



17 North Second Street  
12th Floor  
Harrisburg, PA 17101-1601  
717-731-1970 Main  
717-731-1985 Main Fax  
www.postschell.com

---

Devin Ryan

dryan@postschell.com  
717-612-6052 Direct  
717-731-1981 Direct Fax  
File #: 167945

August 27, 2019

***VIA ELECTRONIC FILING***

Rosemary Chiavetta, Secretary  
Pennsylvania Public Utility Commission  
Commonwealth Keystone Building  
400 North Street, 2nd Floor North  
P.O. Box 3265  
Harrisburg, PA 17105-3265

**Re: Frances Demianczyk v. PPL Electric Utilities Corporation**  
**Docket No. F-2019-3008596**

Dear Secretary Chiavetta:

Enclosed for filing is PPL Electric Utilities Corporation's Motion to Compel in the above-referenced proceeding. Copies will be provided as indicated on the Certificate of Service.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Devin Ryan', is written over a horizontal line.

Devin Ryan

DTR/dmc  
Enclosures

cc: Certificate of Service  
Honorable Elizabeth Barnes (*w/enclosures*)

**CERTIFICATE OF SERVICE**

I hereby certify that a true and correct copy of the foregoing has been served upon the following persons, in the manner indicated, in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a participant).

**VIA FIRST CLASS MAIL**

Frances Demianczyk  
5564 Lincoln Highway  
Gap, PA 17527

Date: August 27, 2019



Devin T. Ryan

**BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Frances Demianczyk,	:	
	:	
Complainant,	:	
	:	
v.	:	Docket No. F-2019-3008596
	:	
PPL Electric Utilities Corporation,	:	
	:	
Respondent.	:	

---

**NOTICE TO PLEAD**

---

YOU ARE HEREBY ADVISED THAT, PURSUANT TO 52 PA. CODE § 5.342(g)(1), YOU MAY FILE A REPLY TO THE ENCLOSED MOTION TO COMPEL WITHIN FIVE (5) DAYS AFTER THE DATE OF SERVICE. YOUR REPLY SHOULD BE FILED WITH THE SECRETARY OF THE PENNSYLVANIA PUBLIC UTILITY COMMISSION, P.O. BOX 3265, HARRISBURG, PA 17105-3265. A COPY OF YOUR REPLY SHOULD ALSO BE SERVED ON THE UNDERSIGNED COUNSEL.

Kimberly A. Klock (ID # 89716)  
Michael J. Shafer (ID # 205681)  
PPL Services Corporation  
Two North Ninth Street  
Allentown, PA 18101  
Phone: 610-774-2599  
Fax: 610-774-4102  
E-mail: [kklock@pplweb.com](mailto:kklock@pplweb.com)  
[mjshafer@pplweb.com](mailto:mjshafer@pplweb.com)



---

Devin T. Ryan (ID # 316602)  
Garrett P. Lent (ID # 321566)  
Post & Schell, P.C.  
17 North Second Street, 12th Floor  
Harrisburg, PA 17101-1601  
Phone: 717-731-1970  
Fax: 717-731-1985  
E-mail: [dryan@postschell.com](mailto:dryan@postschell.com)  
[glent@postschell.com](mailto:glent@postschell.com)

Curtis S. Renner (ID # 326488)  
Watson & Renner  
1901 Pennsylvania Avenue, NW  
Suite 1005 - ENS  
Washington, DC 20006  
Phone: 202-737-6302  
E-mail: [crenner@w-r.com](mailto:crenner@w-r.com)

Date: August 27, 2019

Attorneys for PPL Electric Utilities Corporation

**BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Frances Demianczyk,	:	
	:	
Complainant,	:	
	:	
v.	:	Docket No. F-2019-3008596
	:	
PPL Electric Utilities Corporation,	:	
	:	
Respondent.	:	

---

**MOTION OF PPL ELECTRIC UTILITIES CORPORATION TO  
COMPEL RESPONSES TO  
DISCOVERY PROPOUNDED ON FRANCES DEMIANCZYK – SET I**

---

TO ADMINISTRATIVE LAW JUDGE ELIZABETH H. BARNES:

Pursuant to 52 Pa. Code §§ 5.342(g) and 5.349(d), PPL Electric Utilities Corporation (“PPL Electric” or the “Company”) hereby files this Motion to Compel Responses to Discovery Propounded on Frances Demianczyk (“Complainant”) – Set I. In support of its Motion, PPL Electric states as follows:

**I. INTRODUCTION**

1. On July 3, 2019, PPL Electric served Interrogatories and Requests for Production of Documents on the Complainant – Set I (“PPL to Complainant Set I”) via certified mail. A true and correct copy of PPL to Complainant Set I is attached hereto and marked as **Appendix A**.

2. Pursuant to the Commission’s regulations, objections to PPL to Complainant Set I were due on or before July 16, 2019, and responses were due on or before July 26, 2019.<sup>1</sup>

---

<sup>1</sup> Because the discovery was served via certified mail by the United States Postal Service (“USPS”), three days were added to the prescribed period for response. See 52 Pa. Code § 1.56(b).

3. The Complainant never served any objections or answers to PPL to Complainant Set I.

4. Pursuant to the Prehearing Order dated April 11, 2019, the Complainant was required to serve any documents, expert statements, and reports she intends to present at the hearing on or before August 1, 2019.

5. The Complainant has not served any documents, expert statements, and reports on PPL Electric to date.

6. The Company will be serving its direct testimony and exhibits in this case on September 2, 2019, pursuant to the deadline in the Prehearing Order.

7. On August 16, 2019, counsel for PPL Electric spoke with the Complainant's husband about, among other things, the status of the overdue discovery responses. The Complainant's husband said that the Complainant would provide an update on August 19, 2019.

8. The Complainant did not provide an update on August 19, 2019, about the status of the overdue discovery responses.

9. On August 22, 2019, counsel for PPL Electric received an email from the Complainant containing a document titled "Smart Reader Report." A copy of the "Smart Meter Report" is attached hereto as **Appendix B**. However, the Complainant did not provide written responses to PPL to Complainant Set I.

10. To date, no formal, complete responses to PPL to Complainant Set I have been received.

## II. MOTION TO COMPEL

11. PPL Electric respectfully requests that the Administrative Law Judge Elizabeth H. Barnes (the “ALJ”) direct the Complainant to answer fully all of the interrogatories set forth in PPL to Complainant Set I.

12. Under 52 Pa. Code § 5.321(c), a party is entitled to obtain discovery of any matter not privileged that is relevant to the pending proceeding, or any matter that is reasonably calculated to lead to the discovery of admissible evidence. Discovery is permitted regardless of whether the information sought “relates to the claim or defense of the party seeking discovery or to the claim or defense of another party.” *Id.*

13. Answers to interrogatories are due within 20 days of the service date. 52 Pa. Code § 5.342(d).

14. Here, PPL Electric served its first set of interrogatories on July 3, 2019. Consequently, answers to PPL to Complainant Set I were due on or before July 26, 2019.<sup>2</sup> Therefore, the responses are now well past due.

15. Further, the Complainant never objected to any of the questions in PPL to Complainant Set I.

16. In addition, the interrogatories propounded by PPL Electric are highly relevant to the issues to be decided in this case, including the Complainant’s claim that the new automated meter infrastructure (“AMI”) meter will cause, contribute to, or exacerbate adverse health effects.

17. For example, in its interrogatories, PPL Electric requests information about the Complainant’s cell phone usage as well as information about any devices that emit radio frequency (“RF”) fields that are contained in or used in the Complainant’s house.

---

<sup>2</sup> See note 1, *supra*.

18. The information requested about Complainant's exposure to other devices that emit RF fields is highly relevant to the issues raised in the case.

19. As the testimony of PPL Electric's expert witness on RF exposures – Dr. Christopher Davis – will demonstrate, however, the RF exposures received from use of a cell phone (or even standing within 30 feet of another person using a cell phone) and other devices are far higher than from an AMI meter.

20. PPL Electric is entitled to show how the RF exposures from the Complainant's devices and appliances, including any cell phones, compare to those from the AMI meter.

21. Moreover, the evidentiary hearing is currently scheduled for October 3, 2019, and all exhibits are due to the ALJ by September 30, 2019.

22. Therefore, PPL Electric is filing this Motion to Compel to try to receive answers to the discovery in sufficient time before the evidentiary hearing.

23. In addition, on September 2, 2019, PPL Electric will be serving the statements, reports, written testimony, and exhibits it intends to present at the hearing.

24. PPL Electric reserves the right to supplement or revise any of its exhibits, reports, and statements, to the extent that the Complainant serves any of these discovery responses.

25. For these reasons, PPL Electric respectfully requests that the ALJ grant its Motion to Compel Responses to Discovery.

### **III. SANCTIONS**

26. Upon the motion of a party, the presiding officer may make an appropriate order for sanctions if a party fails to answer or otherwise respond to a discovery request or refuses to obey an order of the presiding officer respecting discovery. *See* 52 Pa. Code § 5.371(a).

27. In ruling upon a motion for sanctions, the presiding officer may, among other things, issue: (1) “[a]n order that the matters regarding which the questions were asked, the character or description of the thing or land, the contents of the paper, or other designated fact shall be taken to be established for the purposes of the action in accordance with the claim of the party obtaining the order”; (2) [a]n order refusing to allow the disobedient party to support or oppose designated claims or defenses, or prohibiting the party from introducing in evidence designated documents, things or testimony”; and (3) “[a]n order striking out pleadings or parts thereof, staying further proceedings until the order is obeyed, or entering a judgment against the disobedient party or individual advising the disobedience.” *Id.* § 5.372(a)(1)-(3).

28. If the Complainant fails to provide full and complete responses to PPL Electric’s discovery requests in sufficient time before the October 3, 2019 hearing, PPL Electric will be deprived of a reasonable opportunity to prepare for the hearing and respond to the Complainant’s claims.

29. Accordingly, the Company respectfully requests that if the Complainant fails to produce the information and documents related to any of her claims by September 19, 2019, then the Complainant should be barred from litigating the corresponding claim(s).

30. For example, if the Complainant fails to produce her medical records to verify the existence of any claimed medical conditions or issues, then the Complainant would be precluded from litigating claims that the installation of PPL Electric’s AMI meter would cause, contribute to, or exacerbate adverse health effects.

31. Similarly, if the Complainant fails to produce information about her current exposure to RF fields as requested in Questions 2 and 3, including but not limited to bills showing the extent of her cell phone use, then the Complainant would be precluded from

litigating claims that PPL Electric's AMI meter would expose her to unreasonable levels of RF fields.

32. Finally, to the extent that this Motion is granted and the Complainant fails to answer fully PPL to Complainant Set I, or otherwise comply with the ALJ's order, PPL Electric intends to file an appropriate motion pursuant to 52 Pa. Code §§ 5.371(a) and 5.372(a) to dismiss the Complaint with prejudice.

33. The Commission has regularly dismissed AMI meter complaints with prejudice due to the complainants' failure to answer discovery in compliance with the presiding administrative law judge's orders granting motions to compel. *See, e.g., Carol Sojda & Carol Lutzkanin v. Metropolitan Edison Co.*, Docket No. C-2017-2638350, pp. 7-8 (Jan. 9, 2019), *adopted*, Docket No. C-2017-2638350 (Order entered Mar. 28, 2019); *Kimberly Beckmann v. Metropolitan Edison Co.*, Docket No. C-2017-2613702, pp. 7-10 (Jan. 31, 2019), *adopted*, Docket No. C-2017-2613702 (Order entered Apr. 11, 2019); *Darlene Stanton v. Pennsylvania Electric Co.*, Docket No. C-2018-3001144, pp. 6-11 (May 10, 2019), *adopted*, Docket No. C-2018-3001144 (Order entered July 11, 2019); *Diana Cook v. West Penn Power Co.*, Docket No. C-2018-3003051, pp. 6-10 (May 1, 2019), *adopted*, Docket No. C-2018-3003051 (Order entered July 11, 2019).

**IV. CONCLUSION**

For the reasons set forth above, PPL Electric Utilities Corporation respectfully requests that Administrative Law Judge Elizabeth H. Barnes grant this Motion to Compel Responses to Discovery and direct Frances Demianczyk to answer fully PPL to Complainant Set I, as described above within three (3) days from the date of the order.

Respectfully submitted,



Kimberly A. Klock (ID # 89716)  
Michael J. Shafer (ID # 205681)  
PPL Services Corporation  
Two North Ninth Street  
Allentown, PA 18101  
Phone: 610-774-2599  
Fax: 610-774-4102  
E-mail: [kklock@pplweb.com](mailto:kklock@pplweb.com)  
[mjshafer@pplweb.com](mailto:mjshafer@pplweb.com)

Devin T. Ryan (ID # 316602)  
Garrett P. Lent (ID # 321566)  
Post & Schell, P.C.  
17 North Second Street, 12th Floor  
Harrisburg, PA 17101-1601  
Phone: 717-731-1970  
Fax: 717-731-1985  
E-mail: [dryan@postschell.com](mailto:dryan@postschell.com)  
[glent@postschell.com](mailto:glent@postschell.com)

Curtis S. Renner (ID # 326488)  
Watson & Renner  
1901 Pennsylvania Avenue, NW  
Suite 1005 - ENS  
Washington, DC 20006  
Phone: 202-737-6302  
E-mail: [crenner@w-r.com](mailto:crenner@w-r.com)

Date: August 27, 2019

Attorneys for PPL Electric Utilities Corporation

# **APPENDIX A**

## **Interrogatories and Requests for Production of Documents Propounded by PPL Electric Utilities Corporation on Frances Demianczyk – Set I**

**BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

Frances Demianczyk,	:	
	:	
Complainant	:	
	:	
v.	:	Docket No. F-2019-3008596
	:	
PPL Electric Utilities Corporation,	:	
	:	
Respondent	:	

---

**INTERROGATORIES AND REQUESTS FOR  
PRODUCTION OF DOCUMENTS PROPOUNDED BY  
PPL ELECTRIC UTILITIES CORPORATION ON  
FRANCES DEMIANCZYK – SET I**

---

Pursuant to 66 Pa.C.S. § 333 and 52 Pa. Code §§ 5.341 *et seq.*, PPL Electric Utilities Corporation (“PPL Electric”) propounds the following Interrogatories and Requests for Production of Documents (hereinafter, “discovery requests”) on Frances Demianczyk (“Complainant”) – Set I.

**INSTRUCTIONS AND DEFINITIONS**

1. The “Responding Party,” “you,” or “your” means the party to which these discovery requests are propounded and/or all attorneys, agents, affiliates, subsidiaries, employees, consultants, members, constituents, and representatives acting on behalf of the Responding Party.
2. “Commission” means the Pennsylvania Public Utility Commission.
3. To “identify” a natural person means to state that person’s full name, title or position, employer, last known address, and last known telephone number.

4. To “identify” a business entity means to state the full name of such business, the form of the business, and its location or address.

