYLVANIA POWER COMPANY
DOCKET NO. R-2016-2537355**

**Direct Testimony
of
Joseph Dipre**

List of Topics Addressed

**Capital Structure
Cost of Long-Term Debt
Weighted Average Cost of Capital**

VZ00793

TABLE OF CONTENTS

	Page
I. INTRODUCTION AND PURPOSE	1
II. CAPITAL STRUCTURE.....	3
III. COST OF LONG-TERM DEBT	4
IV. OVERALL COST OF CAPITAL	5

**DIRECT TESTIMONY
OF
JOSEPH DIPRE**

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21

I. INTRODUCTION AND PURPOSE

Q. Please state your name and business address.

A. My name is Joseph Dipre and my business address is 76 South Main Street, Akron, Ohio 44308.

Q. By whom are you employed and in what capacity?

A. I am employed by FirstEnergy Service Company. My title is Sr. Advisor, Strategy & Long-Term Planning.

Q. What are your current responsibilities?

A. I am responsible for supporting finance-related activities, including budgeting, forecasting, and financial planning. My responsibilities primarily focus on the regulated companies owned by FirstEnergy Corp. (“FirstEnergy”) and its subsidiaries, including its Pennsylvania distribution operating companies.

Q. Please describe your educational and professional experience.

I am a graduate of Defiance College with undergraduate degrees in Business/Accounting and Mathematics. I earned my CPA status from the State of Ohio in February 1994. I began my professional career at Ducato and Kline, CPA, performing in various accounting-related roles between 1986 and 1989. My utility industry career began with Centerior Energy Corporation (a predecessor to FirstEnergy) in 1989 as a Tax Analyst in

1 the Tax Department. In 2004, I moved over to FirstEnergy's Strategic Planning
2 Department as a Financial Analyst and served in a similar role in the Business Planning
3 Department. I was promoted to Sr. Financial Analyst, Staff Business Analyst, and
4 Consultant over time. In 2005, I was promoted as Manager of Financial Studies and
5 Capital Planning. In 2007, I was assigned to the Business Development Department as
6 Manager of Business Development and Performance Management and in 2009 was
7 promoted as Sr. Business Development Advisor. I maintained the Sr. Advisor title when
8 I moved to the Treasury Department in 2011 and to my current department, Strategy &
9 Long-Term Planning, in 2015.

10 **Q. On whose behalf are you testifying in this matter?**

11 A. I am testifying on behalf of Pennsylvania Power Company ("Penn Power").

12 **Q. What is the purpose of your direct testimony?**

13 A. My testimony describes and supports the capital structure, embedded cost of long-term
14 debt and overall weighted average cost of capital claimed by Penn Power.

15 **Q. Are you sponsoring any exhibits?**

16 A. Yes. I am sponsoring responses to various standard filing requirements dealing with
17 financial matters, which responses are sequentially numbered as Exhibits JD-1 through
18 JD-21 for Penn Power. In addition, I am sponsoring the following summary schedules
19 for Penn Power, which will be discussed further in this testimony:

20

- 1 Exhibit JD-22: Capitalization & Capitalization Ratios
- 2 Exhibit JD-23: Schedule of Long-Term Debt Outstanding at 12/31/2017
- 3 Exhibit JD-24: Capital Cost Rates 12/31/2017

4 Each of these exhibits was prepared by me or under my supervision.

5 **II. CAPITAL STRUCTURE**

6 **Q. What capital structure ratios are you proposing be utilized for purposes of**
7 **determining Penn Power’s overall weighted average cost of capital?**

8 A. I recommend use of Penn Power’s projected capital structure at December 31, 2017,
9 exclusive of short-term debt. That date corresponds to the end of the fully projected
10 future test year in these proceedings and, accordingly, reflects the mix of long-term debt
11 and common equity capital that will support Penn Power’s claimed rate base.

12 **Q. Why have you excluded short-term debt from your proposed capital structure**
13 **ratios?**

14 A. Short-term borrowings typically are sources of liquidity and are not utilized to finance
15 long-lived assets, such as those included in Penn Power’s claimed rate base. In addition,
16 it is my understanding that the Pennsylvania Public Utility Commission typically
17 excludes short-term debt from a utility’s capital structure in base rate cases.