5. To “identify” a “document” means to provide all of the following information irrespective of whether the document is deemed privileged or subject to any claim of privilege:

- a. The title or other means of identification of each such document;
- b. The date of each such document;
- c. The author, preparer or signer of each such document; and
- d. A description of the subject matter of such document sufficient to permit an understanding of its contents and importance to the testimony or position being examined and the present or last known location of the document. The specific nature of the document should also be stated (*e.g.*, letter, business record, memorandum, computer print-out, etc.).

In lieu of “identifying” any document, it shall be deemed a sufficient compliance with these discovery requests to attach a copy of each such document to the answers hereto and reference said document in the particular interrogatory to which the document is responsive.

6. “Document” means the original and all drafts of all written and graphic matter, however produced or reproduced, of any kind or description, whether or not sent or received, and all copies thereof which are different in any way from the original (whether by interlineation, date-stamp, notarization, indication of copies sent or received, or otherwise), including without limitation, any paper, book, account, photograph, blueprint, drawing, sketch, schematic, agreement, contract, memorandum, press release, circular, advertising material, correspondence, letter, telegram, telex, object, report, opinion, investigation, record, transcript, hearing, meeting, study, notation, working paper, summary, intra-office communication, diary, chart, minutes, index sheet, computer software, computer-generated records or files, however stored, check, check stub, delivery ticket, bill of lading, invoice, record or recording or summary of any telephone or other conversation, or of any interview or of any conference, or

any other written, recorded, transcribed, punched, taped, filmed, or graphic matter of which the Responding Party has or has had possession, custody or control, or of which the Responding Party has knowledge.

7. "Communication" means any manner or form of information or message transmission, however produced or reproduced, whether as a document as herein defined, or orally or otherwise, which is made, distributed, or circulated between or among persons, or data storage or processing units.

8. "Date" means the exact day, month, and year, if ascertainable, or if not, the best approximation thereof.

9. Items referred to in the singular include those in the plural, and items referred to in the plural include those in the singular.

10. Items referred to in the masculine include those in the feminine, and items referred to in the feminine include those in the masculine.

11. The answers provided to these discovery requests should first restate the question asked and identify the person(s) supplying the information.

12. In answering these discovery requests, the Responding Party is requested to furnish all information that is available to the Responding Party, including information in the possession of the Responding Party's attorneys, agents, consultants, or investigators, and not merely such information of the Responding Party's own knowledge. If any of the discovery requests cannot be answered in full after exercising due diligence to secure the requested information, please so state and answer to the extent possible, specifying the Responding Party's inability to answer the remainder, and stating whatever information the Responding

Party has concerning the unanswered portions. If the Responding Party's answer is qualified in any particular, please set forth the details of such qualification.

13. If the Responding Party objects to providing any document requested on any ground, identify such document by describing it as set forth in Instruction 5 and state the basis of the objection.

14. If the Responding Party objects to part of a discovery request and refuses to answer that part, state the Responding Party's objection and answer the remaining portion of that discovery request. If the Responding Party objects to the scope or time period of a discovery request and refuses to answer for that scope or time period, state the Responding Party's objection and answer the discovery request for the scope or time period that the Responding Party believes is appropriate.

15. If, in connection with a discovery request, the Responding Party contends that any information, otherwise subject to discovery, is covered by either the attorney-client privilege, the so-called "attorneys' work product doctrine," or any other privilege or doctrine, then specify the general subject matter of the information and the basis to support each such objection.

16. If any information is withheld on grounds of privilege or other protection from disclosure, provide the following information: (a) every person to whom such information has been communicated and from whom such information was learned; (b) the nature and subject matter of the information; and (c) the basis on which the privilege or other protection from disclosure is claimed.

17. As set forth in 52 Pa. Code § 5.342(g), these discovery requests are continuing, and the Responding Party is obliged to change, supplement, and correct all answers given to conform to new or changing information.

18. “Formal Complaint” means the Formal Complaint filed by the Complainant at Docket No. F-2019-3008596.

**INTERROGATORIES AND REQUESTS FOR  
PRODUCTION OF DOCUMENTS PROPOUNDED ON  
FRANCES DEMIANCZYK – SET I**

PPL to Complainant-I-1

Re: Formal Complaint.

- (a) Please explain in detail the reasons why you are challenging the Company's installation of the new smart meter.
- (b) Please describe in detail all health concerns, if any, raised by the Company's new smart meter, state the bases for such claims, and provide all documents relied upon by you in your response.
- (c) Please describe in detail all safety concerns, if any, raised by the Company's new smart meter, state the bases for such claims, and provide all documents relied upon by you in your response.
- (d) Please describe in detail all privacy concerns, if any, raised by the Company's new smart meter, state the bases for such claims, and provide all documents relied upon by you in your response.
- (e) Please describe in detail all reasons you believe the Company's new smart meter violates the law.

PPL to Complainant-I-2

Please identify all wireless phones, cellphones, microwaves, wireless routers, wifi networks, tablets, computers, Bluetooth speakers, wireless security systems, smart speakers (*e.g.*, Amazon Echo), garage door openers, baby monitors, and walkie talkies that are contained in or used in the house.

PPL to Complainant-I-3

Please state whether you or any member of your household uses a cell phone. If so, please provide the make and model of each cell phone and, for each phone identified, provide 12 months of phone bills or other records of actual cell phone usage.

PPL to Complainant-I-4

- (a) Please state every health condition you claim was caused by a smart meter or will be caused or worsened by the installation of PPL Electric's new smart meter.
- (b) Please provide the date that every health condition identified in subpart (a) began.

- (c) Please provide copies of all your medical records of every health condition identified in subpart (a).
- (d) For each alleged health condition that you do not have medical records for in response to subpart (c), please state whether such condition was diagnosed by a medical professional. If so, please provide the name, address, and telephone number of the medical professional and the date of the diagnosis.
- (e) For each of the alleged health conditions identified in subpart (a), please state whether you have been prescribed any therapy or treatment for the condition by a medical professional. If so, please identify the therapy or treatment, provide the name, address, and telephone number of the prescribing medical professional, and provide the date the therapy or treatment was prescribed.

PPL to Complainant-I-5

Please identify each person you plan to call as a fact witness in this proceeding. For each person, please:

- (a) Provide the person's name, home and business address, background, and qualifications;
- (b) Explain in detail the subject matter(s) on which the witness is expected to testify; and
- (c) Provide the source(s) of information relied upon or referenced by the witness.

PPL to Complainant-I-6

Please identify each person you plan to call as an expert witness in this proceeding. For each person, please:

- (a) Provide the person's name, home and business address, background, and qualifications;
- (b) Explain in detail the subject matter(s) on which the witness is expected to testify;
- (c) Provide the source(s) of information relied upon or referenced by the witness; and
- (d) Provide a copy of the expert witness's current curriculum vitae.

PPL to Complainant-I-7

Please provide copies of all exhibits you intend to present or utilize at the evidentiary hearing in this proceeding. For each exhibit to be used as part of your direct case, please identify the witness who will be sponsoring the exhibit.

# **APPENDIX B**

**“Smart Reader Report” Sent by Frances Demianczyk on  
August 22, 2019**



Frances Demianczyk  
5565 Lincoln Hwy.  
Gap, PA 17527  
August 22, 2019

# Smart Reader Report

## Health:

There are so many health problems with these smart meters. Basically we're talking about the same effects of EMFs (electromagnetic fields). Now we all know that EMFs have been in the news a lot and that there is a lot of evidence mounting about the health risks of such radiation from microwaves, cell phones, WIFI, and the like.

In case you haven't seen some of this, or aren't convinced of it, following are some health conditions that are reported to be as a result of EMF exposure (Source):

- Insomnia
- Heart palpitations and blood pressure increases
- Ringing in the ears
- Concentration, memory or learning problems
- Dangerous increases in blood-sugar levels
- Strange sensations in the body—including buzzing, shooting pains
- Anxiety and/or an anxious feeling in the body that is inexplicable
- Fatigue
- Flu-like symptoms Scientists have shown that the electromagnetic frequencies emitted by smart meters and digital meters:
  - Disrupt the blood-brain barrier, contributing to diseases like dementia and Parkinson's.
  - Disrupt nerve transmission, causing attention-related problems, insomnia, heart palpitations, and muscle pain.
  - Disrupt cell reproduction and damage DNA, causing cancer and rapid aging.

- Disrupt the redox balance through oxidant/nitrosative stress and CANCER.

The World Health Organization (WHO) has classified the radiation that comes from Smart Meters as a potential carcinogen, in the same class as DDT and lead. Also, if you think that the FCC has protected you enough with their limits on human exposure to microwave radiation, Smart Meters have been known to *exceed* the FCC limits.

There's been a lot of debate out there about whether or not this type of radiation (RF, or radio frequency waves) causes cancer or not, but some of the studies coming out are quite compelling. This recent one from Sweden being one of them. I think of it like this.

- Years ago we were told that cigarettes were healthy (they were even promoted as a way to have a lower weight baby). We know better now.
- We were told that fluoride should be in our drinking water. That is being called into question.
- We were told that RoundUp would evaporate and not cause harm. We know better now.

## **Privacy:**

The data collected from Smart Meters is detailed and it's worth money. Data is ALWAYS worth money. Companies pay BIG money for information on your buying habits, for your email address, and more.

It seems that these EMFs are a big deal and we are just starting to see the damage.

If you REALLY want to read some downright frightening and well-done research about EMF radiation and health problems, the BioInitiative Report will keep you busy for awhile.

# Scientific Studies on Electromagnetic Frequencies An Overview:

**CALCIUM EFFLUX AND EMS**  
LEARNMORE FROM  
**ANDREW GOLDWORTHY**  
**CARL BLACKMAN**  
AND OTHERS

**Abstract:** The effects of electromagnetic fields (EMF) on the membrane potential of excitable cells are discussed. The effects of EMF on the membrane potential of excitable cells are discussed. The effects of EMF on the membrane potential of excitable cells are discussed.

**Introduction:** The effects of electromagnetic fields (EMF) on the membrane potential of excitable cells are discussed. The effects of EMF on the membrane potential of excitable cells are discussed.

**References:**

- 1. ...
- 2. ...
- 3. ...
- 4. ...
- 5. ...
- 6. ...
- 7. ...
- 8. ...
- 9. ...
- 10. ...
- 11. ...
- 12. ...
- 13. ...
- 14. ...
- 15. ...
- 16. ...
- 17. ...
- 18. ...
- 19. ...
- 20. ...
- 21. ...
- 22. ...
- 23. ...
- 24. ...
- 25. ...
- 26. ...
- 27. ...
- 28. ...
- 29. ...
- 30. ...
- 31. ...
- 32. ...
- 33. ...
- 34. ...
- 35. ...
- 36. ...
- 37. ...
- 38. ...
- 39. ...
- 40. ...
- 41. ...
- 42. ...
- 43. ...
- 44. ...
- 45. ...
- 46. ...
- 47. ...
- 48. ...
- 49. ...
- 50. ...

Click on the picture to go to the link.

## Most Independent Studies Show Biological Effects:

The majority of *all* studies done on the biological effects of EMFs show harm to biological systems. These studies have been carried out since the 1930s. As corporations began to make more and more money from wireless and digital devices, they began contracting with scientists to “replicate” these studies, changing a variable or two (for instance, studying something for one month instead of two years). Their non-independent studies invariably show that non-ionizing fields do not have health effects. Yet the thousands of independent, non-industry-funded scientific studies (reported in, for example, The Bioinitiative Report; Handbook of Biological Effects of Electromagnetic Fields (2006); Forty Scientists; ) have shown that the electromagnetic frequencies emitted by smart and digital meters can cause severe health problems, including cancer, Parkinson’s, ADD, and the breaching of the blood-brain barrier.

## **Industry Claims:**

Utility company claims that advanced (smart) meters are no worse than a cell phone, baby monitor, or garage door opener are completely inaccurate. Daniel Hirsch, Professor of Nuclear Policy at the University of California–Santa Cruz, calculated that the whole-body cumulative radiation exposure from wireless meters is 100–150 times more than cell phone exposure. When utilities say that the emissions are low, less than a cell phone, they are using the time-averaged amount, not the actual amount being broadcast at a given moment. In fact, the amount given out in a single burst can be 200 times the stated average.

## **Suppression of Evidence:**

In July 2012, scientists met to release new studies on how wireless and digital devices severely affect the brain, changing its morphology. These stories are rarely reported in the mainstream media. See this article in GQ and this article in the University of Washington Alumni Magazine for information on how the industry has covered up this information. One of the first researchers into radio frequency, Allan Frey, published a study in 1962 that had been commissioned by his employer, General Electric. The company wanted to understand why radar operators were suffering from severe tinnitus (ringing in the ears). Frey discovered it was the RF. He continued to do research in the field, but as GE realized that we were moving toward a wireless age, they began to discredit his work. This has been the path industry has taken with most scientists who were originally employed by industry and found health effects. Much more information can be found with an Internet search.

For more information on how and why data has been suppressed, see Frey 2012, where he reports: “For example, after my colleagues and I published in 1975 that exposure to very weak microwave radiation opens the regulatory interface known as the blood brain barrier (bbb), a critical protection for the brain, the Brooks AFB group selected a contractor to supposedly replicate our experiment. For 2 years, this contractor presented data at scientific conferences stating that microwave radiation had no effect on the bbb. After much pressure from the scientific community, he finally

revealed that he had not, in fact, replicated our work. We had injected dye into the femoral vein of lab rats after exposure to microwaves and observed the dye in the brain within 5 minutes. The Brooks contractor had stuck a needle into the animals' bellies and sprayed the dye onto their intestines. Thus it is no surprise that when he looked at the brain 5 minutes later, he did not see any dye; the dye had yet to make it into the circulatory system." For a synopsis of misconceptions about the safety of many electromagnetic frequencies, go to <http://www.emfwise.com/myth.php>.

### **Some Recent Studies:**

The director of National Institute of Drug Abuse, Dr. Norma Volkow, has released a study finding that exposure to just 50 minutes of cell phone radiation stresses the brain, releasing free radicals and stress proteins that significantly reduce brain function—and may cause tumors. Smart meters expose us to radiation 24/7. No one is on their cell phone 24/7.

Because smart meter radiation causes the blood-brain barrier to leak, it's implicated in Alzheimer's, dementia, and Parkinson's. Of course, other toxins can act on the body to cause the diseases as well. Just like you can cause a fire with a match, a lighting strike, or a gas explosion, there's more than one way to cause dementia, autism, hypothyroidism, and insomnia. Smart meter electromagnetic frequencies disrupt our production of melatonin, a sleep and mood hormone.

The fact that pulsed electromagnetic fields—both radio frequency and the kind you get from the switched mode power supplies in the smart and opt-out meters—knock calcium ions off the cell membranes and cause calcium to pour out of the cells, explains the vast majority of health problems caused by these meters. See the section below, How Can Smart Meters and Digital Meters Cause Such a Vast Array of Health Problems?

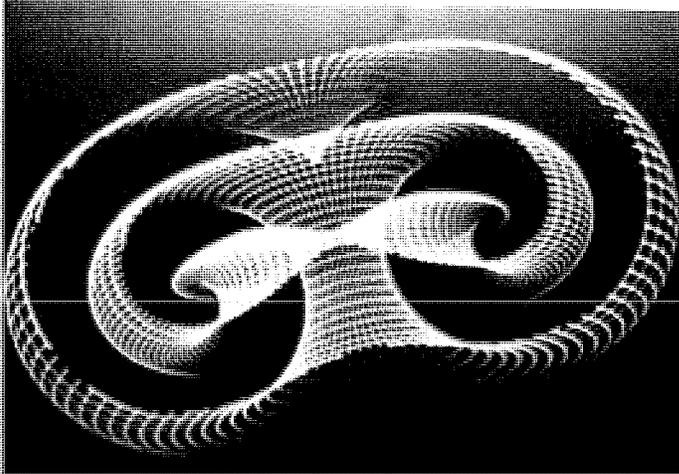
VERY IMPORTANT: The dirty electricity put out by smart meters is as much a cause of health problems as the radio frequency radiation. This is why DTE's opt-out plan, which uses a smart meter with the radio-transmitter turned off, will not protect your health. See this Prevention Magazine article for a discussion of dirty electricity.

This chart from the BioInitiative 2012 report summarizes many of the health effects resulting from various EMFs.

[Click here](#) for an extensive list of scientific studies indicating that RF and pulsed electromagnetic fields (dirty electricity) are harmful to health.

## **How Can Smart Meters and Digital Meters Cause Such a Vast Array of Health Problems?**

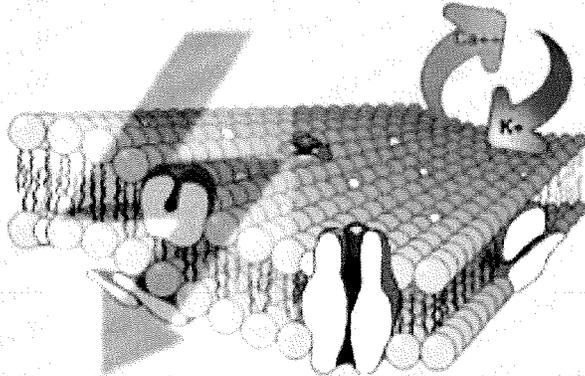
### **A Lot of It's About Calcium Ions in Your Body**



**The electromagnetic field of the human heart. From Arthur Winfree, University of Arizona, *When Time Breaks Down*.**

Some people think that people are making up their symptoms. But here's the reality: Electromagnetism, the same force that runs our computers and phones, runs our bodies. Our brains and hearts are electrical conduction systems. That's why pacemakers work, and that's why people can have seizures. The electromagnetic forces in our bodies transmit information essential to life. They do this in the form of ions, which are positively or negatively charged chemicals, and voltage differences across the cell membrane. It comes as no surprise, then, that the electromagnetic frequencies that we use in our modern society have an effect on our bodies and our health. Smart and digital meters interfere with the electrical conduction systems in our bodies, in part by changing the way an important cellular messenger, calcium, is used. Calcium is a ubiquitous cellular messenger. Because it sends signals to all different kinds of cells, it

can affect everything from your ability to sleep to whether your thyroid functions properly.



LOW FREQUENCY ALTERNATING FIELDS, AND HIGH FREQUENCY RADIATION IN SPECIFIC LOW FREQUENCY PULSED AMPLITUDE MODULATION WINDOWS, "CATAPULT" POSITIVELY CHARGED DIVALENT CALCIUM OFF THE NEGATIVELY CHARGED CELL MEMBRANES. AT LOW FREQUENCIES, IT MAY BE REPLACED BY MONOVALENT POTASSIUM (WHICH IS MUCH HIGHER IN CONCENTRATION AND MORE ENERGETIC AND CHEMICALLY ACTIVE DUE TO CYCLOTRON RESONANCE). POTASSIUM BONDING IS NOT AS PROTECTIVE TO MEMBRANES AND ALLOWS MORE (POTENTIALLY TOXIC) SUBSTANCES TO ENTER THE CYTOPLASM.

Electromagnetic radiation that is far too weak to generate significant heating effect (this is the standard used by the government to judge whether smart meters are safe) can nevertheless remove calcium ions from cell surfaces. Dr Andrew Goldsworthy, of the Imperial College, London, explains how the loss of these ions can make cell membranes leak, which in turn gives rise to the symptoms. Dr Goldsworthy spent many years studying calcium metabolism in living cells and also how cells, tissues, and organisms are affected by electrical and electromagnetic fields. He is on the Life Sciences Advisory Group for the European Space Agency. Not only is Dr Goldsworthy well-versed in electromagnetic forces from both a biological and physico-chemical point of view, he is an amateur radio enthusiast who deeply appreciates the technological ingenuity that has led to our wireless world. The following is a synopsis of his work. Citations follow this synopsis.

Calcium ions are the primary messengers of cellular activity and impact nearly every aspect of cellular life (David Clapham, "Calcium Signaling," in the journal Cell [2007]). They relay vital signals from hormones, the immune system, and neurotransmitters. Their proper

ratio in various parts of the body is essential to health. It is the effect of radiofrequency (RF) radiation and of what is commonly called “dirty electricity” (a.k.a., *noise on the line, power quality issues, voltage transients and harmonics*) on calcium ions that is responsible for many of the health consequences associated with smart meters. Its effect on melatonin production is another major factor. There a number of ways unnatural electromagnetic frequencies affect calcium.

Each of our cells is surrounded by a membrane that is just two molecules thick. The inside of that membrane has a negative charge. The outside has a positive charge because of the calcium ions that are bound to it (see picture). These calcium ions do a couple of things. They hold the cell membrane together like the mortar holding together the bricks of a wall. The alternating electromagnetic fields produced by smart meters tend to dislodge the calcium ions. This weakens the membrane and makes it more inclined to leak out the contents of the cell. It doesn't take much energy to do this. Cell membranes keep apart materials that should not be allowed to mix.

What happens when the cell membrane leaks? It depends on the cells affected.

- It can disrupt the blood-brain barrier. This may be implicated in Alzheimer's, Parkinson's, and dementia, all of which have been on the increase in our society.
- It can cause attentional problems, either short-term during exposure to RF, or, in the case of children, whose brains are developing, long-term problems as their developing brain circuits become hard-wired.
- It can cause lysosomes (small bodies in living cells packed with digestive enzymes) to release DNAase, an enzyme that destroys DNA.
- It can cause allergies, inflammation, and asthma.
- It can cause tinnitus.
- It can cause insomnia because the brain is being flooded with calcium ions.
- It can affect how genes are replicated. These are just a few of the effects.

Calcium is the ion that controls messages within cells; it controls a cascade of cellular functions. When the membrane becomes leaky, too much calcium can move into the cell. This affects the cells' ability to produce energy and pump out appropriate enzymes for digestion and other metabolic processes.

Calcium is the major regulator of nerve impulses. When the calcium gradient is disrupted, it affects nerve transmission in multiple ways, disrupting cells' ability to communicate with each other. This, of course, has consequences for brain function. All of the effects reported from exposure to RF radiation and dirty electricity can be accounted for by the effects of these electromagnetic fields on calcium ions and on melatonin.

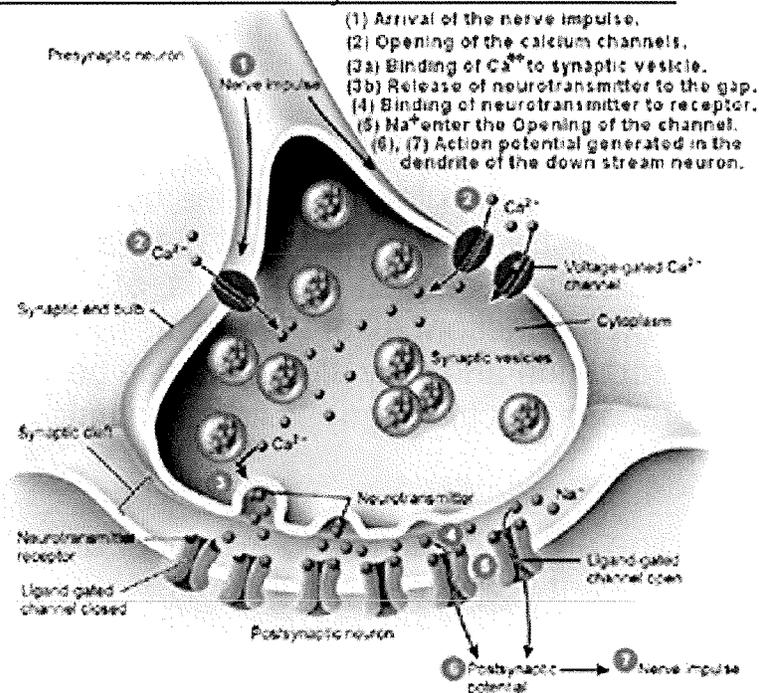
The effects on the cell membrane are also implicated in cancer and in the reduction we have seen in recent years in sperm counts. While some people immediately feel the effects of RF radiation and dirty electricity, many people do not. Rather, the effects show up as "health problems" down the road—lower sperm counts, cancer, infertility, fatigue. For people who are genetically predisposed to these problems, the disruption of calcium ions by RF can tip the balance. Think of this: A smart meter puts out 100–160 times more radiation than a cell phone. The current from the meter flows through the wiring of your house and workplace 24/7.

Thirty-five percent of Americans will experience the negative health effects of RF radiation and dirty electricity after prolonged exposure. Imagine the increased costs of health care. Imagine the human suffering.

Here is a list of articles by Dr Andrew Goldsworthy. The first one is the simplest to read:

[Electromagnetic Fields and Health: Executive Report](#)  
[Summary of Health Effects and Causes in Easily Understandable Language](#)  
[Health Effects of Electromagnetic Radiation](#)  
[The Dangers of Electromagnetic Smog](#)

## The Biological Effects of Weak Electromagnetic Fields Andrew Goldsworthy Witness Statement



Voltage-gated calcium ion channels.

### Wi-Fi in Schools

## Modern Day Electromagnetic Frequencies and Effects on Human Health

Dr. Martin Pall, professor emeritus at Washington State University, recently reported, in the *Journal of Cellular and Molecular Medicine*, that research makes it clear that the main mechanism by which non-ionizing electromagnetic frequencies (ELF and radiofrequency) affect the body is via voltage-gated calcium channels (very similar to the findings made by Goldsworthy). A calcium channel is a molecule that permits or prevents the passage of a calcium ion from the outside to the inside of a cell.

Once inside the cell, the calcium ion stimulates the cell's chemistry to perform such tasks as making proteins, contracting muscles, releasing hormones, and firing neurons. Virtually every cell in the body uses calcium channels to respond to biological signals. If the cells are

getting signals when they shouldn't, they do things they shouldn't do—for instance, heart muscle contracts, the brain sends signals that keep you awake. If a calcium-channel blocker—the same type of thing as a beta blocker—is administered, the negative effects are blocked. Pall notes that it has been commonly held that only ionizing radiation can have negative health effects (via tissue heating), but notes that there are 20,000 studies reporting biological effects from non-ionizing radiation.

The important thing to understand is that the calcium ion does what it does because it is electrically charged—which means both it and its channel respond to electromagnetic fields. Pall notes: “Microwave electromagnetic fields do not work by heating. They produce health effects by VGCC (voltage-gated calcium channel) activation.”

### **Links to the Thousands of Scientific Studies:**

Please [click here](#) to access a listing of thousands of scientific studies that have been done on electromagnetic frequencies and health. In addition, see the [Bioinitiative Report](#), also reporting thousands of studies, and [Handbook of Biological Effects of Electromagnetic Fields \(2006\)](#). Click [here](#) for an article summarizing some of the studies done—ranging from effects on calcium to autism.

### **Why are smart meters and digital meters harmful to health?**

The pulsing microwave radiation that wireless meters emit has more severe biological effects than the continuous radiation put out by other wireless devices. The whole-body cumulative radiation exposure from wireless meters is 100–160 times more than cell phone exposure. When utilities say that the emissions are low, less than a cell phone, they are using the time-averaged amount, not the actual amount being broadcast at a given moment. In fact, the amount given out in a single burst can be 200 times the stated average.

Iron smart meters, the meters used by DTE, can put out bursts of microwave radiation from 9,600 to 190,000 times a day. The Public Utilities Commission tell you they emit for just 45 seconds a day. That

is the total amount of transmission time, but the bursts are occurring every 2 to 9 seconds in millisecond blasts. Think of a jackhammer going off and on every day, 24/7. That is what the cells in your body experience as smart meter bursts hit every 2 to 9 seconds. Cells cannot handle this, and the variety of effects listed above begin to happen. Some people can actually feel the radiation, but many people can't. Instead, the effects show up down the road as "health problems of uncertain origin."

Another glaring omission from the Public Utility Commission computations is that in a neighborhood of mesh networked meters constantly chirping to each other, one is likely to be hit by several meters' transmissions, not just one's own meter. Thus, you are likely being hit much more often than the every 0.5 to 9 seconds. Banks of meters on businesses and apartments have the worse emissions because they are clustered in groups.

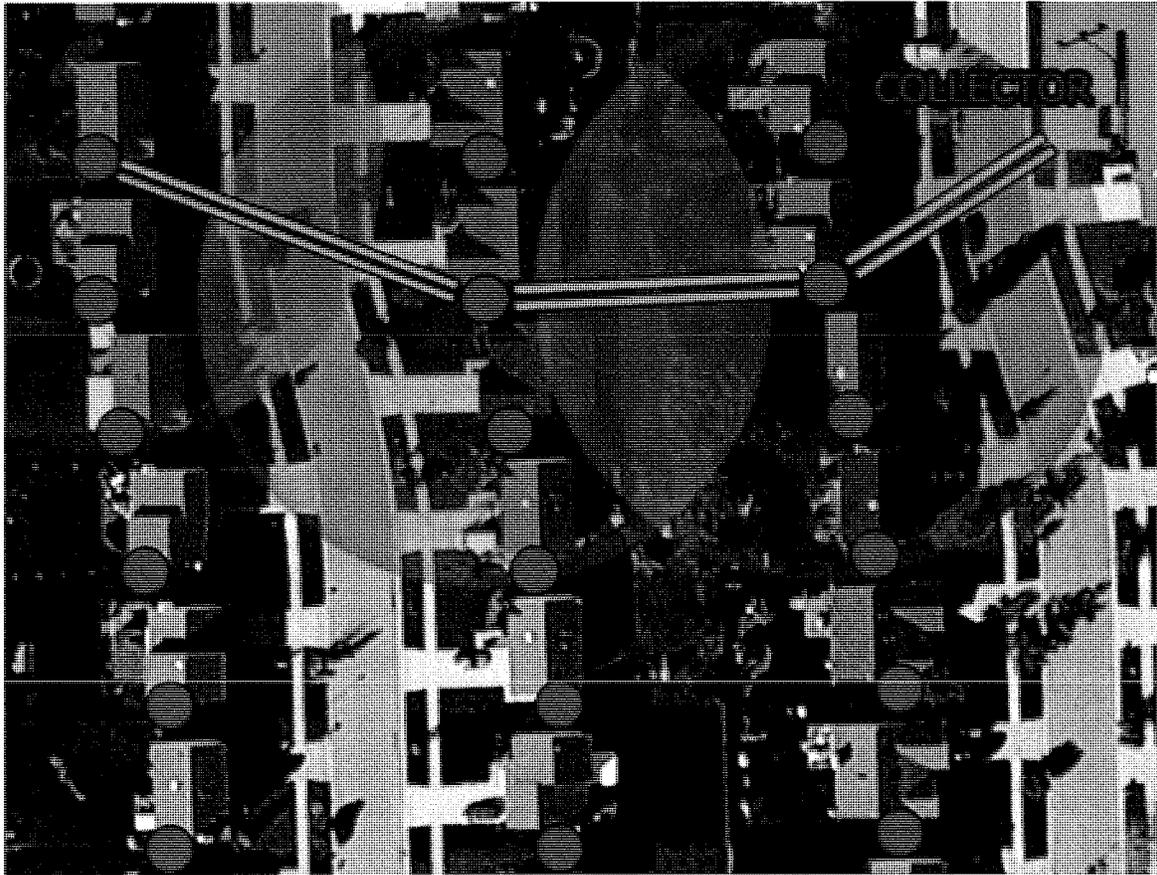
## **How Smart Meters Transmit and Why This Matters Hot Spots and Amplification**

Here is a picture of what most people think of when they think of smart-meter signaling. One meter on a house, a little burst a few times a day that travels in a straight line. This is the kind of thing the utility companies show you, convincing you, "Oh, it's just one little meter. No big deal." In fact, the meters do not spread the radiofrequency waves in a straight line, as this picture would imply. Rather, the waves radiate from their source in all directions. 24/7. It's not just the person standing in the red line that will get a dose of RF.