18 **Q. How did you derive Penn Power’s anticipated capital structure ratios at December**
19 **31, 2017?**

20 A. As set forth in Exhibit JD-22, the starting point was the actual capital structure in place at
21 December 31, 2015, which represents the end of the historic test year. Then, based on

1 recent financial forecasts, the respective amounts of long-term debt and common equity¹
2 were adjusted forward to December 31, 2016, the end of the future test year, and to
3 December 31, 2017, the end of the fully projected future test year, to capture: (1)
4 consummated and planned issuances of long-term debt; (2) the pay down of long-term
5 debt; (3) the amortization of long-term debt discount; (4) planned equity infusions; and
6 (5) anticipated increases in retained earnings.

7 **Q. What specific capital structure ratios do you recommend be adopted for rate of**
8 **return purposes in this case?**

9 A. Since rate setting is prospective, the rate of return should reflect a utility's expected
10 capital structure at the end of the fully projected future test year. I therefore recommend
11 the adoption of the projected December 31, 2017 capital structure ratios of 49.9% long-
12 term debt and 50.1% common equity.

13 **III. COST OF LONG-TERM DEBT**

14 **Q. What cost rate have you assigned to the long-term debt component of Penn Power's**
15 **capital structure?**

16 A. The determination of a utility's weighted average long-term debt cost rate is essentially
17 an arithmetic exercise due to the fact that the utility has contracted for the use of the
18 capital in question for a defined period of time at a specified cost rate. The necessary
19 calculations, which take into account issuance expense, are provided in Exhibit JD-23.

20 **Q. Please describe what is shown in Exhibit JD-23.**

¹ Penn Power has no preferred or preference stock outstanding.

1 A. Exhibit JD-23 itemizes each series of debt, the date of issuance, maturity, original amount
2 issued and projected amount outstanding as of December 31, 2017. The
3 Premium/Discount and Issuance Expenses column represents legal, underwriting and
4 other miscellaneous costs associated with each issuance. The principal amount issued,
5 adjusted for any premium or discount, less any issuance expenses equals the Net
6 Proceeds. The effective rate is calculated by taking the Net Proceeds at the time of
7 issuance and calculating the Internal Rate of Return based on the interest rate and the
8 years to maturity. After the effective rate is calculated for each individual series, the
9 rates are weighted by taking the effective rate multiplied by each respective amount
10 outstanding divided by the total adjusted amount of long-term debt outstanding.

11 **Q. What long-term debt cost rate do you recommend be utilized in developing Penn
12 Power's overall cost of capital?**

13 A. As indicated in Exhibit JD-23, Penn Power's projected weighted average long-term debt
14 cost rate is 5.88%.

15 **IV. OVERALL COST OF CAPITAL**

16 **Q. How did you calculate Penn Power's overall cost of capital?**

17 A. As set forth in Exhibit JD-24, I quantified and then combined Penn Power's weighted
18 average cost of long-term debt and cost of common equity by multiplying the projected
19 December 31, 2017 capitalization ratios presented in Exhibit JD-22 by: (1) the average
20 cost of debt developed in Exhibit JD-23; and (2) Penn Power's requested return on
21 common equity of 11.50%. The proposed cost of equity is supported by Ms. Pauline

1 Ahern in Penn Power Statement No. 8. Penn Power's overall weighted cost of capital is
2 8.70%.

3 **Q. Does that conclude your direct testimony at this time?**

4 A. Yes, it does.

5

DBI/ 87347215.2

Exhibit 43

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Public Meeting held October 26, 2017