This picture represents the incorrect notion most people have about microwave transmission from smart meters. Smart meters are in fact emitting radiation 24/7 for 2 or more miles.

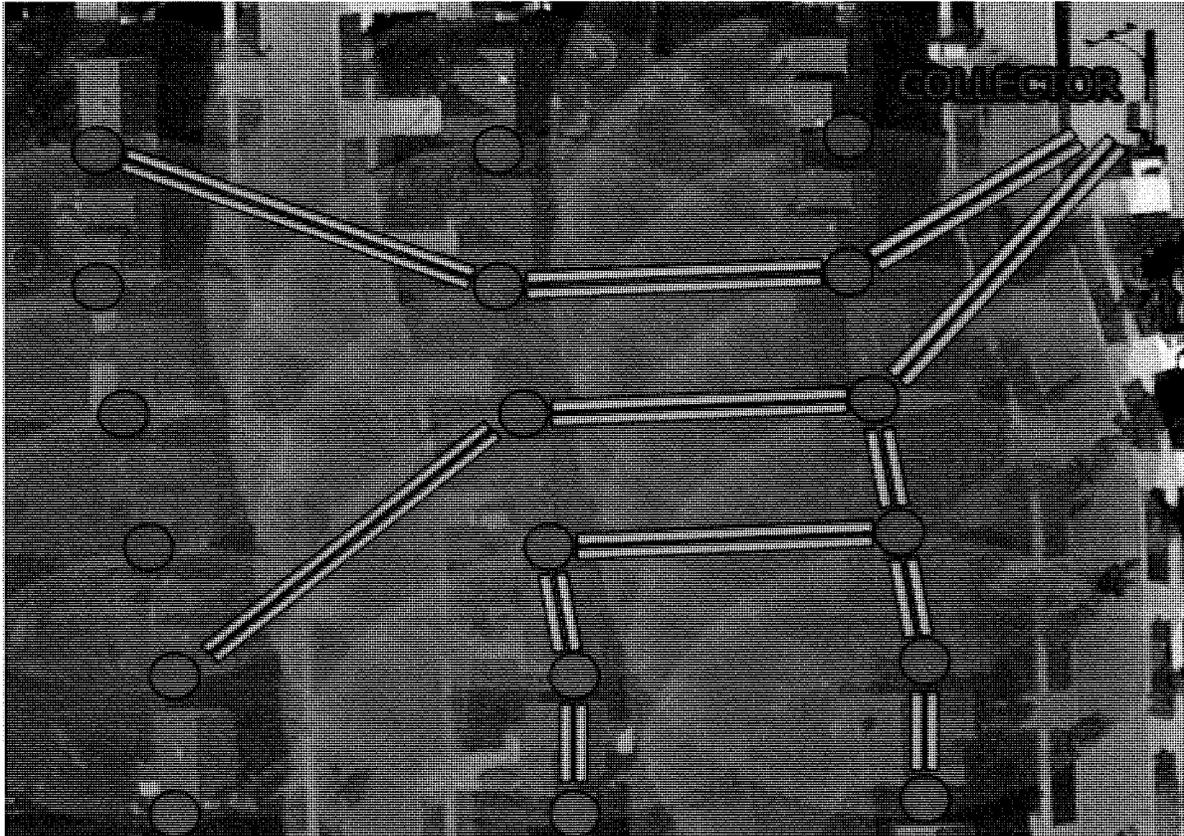
Here's a picture of just three smart meters communicating with each other. The red dots represent meters. (For the time being, you can ignore the red and blue lines in the picture.)



Notice that the meters send out microwave radiation in all directions, which is represented here by the large circles. If we could show you this in three dimensions, the circles would become globes. Where the microwaves (radiofrequency signals) sent out by meters overlap, there are hot-spots of higher-than-expected radiation. The meters can transmit a strong signal for two miles, so these circles represent only a fraction of the actual transmission distance. Keep in mind that many homes have more than one meter, and in addition there are smart gas meters and, in many places, smart water meters, all of which are also transmitting 24/7.

The picture below shows you what it's really like. Each one of these circles (globes) you see on this picture is pulsing in millisecond blasts. If people could see this—if it were like smoke, or smog—we'd be cleaning it up right away! In fact, it's known as electro-smog. Dr. Karl Maret calculated in 2010 that background RF radiation had increased 20,000 times since 1980. With the widespread introduction of smart

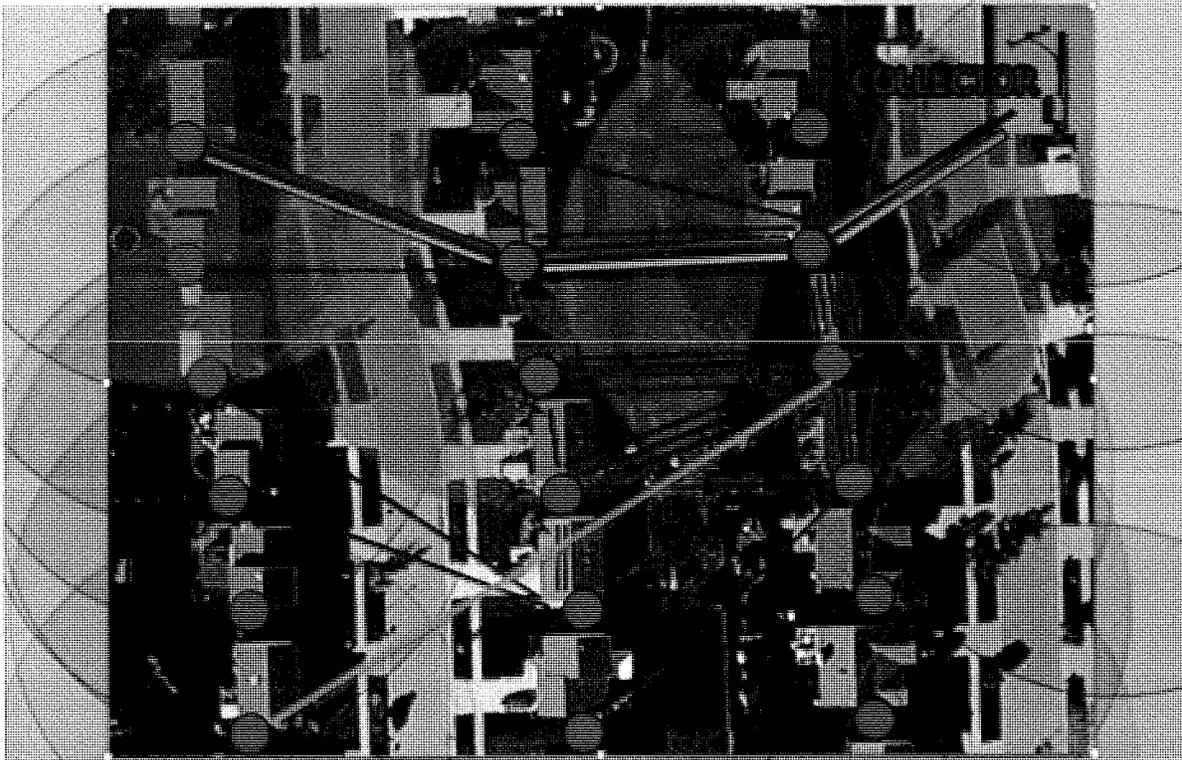
meters across the country in the last few years, that number has increased exponentially. If people could see this—if it were like smoke, or smog—we'd be cleaning it up right away! In fact, it's known as electro-smog.



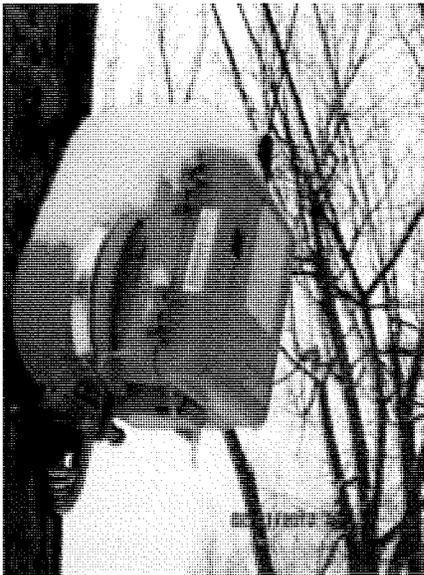
Smart meter electrosmog, represented by the large red circles. The small circles represent meters. Many houses have more than one electric meter, in addition to smart gas and water meters, as well as Wi-Fi.

Let's take a moment to learn about collector meters, meter chatter, and mesh networks because they have important implications for health. As we mentioned, smart meters send information (data on your electricity usage) to the utility about 6 times a day. However, the meters are chattering with (talking to) one another constantly, comprising what is known as a *mesh network*. It is this "chatter" (incessant signaling) that accounts for the 9,600 to 190,000 transmissions per day. Unlike a cell-phone network, which has large antennas that capture and transmit data, with individual phones moving around and connecting to the closest antenna in order to

utilize the network, a mesh network has no centralized antennas. Every meter in the network can connect to every other one. A DTE employee has told us that one in every 17 or so homes or office buildings is the collection point for all the meter transmissions in an area. As this employee put it, “We know the person who has a collecting meter on their home is going to have a funeral coming up soon.”



Representation of meters signalling to each other. Signals can travel meter to meter (represented by the red lines), or a meter can skip many meters (the latter represented by the green line). One or more of these meters is a collector meter, which receives many more signals than the other meters because it is the “gathering point” that meters send their data to. The collector meter then sends data to a data collection unit, which is often mounted on a telephone pole. Meters chatter with each other 24/7. This picture cannot even begin to represent the multitude of signals. At the same time that all this is happening, the data collection unit and collector meter may be sending signals *back* to the meters (signals back represented by the red lines).



DTE data collection unit or relay station mounted on a telephone pole. Note the antenna.

The meters send their data to a *collector meter*—which is mounted on someone’s home—by passing it meter to meter. The collector meter gathers all the data in the area and sends it to a *data collection unit*, which is often mounted on a telephone pole. The closer your meter is to the collector, the more transmissions—pulses of radiation—you are receiving each day. Keep in mind, the meters are chattering with one another constantly. And not just with one meter—with multiple. So there are transmissions far and beyond what is represented in the picture—a *single* transmission could actually consist of 80 queries. Multiply that by 40 or so meters, and you have 3200 “single” transmissions. Multiply that by 190,000. You see where that leads. The collector meter asks another meter for data. It is querying meters constantly. There can be 40 meters in a network, which means it could be querying 40 meters every few seconds. Each meter sends its data to the meter closest to it, then that one to the next one, etc. So a single transmission could consist of up to 80 queries ( $40 \times 2 =$  [the query  $\times$  40] + [the signal back  $\times$  40]). The meter closest to the collector would only have to send its query to the collector, so it has 2 transmissions per query. BUT—the meter closest to the collector is receiving all the other signals.

Signals can travel meter to meter (represented by the blue lines), or a meter can skip many meters (the latter represented by the green line). This picture cannot even begin to represent the multitude of signals. At the same time that all this is happening, the data collection unit and collector meter may be sending signals *back* to the meters (represented by the red lines). To see pictures of the various types of data collection units and to read more about them, read our [Data Collection Unit](#) page.

In addition to the RF from your smart meter and all the other meters in your city, you are getting dosed with microwave radiation from the [ZigBee](#) wireless radio that connects with all the “smart” appliances DTE and the appliance manufacturers hope you will soon be buying. This Zigbee is not turned off, so *radio-off opt-out meter* is a misnomer. We’ll talk about the privacy implications of this later. The Zigbee radio sends RF signals into your home, polling your smart appliances in the same way DTE smart meters poll the other meters in the neighborhood. If you have a smart meter, all this data can potentially be sent back to the utility, letting them know what kinds of appliances you have in your home and when and how you use them. Learn more on our [Privacy](#) page. The Zigbee also connects with your gas meter. The 2.4 GHz that it operates at is harmful to health.