Docket Number: M-2017-2626454

BUREAU OF TECHNICAL UTILITY SERVICES

REPORT ON THE QUARTERLY EARNINGS

OF JURISDICTIONAL UTILITIES

FOR THE YEAR ENDED

June 30, 2017

Gladys M. Brown, Chairman

Andrew G. Place, Vice Chairman: Statement, Dissenting

David W. Sweet, Commissioner

John F. Coleman, Jr., Commissioner

PUBLIC VERSION
TABLE OF CONTENTS

	<u>Page No.</u>
Introduction	4
<p>* UGI Penn Natural Gas, Inc., and Pennsylvania American Water Company have pending rate filings at Docket Nos. R-2016-2580030, and R-2017-2595853, respectively, and filed a letter with the Secretary in place of a report in accordance with 52 Pa. Code § 71.4.</p>	
Attachment A – Summary of Equity Returns	5
Attachment B – Summary of Returns	12
<p>This chart depicts the overall and equity returns (actual and adjusted) for the filing utilities for the current quarter. The last authorized equity return and the year authorized is also shown.</p>	
Attachment C – Allowed Rates of Return on Common Equity	14
<p>This is a historical chart that shows the most recent fully litigated rate cases for select companies in electric, gas, and water. A docket number followed by their final return on equity and year is also given.</p>	
Attachment D – Distribution System Improvement Charge Return on Equity	15
<p>Compares utility adjusted return on equity to Commission authorized return on equity for utilities with a Distribution System Improvement Charge.</p>	
Attachment E – Explanation of Return on Equity Methods	16
<p>Criteria for determining the industry barometer groups used in ROE calculations. Also, provides details of the Discounted Cash Flow equation and Capital Asset Pricing Model equation.</p>	
Attachment F – Market Based Returns on Equity – Electric	18
<p>The market indicated common equity cost rate range consists of data used from the electric barometer groups and is based on a series of calculations to average the DCF methods. Also, indicates Distribution System Improvement Charge Return.</p>	
Attachment F – Historic DCF and CAPM – Electric	19
<p>Historic barometer group DCF and CAPM average ROEs, including a linear trend line graph.</p>	
Attachment F – Electric Barometer Group Calculation of a Current and 52 Week Average Dividend Yield	20
<p>Electric barometer companies are used to calculate a current DCF in the first chart. The second chart demonstrates the companies 52 week average DCF. A final average of the two calculations is also shown at the bottom.</p>	
Attachment F – Development of a Representative Dividend Growth Rate	21
<p>Multiple sources of the gas barometer companies projected 5 year Earnings Per Share are used to calculate the Group Average Dividend Growth Estimate.</p>	
Attachment G – Market Based Returns on Equity – Gas	22
<p>The market indicated common equity cost rate range consists of data used from the gas barometer groups and is based on a series of calculations to average the DCF methods. Also, indicates Distribution System Improvement Charge Return.</p>	

Attachment G – Historic DCF and CAPM – Gas	23
Historic barometer group DCF and CAPM average ROEs, including a linear trend line graph.	
Attachment G – Gas Barometer Group Calculation of a Current and 52 Week Average Dividend Yield.....	24
Gas barometer companies are used to calculate a current DCF in the first chart. The second chart demonstrates the companies 52 week average DCF. A final average of the two calculations is also shown at the bottom.	
Attachment G – Development of a Representative Dividend Growth Rate.....	25
Multiple sources of the gas barometer companies projected 5 year Earnings Per Share are used to calculate the Group Average Dividend Growth Estimate.	
Attachment H – Market Based Returns on Equity – Water.....	26
The market indicated common equity cost rate range consists of data used from the water barometer groups and is based on a series of calculations to average the DCF methods. Also, indicates Distribution System Improvement Charge Return.	
Attachment H – Historic DCF and CAPM – Water.....	27
Historic barometer group DCF and CAPM average ROEs, including a linear trend line graph.	
Attachment H – Water Barometer Group Calculation of a Current and 52 Week Average Dividend Yield.....	28
Water barometer companies are used to calculate a current DCF in the first chart. The second chart demonstrates the companies 52 week average DCF. A final average of the two calculations is also shown at the bottom.	
Attachment H – Development of a Representative Dividend Growth Rate.....	29
Multiple sources of the water barometer companies projected 5 year Earnings Per Share are used to calculate the Group Average Dividend Growth Estimate.	

Introduction:

On September 20, 1991, the Commission initiated a rulemaking at L-00910061 pertaining to earnings disclosures by the public utilities subject to its jurisdiction. At that docket, the Commission stated that the submission of accurate, reliable and complete earnings disclosure reports, at regular intervals, is essential to the fulfillment of the broad regulatory oversight responsibilities entrusted to the Commission by the Legislature in the Public Utility Code. The earnings disclosure regulations promulgated by the Commission were adopted October 1, 1992, and published January 23, 1993, at 23 Pa.B. 463. Based upon those regulations, codified at 52 Pa. Code, Chapter 71, a reporting format was developed and distributed to the jurisdictional fixed utilities of Pennsylvania.

All fixed utilities having jurisdictional revenues of \$1,000,000 or more, for a calendar year, are required to file the report by March 31 of each year. Such reports are to be based upon the results of operations for the 12-month period ending December 31 of the prior year. Utilities having more than \$10,000,000 in jurisdictional revenues are also required to file reports for the 12 months ending on March 31, June 30, and September 30 of each year. On November 30, 2004, however, the Pennsylvania General Assembly signed into law Act 183 concerning alternative telecommunications regulation and broadband deployment. As a result of Act 183, the reporting requirements for the PUC jurisdictional telecommunications companies of Pennsylvania have been streamlined at section 3015(e) of the Public Utility Code. A quarterly earnings report is not listed among those reports now required of PUC jurisdictional telecommunications utilities in Pennsylvania and, therefore, this report does not address telephone company earnings.

The reports have been filed for the period ended June 30, 2017.¹ The Finance Staff of the Bureau of Technical Utility Services has reviewed the reports and has prepared this summary report for public release. This report sets forth the achieved return on equity for each company, the last allowed return for that utility, a market return as determined through the analysis of the barometer group data and the most recent returns allowed, per industry, by the Pennsylvania Public Utility Commission and by other regulatory bodies. Where a utility has not filed a report, the reasons for not filing are indicated.

Questions pertaining to the preparation and contents of this Report should be directed to Ms. Erin Laudenslager, Manager - Finance, Bureau of Technical Utility Services, at (717) 705-4364.

¹ UGI Penn Natural Gas, Inc., and Pennsylvania American Water Company have pending rate filings at Docket Nos. R-2016-2580030, and R-2017-2595853, respectively, and filed a letter with the Secretary in place of a report in accordance with 52 Pa. Code § 71.4.

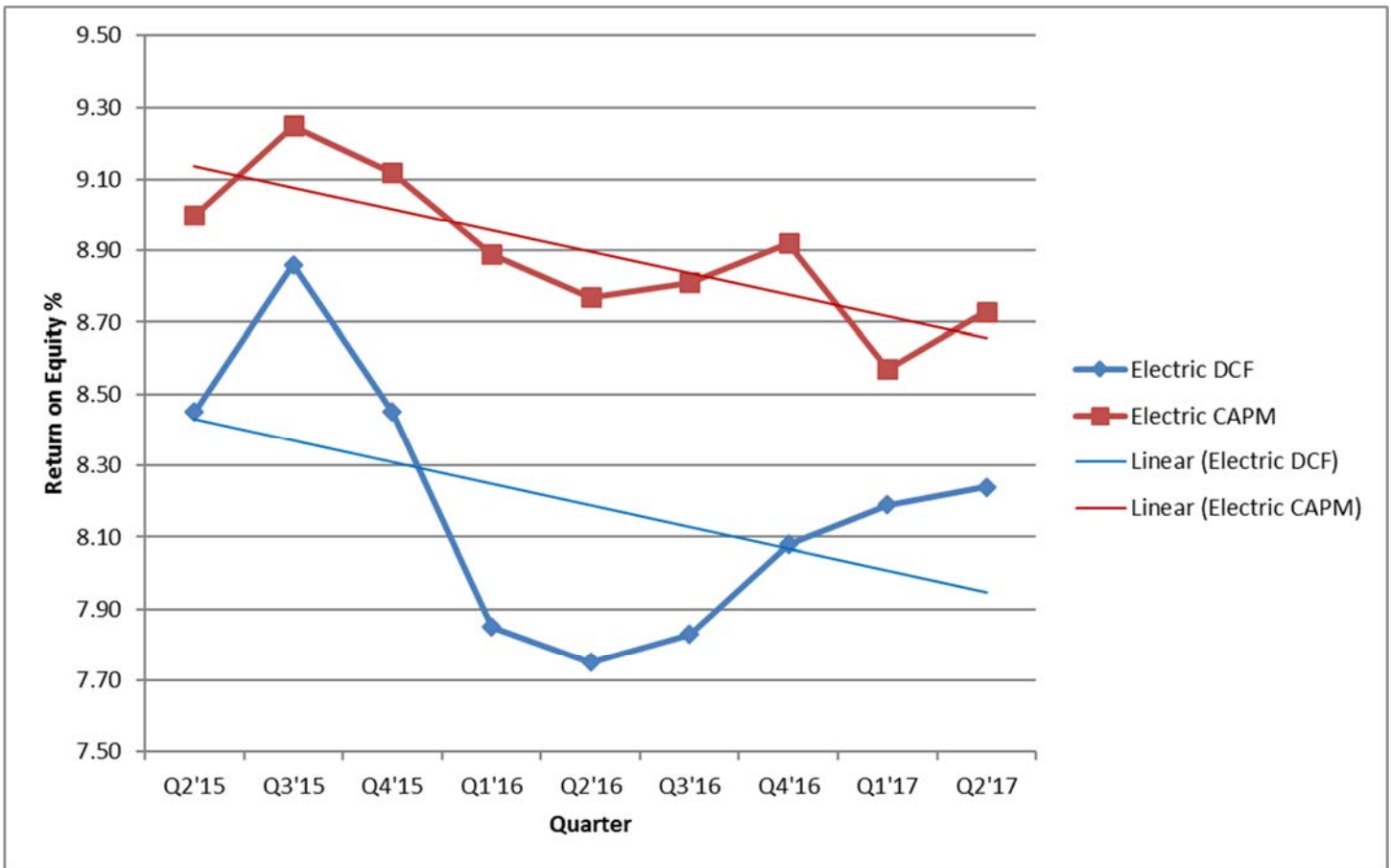
The market indicated common equity cost rate range consists of data used from the barometer groups and is based on a series of calculations to average the DCF methods.