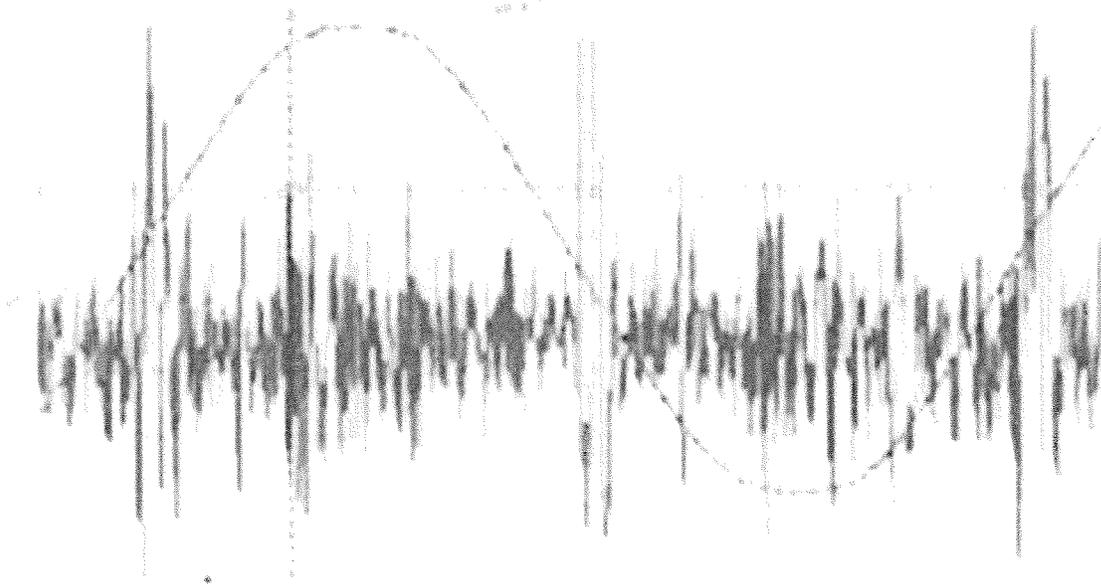
## **Dirty Electricity**

### **What Is Dirty Electricity (Electromagnetic Interference)?**

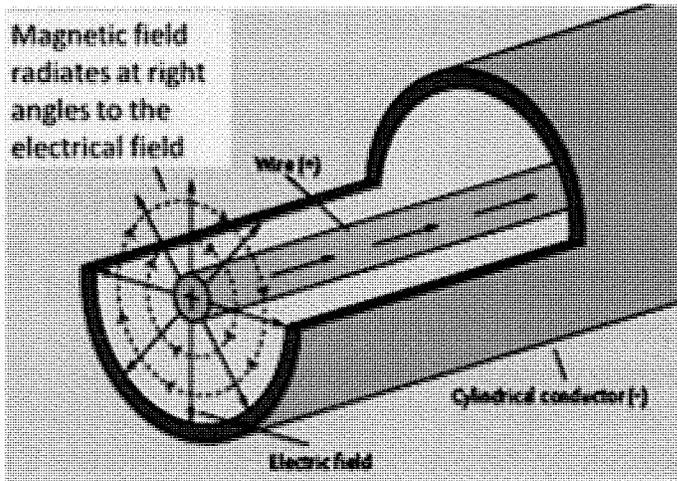
*So, you might be thinking, all this sounds pretty bad. Why not just have DTE put the opt-out meter on your home and save yourself a big fight?* The reason is, the smart meter not only emits RF, it also generates what is commonly known as *dirty electricity* (a.k.a., *line noise* or *power quality issues*). Dirty electricity is pulsed electromagnetic radiation, and causes numerous health problems. We also discuss dirty electricity on our [Dirty Electricity](#) page. This page will give you some of the same as well as different information that what you will find on our [Dirty Electricity](#) page, so we suggest you read both pages.

In order to run the smart meter or any digital meter— the 240 volts coming off the power line to the meter must be stepped down to 4–10 volts. Otherwise, the computer circuitry in the meter will be fried out. A switched mode power supply inside the meter steps down the voltage, then steps it back up to 120 volts, the voltage that powers your home. This process of stepping down and stepping up generates an enormous amount of what is commonly known as “dirty electricity” and referred to by electricians and electrical engineers as “voltage transients,” “harmonics,” “line noise,” “power quality issues,” or “electromagnetic interference.”

Here you see a picture of dirty electricity. Notice how spiky and variable it is

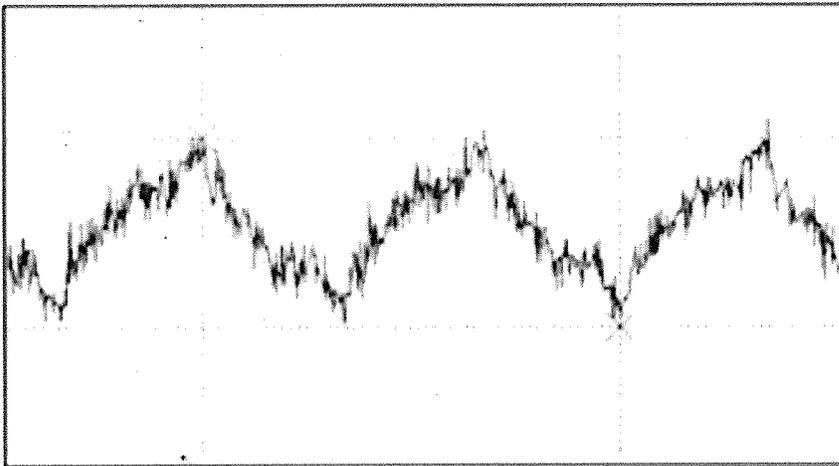


The blue wave you see running through this is a so-called *clean wave*. There are no spikes, no variability. That is what the electricity running through your home *should* look like. Scientific studies indicate that *pulsed* electromagnetic waves—which includes dirty electricity and the radio frequency waves emitted by smart meters—are especially deleterious to health. Learn more on our [Health](#) page, and read more below.

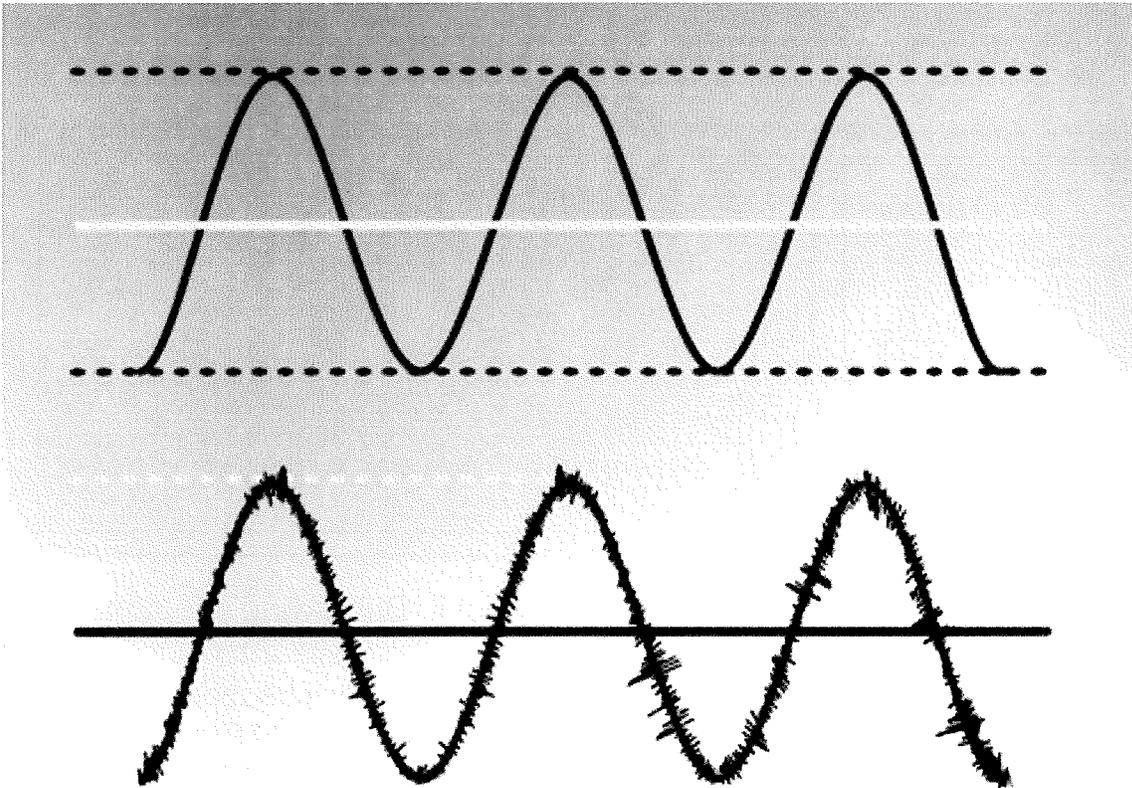


This dirty electricity travels through your home wiring. The magnetic field radiates out from your home wiring, into the room you are in. You are surrounded by it above—in your ceiling; below, if you have a basement; and on all sides. You are being hit with millisecond blasts of dirty electricity, similar to the smart meter pulses we discussed earlier.

Notice in the picture below how dirty electricity is similar to the pictures you saw earlier of the spiky RF from smart meters.



Here is another way to understand dirty electricity. The first wave in the picture below shows a “clean” electromagnetic wave, the kind you would find in your home wiring if it weren’t for smart meters and other forms of electromagnetic interference. Every second the wave peaks. It is consistent.



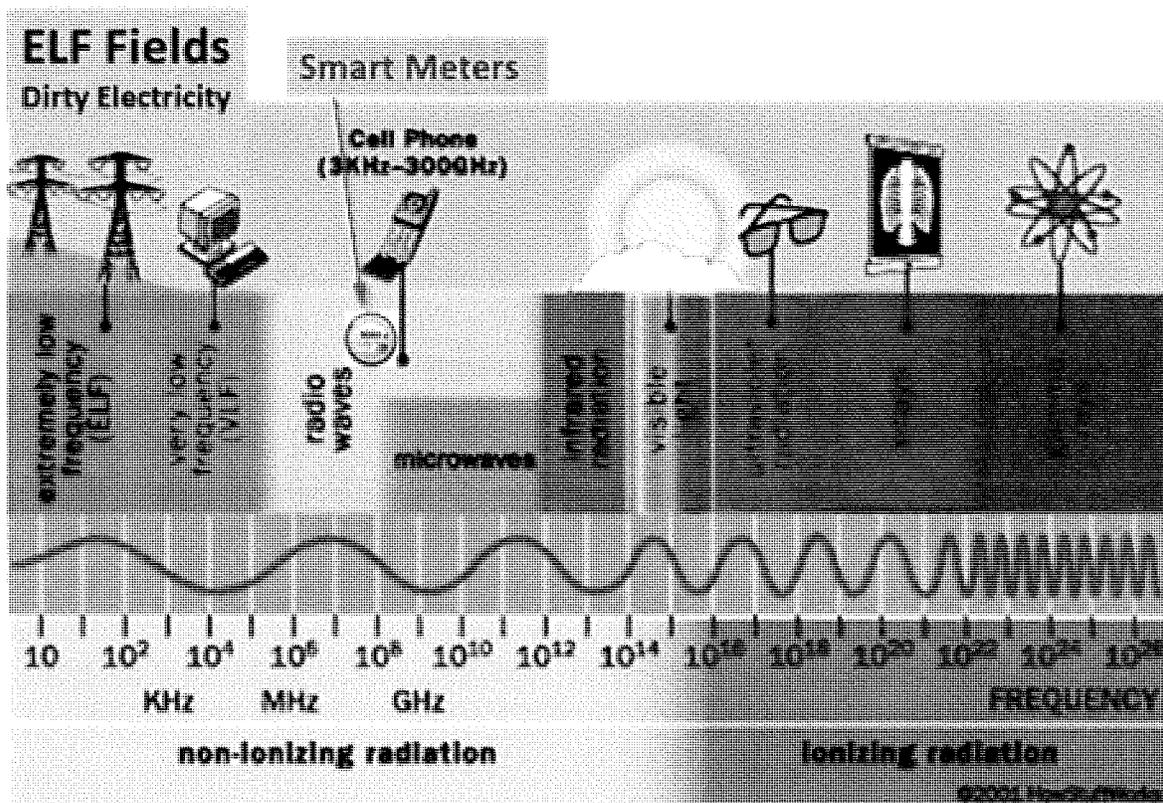
Most people’s bodies adapt to this regularly occurring wave. The bottom wave shows how dirty electricity “rides” on this wave. You can see why dirty electricity is also known as “electromagnetic interference” and “line noise.” These frequencies are extremely difficult to filter out. This picture is from a company that manufactures filters to filter out line noise. As the company’s website notes, “Any imperfections in this signal can adversely affect electrical equipment, causing poor performance, incorrect functionality or damage to sensitive circuitry.” This helps you understand why some people report that their appliances have been fried out after smart meter installation. Smart meter frequencies are extremely difficult to filter out,



During the Cold War the Russian Embassy microwaved the U.S. embassy in Moscow with low-level microwaves. Many of the personnel eventually died of cancers. The power of the microwaves used by the Russians was often much less than the power emitted by the new smart meters!

### Smart Meter Radiation:

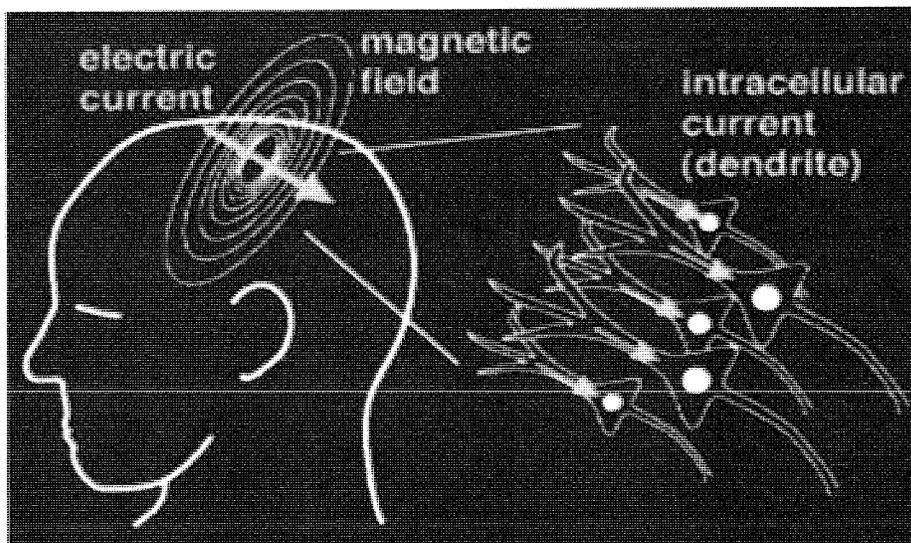
The electromagnetic spectrum is divided up into a number of categories. The wireless radiation emitted by smart meters is known as *radiofrequency radiation (RF)* or *microwave radiation*. Smart meter radiation falls near cell phone radiation on the electromagnetic spectrum. At the left end, you find what is known as extremely low frequency, or ELF, radiation.