Market Based Returns on Common Equity¹				
September 14, 2017				
<u>Electric Company Barometer Group</u>				
				Cost Rates
				<u>%</u>
(1)	Current DCF:			8.20
(2)	52-Week Average DCF:			<u>8.28</u>
(3)	Overall DCF ((1) + (2)) / 2 :			<u>8.24</u>
(4)	Market Indicated Common Equity Cost Rate Range: @ 1 standard deviation around the mean. ²			<u>7.24-9.25</u>
(5)	CAPM Check of DCF Reasonableness:			8.73
(6)	Recent Commission Approved ROEs ³ : *None within last two years			*
(7)	Distribution System Improvement Charge (DSIC) Return ⁴ :			<u>9.55%</u>
<u>Barometer Group Companies</u>				
Consolidated Edison				
Exelon Corp.				
PPL Corporation				
Public Service Enterprise Group				
SCANA Corp.				
Eversource Energy				
¹ As calculated by the Bureau of Technical Utility Services				
² Standard Deviation of 12 DCF observations				
³ Base rate case ROEs within last two years, fully litigated or stipulated for DSIC purposes				
⁴ Commission authorized Return on Equity (ROE) for DSIC purposes				
Any questions concerning DSIC should be directed to Andrew Herster of the Bureau of Technical Utility Services at (717) 783-5392.				

Historic Electric Industry Barometer Group DCF and CAPM Average ROEs

	Electric	
	DCF	CAPM
Q2'15	8.45	9.00
Q3'15	8.86	9.25
Q4'15	8.45	9.12
Q1'16	7.85	8.89
Q2'16	7.75	8.77
Q3'16	7.83	8.81
Q4'16	8.08	8.92
Q1'17	8.19	8.57
Q2'17	8.24	8.73

Linear Trend Line Chart of Historic Electric Industry DCF and CAPM Average ROEs



Multiple sources of the Barometer companies projected 5 year Earnings Per Share are used to calculate the Group Average Dividend Growth Estimate.

Development of a Representative Dividend Growth Rate for the Barometer Group of Six Electric Companies							
5 Year Forecast							
	Value Line	Value Line	Zack's	Yahoo	Morningstar	Avgerage Earnings	Growth
	<u>DPS</u>	<u>EPS</u>	<u>EPS</u>	<u>EPS</u>	<u>EPS</u>	<u>Growth</u>	<u>Estimate</u>
	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Consolidated Edison	3.00	2.50	3.50	3.97	3.80	3.44	3.44
Exelon Corp.	5.50	7.00	5.00	1.49	6.70	5.05	5.00
PPL Corporation	3.50		5.00	0.04	0.40	1.81	5.00
Public Service Enterprise Group	5.00	1.00	2.40	0.57	3.80	1.94	3.10
SCANA Corp.	5.00	4.00	4.70	4.75	4.60	4.51	4.51
Eversource Energy	5.50	6.50	6.00	5.81	6.10	6.10	5.91
Group Average	4.58	4.20	4.43	2.77	4.23	3.91	4.49
USE							4.50
Sources:	<u>Morningstar</u> , September 14, 2017 (http://financials.morningstar.com)						
	<u>Value Line Investment Survey</u> , September 14, 2017						
	<u>Zacks</u> , September 14, 2017 (www.zacks.com)						
	<u>Yahoo!</u> , September 14, 2017 (http://finance.yahoo.com/)						