This is the radiation that our cells use to communicate with each other and that is used in nerve transmission. The 60 Hertz of your home wiring is ELF radiation, and is generally a continuous, smooth wave. The dirty electricity

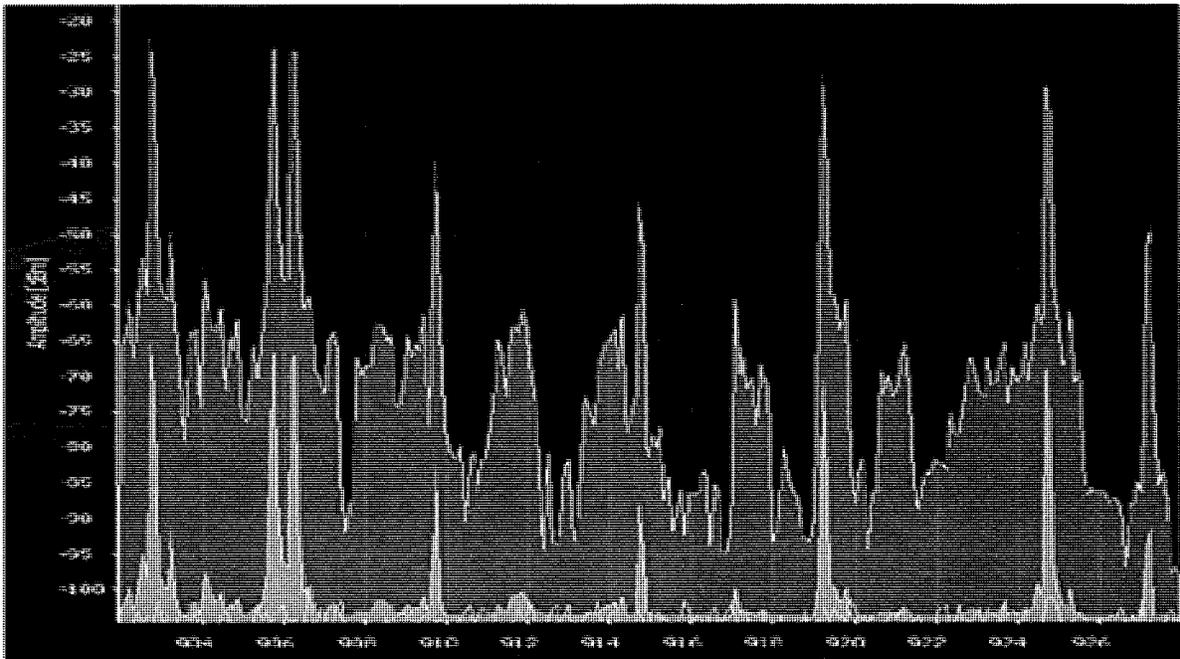
that is generated by smart meters is also ELF radiation, but this ELF radiation is pulsed and spiky rather than continuous and smooth.

Our bodies communicate thru electromagnetic and chemical signals, so the electromagnetic spectrum matters. We didn't evolve to handle these smart-meter frequencies, especially not in huge 24/7 amounts.



### **How Often Do Smart Meters Really Transmit? Are There Really Only 6 Transmissions Per Day?**

DTE and other utility companies will tell you that their smart meters transmit only 6 or so times a day. Take a look at the picture below. This is a graph of just a half hour of smart meter transmissions. Does this look like 6 transmissions per day? No. This data was captured by engineers working for EPRI, the Electric Power Research Institute, a group that is a strong proponent of smart meters. It records the transmissions of Itron smart meters, which are the meters used by DTE. Read the full [report](#).



The truth is, smart meters transmit pulses of wireless radiation between 9,600 to 190,000 times per day. If you call up DTE or Consumers Energy and ask them how often their smart meters transmit, they will tell you something like “6 times a day.” This is what all the utility companies say, and they are lying. PG&E, the California equivalent of DTE, publicly stated in all its materials that its meters transmit only 6 times a day. When the court ordered it to submit data on the *actual* number of transmissions, the utility had to admit that its **smart meters transmit 9,600 to 190,000 times per day!**

## **More Information:**

**[BioInitiative Report - Summary](#)**

**[EmfSafetyNetwork.org Survey results: wireless meters impact health and safety & THE REPORT](#)**

**[40 Scientists on Smart Meters--Correcting the Gross Misinformation](#)**

**[ICEMS - Non-Thermal Effects and Mechanisms of Interaction Between Electromagnetic Fields and Living Matter \(Summary, Part 1, Part 2\)](#)**

**[Bees, Birds and Mankind](#)**

**[SMART METER RISKS MPSC—RADIO FREQUENCY THREATS TO THE PUBLIC HEALTH AND SAFETY](#)**

## **Biological Effects from RF Radiation at Low-Intensity Exposure, based on the BioInitiative 2012 Report, and the Implications for Smart Meters and Smart Appliances**

### **Some of the Scientists Who Find That EMFs of All Types Affect Health:**

*This is a partial list. As noted, there are thousands of scientific studies, and nearly as many scientists.*

- David O. Carpenter, MD, Director, Institute for Health & the Environment, University at Albany, USA
- Franz Adlkofer, M.D., Chairman of the Pandora Foundation, Coordinator of the European Reflex Report on DNA-damage by cellphone radiation, Neuendorf, Germany
- M. S. H. Al Salameh, PhD, Professor of Electrical Engineering, University of Science & Technology, Irbid, Jordan
- Jennifer Armstrong, MD, Past President, American Society for Environmental Medicine, Founder, Ottawa Environmental Health Clinic, Ontario, Canada
- Pierre L. Auger, MD, Occupational medicine, Multiclinique des accidentés 1464, Montreal, Quebec, Canada
- Igor Beliaev, PhD, Head research scientist, Cancer Research Institute, Slovak Academy of Sciences, Bratislava, Slovak republic
- Fiorella Belpoggi, PhD, Director Cesare Maltoni Cancer Research Center, Ramazzini Institute, Bologna, Italy
- Dominique Belpomme, MD, Director of the European Cancer and Environment Research Institute, Brussels, Belgium
- Martin Blank, PhD, former President, Bioelectromagnetics Society, Special Lecturer, Department of Physiology and Cellular Biophysics, Columbia University Medical Center, New York, USA
- Barry Breger, MD, Centre d'intégration somatosophique (orthomolecular medicine), Montreal, Quebec
- Simona Carrubba, PhD, Prof. Biophysics, Daemen College, Amherst, NY, Associate Researcher, Neurology, Buffalo General Hospital, Buffalo, NY
- John Cline, MD, Professor, Institute for Functional Medicine, Federal Way, WA, USA, Medical Director, Cline Medical Centre, Nanaimo, BC, Canada
- Alvaro Augusto de Salles, PhD, Professor of Electrical Engineering, Federal University of Rio Grande do Sul, Porto Alegre, Brazil
- Christos Georgiou, Prof. Biochemistry, Biology Department, University of Patras, Greece
- Andrew Goldsworthy, PhD, Honorary lecturer in Biology, Imperial College, London, UK
- Claudio Gómez-Perretta, MD, Director, Centro de Investigación, Hospital Universitario LA Fe, Valencia, Spain
- Livio Giuliani, PhD, Senior Researcher, National Insurance Institute (INAIL), Chief of Radiation and Ultrasounds Research Unit, Rome, Italy
- Yury Grigoriev, PhD, Chair Russian National Committee on Non-Ionizing Radiation Protection, Moscow, Russia
- Settimio Grimaldi, PhD, Director, Institute of Translational Pharmacology (Neurobiology and molecular medicine), National Research Council, Rome, Italy
- Magda Havas, PhD, Centre for Health Studies, Trent University, Canada

- Lennart Hardell, MD, Professor of Oncology, University Hospital, Örebro, Sweden
- Denis L. Henshaw, PhD, Professor of Physics, Head of The Human Radiation Effects Group, University of Bristol, UK
- Ronald B. Herberman, MD, Chairman of Board, Environmental Health Trust, and Founding Director emeritus, University of Pittsburgh Cancer Institute, USA
- Donald Hillman, PhD, Dairy Science, Professor Emeritus, Department of Animal Science, Michigan State University, USA
- Isaac Jamieson, PhD, Environmental Science (electromagnetic phenomena in the built environment), independent architect, scientist and environmental consultant, Hertfordshire, UK
- Olle Johansson, PhD, Professor of Neuroscience (Experimental Dermatology Unit), Karolinska Institute, Stockholm, Sweden
- Yury Kronn, PhD, Soviet authority on physics of nonlinear vibrations and high frequency electromagnetic vibrations, founder of Energy Tools International, Oregon, USA
- Vini G. Khurana, MBBS, Associate of Professor of Neurosurgery, Australian National University, Australia
- Henry Lai, PhD, Professor of Bioengineering, University of Washington School of Medicine, Seattle, WA, USA
- Abraham R. Liboff, PhD, Professor Emeritus, Department of Physics, Oakland University, Rochester, Michigan, USA
- Don Maisch, PhD, Researcher on radiation exposure standards for telecommunications frequency, EMFacts Consultancy, Tasmania, Australia
- Erica Mallery-Blythe, MD, Emergency Medicine Physician, England
- Andrew A. Marino, MD, Professor of Neurology, LSU Health Sciences Center, Shreveport, LA, USA
- Karl Maret, MD, President, Dove Health Alliance, Aptos, CA, USA
- Fiorenzo Marinelli, PhD, Researcher on biological effects of EMFs, Institute of Molecular Genetics, National Research Council, Bologna, Italy
- Andrew Michrowski, PhD, Director, Planetary Association for Clean Energy, Ottawa, Canada
- Sam Milham, MD, former chief epidemiologist, Washington State Department of Health, USA
- Joel M. Moskowitz, PhD, Director, Center for Family and Community Health, School of Public Health, University of California, Berkeley
- Gerd Oberfeld, MD, Public Health Department, Salzburg State Government, Austria
- Mike O'Carroll, PhD, Professor Emeritus (Applied Mathematics), University of Sunderland, UK
- Jerry L. Phillips, PhD, Director, Center for Excellence in Science, Department of Chemistry and Biochemistry, University of Colorado, USA
- John Podd, PhD, Professor of Psychology (experimental neuropsychology), Massey University, New-Zeland
- William J. Rea, MD, thoracic and cardiovascular surgeon, founder of the Environmental Health Center, Dallas, Tx, USA
- Elihu D. Richter, MD, Professor, Hebrew University-Hadassah School of Public Health and Community Medicine, Jerusalem, Israel
- Leif G. Salford, MD, Senior Professor of Neurosurgery, Lund University, Sweden
- Nesrin Seyhan, MD, Founder and Chair of Biophysics, Medical Faculty of Gazi University, Turkey

- [Cyril W. Smith](#), PhD, lead author of “Electromagnetic Man”, retired from Electronic and Electrical Engineering, University of Salford, UK
- [Morando Soffritti](#), MD, Scientific Director of the European Foundation for Oncology and Environmental Sciences “B. Ramazzini” in Bologna, Italy
- [Carlos Sosa](#), MD, surgeon affected by the Microwave syndrome, Medellin, Columbia
- [Antoinette “Toni” Stein](#), PhD, Collaborative on Health and the Environment (CHE-EMF Working Group), Co-Coordinator, Berkeley, CA, USA
- [Stanislaw Szmigielski](#), MD, PhD Professor of Pathophysiology, Consulting Expert, former director of Microwave Safety, Military Institute of Hygiene and Epidemiology, Warsaw, Poland
- [Lauraine Vivian](#), PhD, Senior Lecturer, Primary Health Care Directorate, Faculty of Health Sciences, University of Cape Town, South Africa.
- [Bradford S. Weeks](#), MD, Director, The Weeks Clinic, Clinton, WA, USA
- [Stelios A. Zinelis](#), MD, Vice-President, Hellenic Cancer Society, Cefallonia, Greece

## **More Information:**

### **BioInitiative Report - Summary**

### **EmfSafetyNetwork.org Survey results: wireless meters impact health and safety & THE REPORT**

### **40 Scientists on Smart Meters--Correcting the Gross Misinformation ICEMS - Non-Thermal Effects and Mechanisms of Interaction Between Electromagnetic Fields and Living Matter (Summary, Part 1, Part 2)**

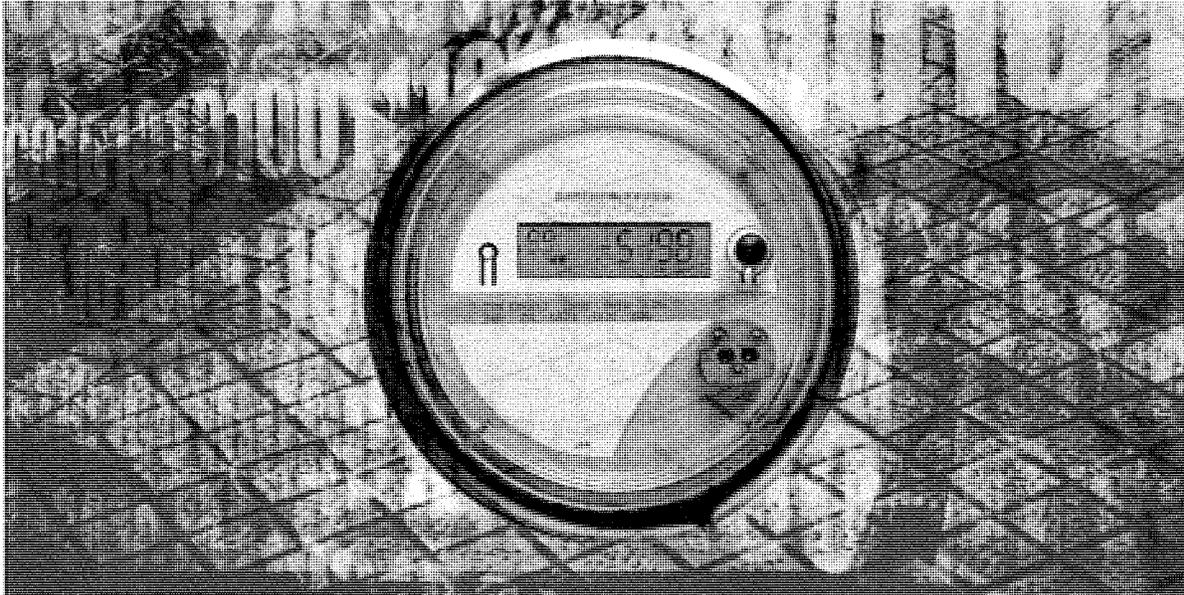
### **Bees, Birds and Mankind**

### **Biological Effects from RF Radiation at Low-Intensity Exposure, based on the BioInitiative 2012 Report, and the Implications for Smart Meters and Smart Appliances**

**AMI Smart Meters ILLEGALLY Forced On Pennsylvania Consumers;  
Act 129 States “Not Mandatory”**

**TOPICS: Catherine Frompovich EMF Smart Meters**

**FEBRUARY 16, 2017**



By **Catherine J. Frompovich**

*Advanced Metering Infrastructure (AMI) utility Smart Meters for electric, natural gas and water are being forced onto Pennsylvania utility customers by utility companies backed up by the Pennsylvania Public Utility Commission's (PA PUC) implementation rules and regulations, i.e., AMI SMs are “mandatory,” which are in total contradiction to **the Legislative History, intent, enactment, and what was published in official public state records declaring AMI Smart Meters are not mandated!***

**Basically, the bill SB2200, as passed by the PA Legislature, is/was an “opt IN bill”! Refer to HB2200 §2807(f)7(2)(i)!**

I refused an AMI Smart Meter and have kept one off my home's electric service for several years citing health reasons, as I'm a breast cancer survivor who does not want to be exposed to non-thermal radiation waves smart meters emit in various ways, including possible – but scientifically documented – adverse health issues attributed to non-thermal radiation harms from microwave technology per published global scientific peer review research.

As a result of the formal complaint I filed with the PA PUC, I had a two-day hearing before two PA PUC Administrative Law Court Judges (Heep and Pell in Philadelphia) and squared off against four PECO expert witness and three PECO attorneys. I must say I held my ground in spite of PECO's objecting to the cancer studies and research regarding microwave EMF/RF/ELF radiation and cancer(s) I tried entering into the hearing record, especially the fifteen human male and female breast cancers documented as part of a compendium of almost 240 cancers studies attributed to EMF/RF/ELF. Those studies really got PECO's attorneys' britches twisted! They had to do everything they could to keep them out of the record, and they did.

AMI Smart Meters operate on microwaves to send, receive and collect information to and from the meter(s) at customers' homes. Those messages can occur every 15 seconds, which can allow "dirty electricity" (harmonics or sinusoidal waves) to travel over the copper wires inside the walls of customers' homes every 15 seconds every hour, every day of every month of every year, as customers cannot turn them off like you can your cell phone, microwave oven, etc.



What I've uncovered regarding the illegality of Act 129 (2008) the PA PUC states it is enforcing is totally different from, ***and contrary to, what the State Legislature actually passed, i.e., HB2200. Basically, the PA PUC***

***changed the law from not mandated to mandatory while drafting implementation rules and regulations for AMI SMs in Pennsylvania.***

As a result of my hearing November 2-3, 2016, I had to file a Brief due January 25, 2017 and a Respondent's Brief due February 15<sup>th</sup>. Below is the "Argument" portion of the Respondent's Brief, as I think Pennsylvanians ought to know the facts about what's going on regarding forced AMI SMs when, in reality, they are not mandated, as you will see, plus other issues addressed in the Brief that reveal the underbelly of regulatory agencies and utilities working hand-in-hand, I contend.

**Respondent Brief ARGUMENT:**

Frompovich presented, prior to the November 2-3 hearing date, 195 pages of testimony (18 pages) and Exhibits she was prepared to present at court but was not permitted to do so. Frompovich has testified before the U.S. Congress, the FDA and various states legislatures and their committee hearings so she is familiar with how to present testimony. Frompovich's apparent damaging expert testimony and 32 Exhibits were something PECO could not allow to get on public record, so the hearing became a trial format rather than Frompovich being allowed to present her testimony as originally presented prior to the hearing.

Particular exhibits Frompovich tried introducing often were objected to, especially anything having to do with cancer(s) and EMF/RF/ELF microwave radiation exposures since her case is the "seminal case" regarding cancer and EMF/RF/ELF for not only PECO but probably the entire microwave industry.

As a *Pro Se* litigant Frompovich should be entitled to more tolerant construction of technicalities and procedural rules and should have been permitted to admit the numerous peer review studies showing a link between breast cancer (15 male and female human breast cancer studies 1986 to 2005) and other cancers relating to EMF/RF/ELF exposures (almost 240 total studies involved), which are highly relevant and competent evidence in Frompovich's defense. Those studies are easily accessible at [www.justproveit.net/studies](http://www.justproveit.net/studies) (cancer). Those studies are in the public domain of which this Honorable Court can confirm and take judicial notice, since Frompovich's health literally is at stake. So, when

PECO states there is no evidence of a link between radio frequency fields and adverse health effects—including cancers, we can see that PECO’s statement is simply false.

PECO experts presented scientific indication regarding no such thing as non-thermal radiation adverse health effects are accepted by consensus microwave industry science, however, PECO’s medical expert identified non-thermal radiation adverse health effects medically as “idiopathy environmental intolerance” (IEI). *Cf. transcript Page 278 (14-18)*

Furthermore, the above example of “**uncertain science**” is emphasized with regard to PECO’s “pulse” vs “no pulse” internal contradictions regarding their AMI Smart Meter demonstrating even from PECO’s viewpoint, PECO really has not shown the FlexNet meters to be “safe.” That brings up the “Burden of Proof” argument.

PECO, through its expert Dr. Mark Israel, takes the position the only views which “count” are its own, and then, after discounting the contrary evidence, it denies that any such evidence even exists. *Cf. PECO Brief Pg. 13 (89)*

PECO completely discounts the fact that Frompovich was qualified as an expert witness and author in “nutrition and natural healing, and treating cancer from that perspective.” Therefore, what PECO denigrates as Frompovich’s mere “beliefs” are actually legally admissible expert testimony, which weighs against exposing Frompovich to any further radiation burden upon her health and body, in Frompovich’s expert opinion.

As a recognized expert witness, Frompovich was legally entitled to present her expert testimony regarding the adverse effects upon her, based upon her research and review of the scientific literature. Frompovich established herself with this Honorable Court’s approval as an expert qualified to give expert testimony and not mere “beliefs.” PECO also failed to present any contradictory evidence on those points, as PECO failed to have its own expert in the same field.

Expert witnesses are entitled to present their expert opinions based upon their research and review of the scientific literature, other documents, etc., as PECO’s Dr. Mark Israel was permitted to do, within the scope of their

court-recognized expertise. Frompovich's testimony was not mere lay "beliefs."

PECO, a huge corporation, bears the burden of proof to document via meter icons or signage openly displayed, *just not hearsay testimony from PECO employees, or paid expert witnesses Israel and Davis*, the PECO *FlexNet* AMI Smart Meters are absolutely safe. PECO has failed to do that in view of their admitted uncertainty about science. Furthermore, Frompovich, an older (almost 79 years old) American cancer survivor, should not have to bear the burden of proof to show that the PECO *FlexNet* Smart Meters are unsafe.

In general, PECO has not shown the *FlexNet* AMI Smart Meters to be safe other than by testimony from PECO's employee Mr. Pritchard and their paid expert witness Dr. Davis testimony, and with no outside third party certification on the meters, e.g., Underwriters Laboratories (UL) seal of approval. The PECO litany "there is no danger," and "there is no relationship between radio frequency and "bio-effects" are belied by the admittedly "idiopathic" (unknown) nature of the maladies discussed above, and by the information readily available in the public domain cited above and in the footnote documentary "Take Back Your Power" by Josh del Sol on YouTube.[1]

PECO, as such, is attempting to inflict their unsafe meters upon Frompovich, against Frompovich's consent; against basic fundamental property rights; and in excess of PECO's regulatory authority granted by both federal and Pennsylvania law. Both those government authorities make the smart meter program voluntary only. Cf. *Pub. L. 109-58 the Energy Policy Act of 2005 §1252. Smart Metering; Pennsylvania HB2200 §2807(f)7(2) and PA P.L. 1592, No. 129.*

That action by PECO, a huge Exelon-owned corporation, is forcefully making Frompovich to gamble with her health, home, wellbeing, and serenity. Therefore, PECO, a huge corporation, bears the burden of proof, which they have failed to carry.

PECO's "burden of proof" argument, i.e., Frompovich failed to prove she is a cancer survivor when, in fact, Frompovich presented her very competent testimony as an expert in her field, as recognized by this Honorable Court, on the record that she is a breast cancer survivor; wrote a book [***A Cancer Answer, Holistic BREAST Cancer Management, A Guide to Effective & Non-Toxic Treatment***] about it, which PECO introduced to the Court; and

also provided PECO with a letter from her treating physician as to her cancer patient status.

Therein resides the entire legal premise and disconnect in the Frompovich case: denial by PECO of the existence of non-thermal radiation waves adverse health effects, i.e., Electrosensitivity, EHS 1932; Microwave hearing (tinnitus) 1962; Blood-brain barrier leakage 1979; Depression, suicide 1979; Alzheimer's disease 2009; Brain tumors, glioma, etc. 2009; **Tumor production 2015**, which are contrary to PECO's expert Dr. Mark Israel's consensus findings, and other adverse human health effects, one of which is cancer(s), as documented in world-wide research and publications which PECO and apparently the PA PUC accept as not valid science despite 32% of industry-sponsored studies found non-thermal effects. *Cf. Frompovich Exhibit O; Brief pp. 31-32 (82-83)*

Frompovich introduced into the hearing record Exhibit O, *Cf. Complainant Exhibit No. 2 (Tr. Pp. 232 & 250)* a graphic with two pie charts indicating the state of industry-sponsored versus independent, non-industry-sponsored research findings. **Thirty-two percent (32%) industry-sponsored research found non-thermal adverse effects** and 68% found no non-thermal effects; whereas **non-industry-sponsored research found 70% non-thermal adverse health effects** and 30% no non-thermal effects. One of the key criteria of **fact-based science** is any scientific finding that contradicts a majority of findings must be given standing. *"Negative findings are a valuable component of the scientific literature because they force us to critically evaluate and validate our current thinking, and fundamentally move us towards unabridged science."***[2]**

Frompovich, furthermore, in her Brief introduced the apparent scientific mischief, conflicts of interest and probable fraud regarding EMF/RF/ELF 'science' as propagandized by industrial professional societies, e.g., ICNIRP, which PECO experts used as their scientific expertise and industry proof. *Cf. Frompovich Brief pp. 39-45 (100-115)*

Frompovich introduced into the hearing record the fact that AMI Smart Meters are not safe, and questioned why an Underwriters Laboratories (UL) certificate of compliance and safety icon is not provided with each PECO AMI Smart Meter. *Cf. Brief pp. 24-27; (70 for UL reference); Transcript p. 158 (12-21)*

As a result of the retrofit of PECO AMI Smart Meters, “hot sockets” can and do occur. PECO has a built-in monitoring system in its *FlexNet* AMI Smart Meters using microwave technology they can adjust for “alarms” and “false alarms” regarding heat buildup in smart meters, specifically to avoid sun beating down on to PECO meters causing excess heat. Special transmissions back to PECO alarm notification indicate whether a meter is heating up. On hot summer days, however, PECO ‘tweaks’ the system to adjust for ‘sunburn’ on smart meters in order to avoid “false alarms,” which actually jeopardizes the safety of PECO’s smart meters and the households to which they are attached. Hot sockets result from meter jaws being tampered with during retrofitting of PECO’s AMI Smart Meters.

Furthermore, the new PECO smart meters do not have the safety features of analog meters, e.g., Bakelite (heat/fire-proof) backs and glass domes. Current standard AMI Smart Meters contain numerous plastic parts, which are prone to overheating (thus the built-in PECO “alarm system”), especially if or when PECO sends out microwave message instructions to their meters to raise temperature monitoring levels to prevent summer heat buildup “false alarms.” Standard AMI Smart Meters are not built with surge resistors. Frompovich questioned whether surge resistors were built into PECO *FlexNet* meters and Mr. Pritchard (PECO employee) said they were. *cf. Transcript p. 157 (3)* However, if PECO’s *FlexNet* AMI Smart Meters are not built with surge resistors (***is that the reason for PECO’s FlexNet meters’ “alarm system”***), then that is/becomes a functionally unsafe meter, especially in view of PECO’s actions to prevent “false alarms,” as discussed above.

That PECO signal-action alone to prevent “false alarms,” plus flammable plastic meter parts, **establishes PECO’s legal culpability for supplying unsafe and unreliable utility service**, something violating the PA PUC Mission statement: “*The Pennsylvania Public Utility Commission balances the needs of consumers and utilities; ensures safe and reliable utility service at reasonable rates; protects the public interest...*” by retrofitting new unsafe plastic-parts AMI Smart Meters on to customers’ homes. The PA PUC should mandate safe, non-plastic-parts meters for all utility customers in the Commonwealth of Pennsylvania with Underwriters Laboratories certification certificates or icons attached, or PA PUC is not doing their administrative due diligence, Frompovich contends.

PECO states its *FlexNet* AMI Smart Meters do not operate on a mesh network. *Cf. Transcript*

Frompovich respectfully disagrees and challenges PECO's semantical premise asserting a non-mesh network. A mesh network has two decentralized connection arrangements, i.e., full mesh topology and partial mesh topology [the way in which constituent parts are arranged, integrated and/or operate].

Frompovich introduces as *Respondent Exhibit No. 4*, Page 8, "PECO's Multi-Tiered Smart Grid Network" diagram from Glenn Pritchard's presentation[3] before the IEEE *cf. Transcript p. 127 (3-7)* titled "PECO delivers a Reliable and Resilient Smart Grid" wherein several complex networks called "communication tiers" are described: Tier 1, the 375 miles of fiber optic communications; Tier 2, the WiMAX wireless communication network; Tier 3, the low bandwidth network; and Tier 4, HAN the in-home communications network. WiMAX is a 3.5 gigahertz communication. *Cf. Transcript Pg. 148 (17-19)*

Note: one gigahertz equals one billion or  $10^9$  cycles per second.

Megahertz equals one million cycles per second. Hertz denotes cycles per second.

Based upon PECO employee Mr. Pritchard's Page 8 chart discussed above, **PECO's *FlexNet* AMI Smart Meters operate on a partial mesh topology.** If the ZigBee radio *cf. Transcript 132 (19-24)* is 2.4 gigahertz frequency *cf. Transcript p. 135 (10-12)* and the WiMAX is a 3.5 gigahertz communication network, something is totally disproportionate regarding the figures PECO states relating to EMF safety of *FlexNet* meters, Frompovich contends. Consumers are forcefully subjected to 3.5 GHz and an added 2.4 GHz without their knowledge or consent with unknown side effects, which basically is an experiment on the human organism. Only part of the PECO *FlexNet* meter communication tier transmits at 901-901.1 megahertz —probably Tier 3.

Mr. Pritchard apparently misrepresented or misstated the power of the ZigBee radio on Page 163 (23-24) when he said, "That would be the purpose of the low power ZigBee radio itself." The ZigBee, according to Mr. Pritchard at Pg. 134 (17), "...**would be putting out a message every 30 seconds,**" not only ten times a day, as PECO expert Glenn Pritchard

previously testified, **“On average most meters transmit less than ten times a day with the FlexNet radio.”** Cf. Transcript Pg. 133 ((15-17) That indicates yet another misrepresentation of the facts by PECO regarding its AMI Smart Meter(s) made during the Frompovich hearing and which this Honorable Court needs to make note of and factor into its decision-making processes.

Furthermore, Mr. Pritchard in answering His Honor Judge Pell’s questioning stated, “It could be **once every five minutes to once every hour or maybe once a day** depending on what the device – whether it would be a smart thermostat, a dishwasher as you mentioned or maybe an in-home display device.” Cf. Transcript Pg. 169 (1-5)

Judge Pell then remarked, “I understand you to say that, **if it doesn’t connect with anything, it pulses every 30 seconds?**” PECO employee and expert Pritchard states, **“It continues to seek that, yes.”** Whereas, His Honor Judge Pell then asks, **“Indefinitely or will it decide, okay, I’m not finding anything, stop? Can that be adjusted?”** Mr. Pritchard replied, **“No.”** Judge Pell queries further, **“No. Does it have to be that way?”** Mr. Pritchard replied, **“We have no options with that.”** Cf.

*Transcript Pg. 169 (1-17)*

Frompovich respectfully points out to this Honorable Court the grossly contradictory PECO expert’s sworn testimony regarding ZigBee radios transmission/communications from and by PECO AMI *FlexNet* Smart Meters.

2.4 gigahertz frequency is the power at which Wi-Fi (Wireless Fidelity) operates. The WiMAX, then, at 3.5 gigahertz is a more powerful Wi-Fi—a network more vulnerable to hack attack than wired connections. The ‘low’ Mr. Pritchard refers to apparently is the lower end of the billion cycle transmission range. Frompovich contends obfuscation on the part of PECO experts inadvertently confusing this Honorable Court while establishing a public record and, hopefully, case law to cite later.

His Honor Judge Pell asks some probing questions regarding ZigBee at *Transcript pages 168 to 170*, which ought to be revisited by this Honorable Court, in view of the above information about PECO’s **Multi-Tiered Smart Grid Network**. [Note to readers: You can see the PECO Grid Network in color on page 8 at this link [http://sites.ieee.org/isgt2014/files/2014/03/Day2\\_Panel1C\\_Pritchard.pdf](http://sites.ieee.org/isgt2014/files/2014/03/Day2_Panel1C_Pritchard.pdf) ]

Christopher Davis, Ph.D., at Transcript Pg. 195 (16-20) states: “In the middle of that region, part of the radio frequency spectrum is quite often

referred as microwaves, and that covers part of the radiation that's not at the low end of radio frequencies but it's not at the very high end of radio frequencies either."

At (21-25) Dr. Davis is asked, "And smart meters would fit where on Exhibit CD1?" Dr. Davis answered, "Well, smart meters, for example the PECO AMI meters, they actually have two places on this chart. They emit near 900 megahertz and they also emit near 2,400 megahertz. So they're in the RF part of the spectrum." Dr. Davis's remark confirms PECO's FlexNet AMI Smart Meters are in the radio frequency ("RF") part of the spectrum. At Pg. 196 (1-2) Dr. Davis is asked, "Is that in the same vicinity as cell phones?" Dr. Davis answers, "Very similar to the range used by cell phones."

The National Toxicology Program of the U.S. Department of Health and Human Services issued a preliminary report May 27, 2016 on "some important study findings" <http://biorxiv.org/content/early/2016/06/23/055699> which, in part, stated:

"This report presents partial findings from these studies. The occurrences of two tumor types in male Harlan Sprague Dawley rats exposed to RFR, **malignant gliomas in the brain and schwannomas of the heart, were considered of particular interest** and are the subject of this report." **Note both of the above findings indicate carcinomas (cancers).**

The argument Dr. Christopher Davis, Ph.D., gave that PECO's smart meter emits less radiation than everyday life, is illogical. He is neither a physician nor a natural healing expert. Radiation is cumulative and impedes natural healing, in Frompovich's expert opinion, based upon her research and review of the scientific literature. Therefore, smart meters add to the radiation present in everyday life and, therefore, increase the total amount of radiation to which Frompovich would be or is exposed. Arguing that radiation does not contribute to cancers of all types is sadly reminiscent of the argument that smoking does not cause cancer either. The extra smart meter EMF radiation becomes an added burden upon already overstressed everyday life.

However, another report coming out of the Ramazzini Institute of Bologna, Italy, during the Forum held in Jerusalem, Israel, in late January 2017, states the Institute's "Rethinking the classification on the carcinogenic effects of electromagnetic fields" RFR study will be published by the end of 2017 regarding the waves emitted from the cell phone antenna and the cell phone itself using guinea pigs as the laboratory rats, with findings that parallel similar findings of the NTP's 2016 preliminary study report. Regarding the lack of a preponderance of evidence concerning Frompovich's health status and not producing medical records, etc. as frequently stated in the PECO Brief, Frompovich did not need to produce a preponderance of evidence since such activity would conflict with the HIPAA Act's Privacy Rule in Health Insurance Portability and Accountability Act of 1996 (HIPAA), Public Law 104-191. However, Frompovich provided PECO with an authentic letter from her managing physician as to the status of her condition as a breast cancer patient/survivor, which should be more than satisfactory in view of not violating HIPAA's requirements considering the Frompovich case is in the public record and published online. Frompovich further contends her right to redress is abrogated by the actions of PA House Consumer Affairs Chairman Robert Godshall's actions not calling for a vote several Opt-out bills Pennsylvania legislators introduced to fix the PA PUC's administrative overreach mandating AMI Smart Meters, *cf. Frompovich Brief IV. Summary of the Argument With Statement of Facts Pg. 10 (22)* when the PA Legislature originally passed a non-mandatory smart meter bill, HB2200, as published of public record.

Furthermore, this Honorable Court and the PA PUC should censure Representative Robert Godshall, plus demand Godshall recuse himself from his position as Committee Chair regarding Smart Meter Opt-out bills in the House Consumer Affairs Committee since Godshall's son, Grey, is an employee of PECO/Exelon (originally reported at <http://www.linkedin.com/pub/grey-godshall/33/ba7/58> but that LinkedIn site is no longer available), as there is an apparent conflict of interest involved. Here's what was on Grey Godshall's LinkedIn site:



## Grey Godshall

Project Manager at Exelon

Connect with Grey

Wasn't Grey Godshall promoted to EMI installation supervisor immediately after PECO received their \$200 million in Stimulus Funds?  
Frompovich introduces as **Respondent Brief Exhibit No. 2**, the March 20, 2015 letter she received from Robert W. Godshall, State Representative, stating "*I am not going to continue a dialog on the issue as you have your preconceived opinions on the issue and I have mine based on the evidence I have,*" which indicates Godshall's "preconceived opinions" and intent to deprive Frompovich of her right to redress government officials, especially a state legislator whose son is an employee of Exelon, the parent company of PECO, and who adamantly refuses to call Opt-out bills for a vote, leaving them to become *sine die* for four years.  
PECO states at 47 (Pg. 8) in its Brief, "The FlexNet communication module, which communicates from the AMI meter to the Tower Gateway Basestation [*is that part of a network*], operates at a licensed frequency of 901.1 MHz. In its service territory, PECO is the sole user of its licensed spectrum." Shouldn't that radio frequency license number be exhibited on PECO's *FlexNet* AMI Smart Meter along with the Underwriters Laboratories (UL) certification PECO states it has obtained? Without such public documentation, Frompovich, all PECO customers and even this Honorable Court should be questioning whether that is fact or fiction, since there is no legitimate proof on PECO's meters to substantiate their claims. Where is compliance with "truth in advertising"?  
Frompovich invokes her Constitutional right(s) regarding PECO's Brief statement at Pg. 16, lines 7-8: "It is axiomatic in all Commission formal complaint proceeding that the Complainant has the burden of proof" since

she is being singled out specifically 1) because of her breast cancer and PECO/PA PUC wanting to make this a “seminal case” regarding cancers and EMF/RF/ELF/ Smart Meters; and 2) she has provided more than a preponderance of evidence that it is not she who is breaking the law (Act 129) but PECO and the PA PUC who are in violation of Act 129/SB2200[4] as published in the public record along with U.S. Public Law 109-58 (Aug. 8, 2005) the Energy Policy Act of 2005, specifically Sec. 1252. Smart Metering, which does not mandate smart meters. Therefore, Frompovich has no burden of proof regarding her breast cancer patient/survivor status, medical records, etc., as she is not violating Act 129.

Furthermore, Frompovich contends she is being harassed regarding having had breast cancer to the point where PECO wants to make a public spectacle of her health issues for their gains and benefits. She alleges discrimination on the part of PECO.

Furthermore, PECO expert Dr. Mark Israel “...concluded that there is no basis to consider that radio frequency fields could affect the immune system. Tr. 269-70.” *Cf. Brief Pg. 33.*

In **July 1991**, J. Walleczek, Research Medicine and Radiation Biophysics Division, Lawrence Berkeley Laboratory, University of California, Berkeley, California 94720, published “**Electromagnetic field effects on cells of the immune system: the role of calcium signaling**,” a 47-page paper, of which Frompovich submits the *PubMed* Abstract as *Respondent’s Exhibit No. 3.*

**Contrary to Dr. Israel’s statement, there is scientific basis regarding EMF fields effects on the immune system. Immune system effects studies include** Boscolo et al. 2001; Novoselova et al. 1999.

PECO stipulates at Brief Pp. 37-39 that various states utilities commissions find “...the use of such meters is reasonable.” Note the word “**safe**” is **not used**, but the term “reasonable.” However, PECO omitted very important and most significant facts regarding each of the states mentioned, to wit:

**California** has OPT-OUT from AMI Smart Meters provisions

**Florida** has OPT-OUT from AMI Smart Meters provisions

**Maine** has OPT-OUT from AMI Smart Meters provisions

**Massachusetts** has OPT-OUT from AMI Smart Meters provisions

**Michigan** has OPT-OUT from AMI Smart Meters provisions

**Nevada** has OPT-OUT from AMI Smart Meters provisions

**New Hampshire** has **OPT-IN** required

**Texas** has OPT-OUT from AMI Smart Meters provisions

**Vermont** has OPT-OUT from AMI Smart Meters provisions

*Cf. Frompovich Brief p. 4*

However, PECO fails to provide additional incriminating information: the Port Angeles City Council Public Works and Utilities in Washington State **ended the Smart Meter program and approved a \$1.8 million settlement** so that “*All water and electric meters will be free of the controversial, electromagnetic Smart Meter components.*” *Cf. Frompovich Brief p. 4*

PECO in its “Proposed Conclusions of Law” states in No. 3, Pg. 40: “The complainant has not met her burden of proof of establishing an offense in violation of the Public Utility Code, the Commission’s regulations or an outstanding order of the Commission. 66 Pa.C.S. § 701.”

Based upon the preponderance of evidence Frompovich has provided to this Honorable Court, she is not violating Act 129 (2008).

Based upon the preponderance of evidence presented and of public record, Act 129/SB2200 as published in the public record did not mandate AMI Smart Meters.

Based upon the preponderance of evidence that the Pennsylvania State Legislature did not vote into law a mandatory smart meter bill/act, as published in the public record, the PA PUC is guilty of administrative agency overreach in creating regulations contradictory to legislation passed by the only law-making entity in the state—the State Legislature. For several years Smart Meter Opt-out bills have been introduced by PA legislators only to be maneuvered to *sine die* by apparent conflicts of interest from Consumer Affairs Committee Robert W. Godshall, whose son Grey is a PECO/Exelon employee.

Therefore, according to the laws of the Commonwealth of Pennsylvania and the United States of America, Frompovich should not be made to accept an uncertified as ‘safe’ PECO *FlexNet* AMI Smart Meter, nor have her electric service terminated because Frompovich is not in violation of Act 129/SB2200.

Furthermore, the PA PUC must correct its egregious lawmaking overreach protocol, which the PA Legislature has tried to correct by introducing numerous Opt-out bills only to be hindered from becoming law by the actions of one specific person, House Consumer Affairs Committee Chairman Robert W. Godshall, who should be censured and mandated to recuse himself immediately, considering a conflict of interest exists within Godshall’s family since his son Grey works for Exelon, parent company of PECO.

***Now, here's that part of the Respondent Brief where I have to tell the Court what I think it should do regarding my case.***

#### CONCLUSION AND PROPOSED ORDERING PARAGRAPHS

Whereas, Frompovich comes before this Honorable Court seeking a decree of relief from legal and customer harassment tactics by PECO and the PA PUC regarding the mandated retrofitting of an AMI Smart Meter on to her property at 23 Cavendish Drive, Ambler, Pennsylvania.

That Frompovich is not in violation of Act 129 with no termination of electric power service to her home as she has provided a preponderance of evidence that Act 129/HB2200 is illegally enforced due to the administrative overreach of the PA PUC which, therefore, makes the act as implemented and administered by the PA PUC not enforceable.

Whereas, Frompovich seeks her U.S. Constitution and Pennsylvania Constitution rights to remain intact; enforced; not violated; nor impinged upon by PECO and/or the PA PUC.

Whereas the ADAAA requires, Frompovich should at minimum be reasonably accommodated, and not forced to have a smart meter, which may kill her or adversely affect her health, as so many other cases before this Honorable Court have claimed but have been overruled.

Furthermore, Frompovich's electricity (as an older American in winter cold and summer heat and humidity) should not be disconnected. This is a threat against Frompovich's very life. PECO seems unaware of the consequences of their draconian demands. Reasonable accommodation on the part of PECO, including the PA PUC's erroneous interpretation of HB2200/Act 129 (2008), are required at minimum.

Whereas, Act 129 (2008) implementation regulations generated by the PA PUC and PECO's smart meter retrofits are at legal variance with **HB2200 §2807(f)7(2) Legislative History** as published of public record and enacted into law, and must be enforced retroactively for all utility customers in the Commonwealth:

**(2) Electric distribution companies shall furnish smart meter technology as follows:**

**(i) Upon request from a customer that agrees to pay the cost of the smart meter at the time of the request.**

**(ii) In new building construction.**

**(iii) In accordance with a depreciation schedule not to exceed 15 years.**

Frompovich requests this Honorable Court to instruct the Pennsylvania Public Utility Commission to issue immediately revised and corrected implementation rules and regulations for AMI Smart Meters for electric, natural gas and water utilities customer services **to reflect the non-mandatory status of smart meters the Pennsylvania State Legislature intended, enacted and was published of public record** in the *Pennsylvania House and Senate Journals*, and further issue automatic opt-outs with no special service fees, as Pennsylvania consumers have suffered greatly due to misinformation and faulty implementation rules and regulations, including utility company harassment in some cases, as various Complainants had and still have pending cases before the PA PUC and this Honorable Court.

**It is well established under federal and state law that administrative agencies are creatures of statute and may not establish regulations outside the boundaries established by the legislature. [5]**

PA State Senator Fumo is on record in *PA Senate Journal* October 8, 2008 (pp. 2626-2631) stating, **“In addition we did not mandate smart meters, but we made them optional.”** Therefore, the PA PUC, PECO and all public utilities in Pennsylvania by law must adhere to and abide by the optional smart meter mandate enacted by the Pennsylvania State Legislature, as only the Pennsylvania State Legislature can make law, not the Pennsylvania Public Utility Commission, a state administrative agency.

Whereas, a preponderance of evidence exists that the PA PUC overreached its administrative powers when formulating implementation regulations for HB2200/Act 129 (2008) thereby causing much physical, emotional, mental and health harms to utility customers who are sensitive to EMF/RF/ELF electronic pollution and or persons with health issues which can be impacted by EMF/RF/ELF non-thermal radiation waves. Whereas, Frompovich believes she is denied her constitutional right to include relevant published medical-scientific studies regarding 15 human breast cancer studies (1986 to 2005) and other cancers citing EMF/RF/ELF exposures in a compendium of almost 240 studies she tried introducing as

Exhibit A-3 but was overruled. That has to be corrected and those studies should be permitted into the record.

Whereas, PECO medical expert Dr. Mark Israel, MD, admitted the science is not certain, therefore, theoretical, prejudices Frompovich's constitutional rights to a fair hearing before this Honorable Court cf. Transcript Pg. 290 (22-25).

"Number two, non-thermal health effects have been widely studied but are still theoretical and have not been recognized by experts as a basis for changing regulatory exposure limits."

Whereas, Frompovich's Exhibit of published cancer studies, which counter Dr. Israel's medical opinion, should have been admissible evidence because they were relevant to Frompovich's main case, however, Frompovich contends those studies now should be made a part of this record.

Whereas, PECO expert Dr. Israel's testimony stating the science is uncertain, i.e., "theoretical," (e.g., speculative, hypothetical, uncertain) cannot be accepted by this Honorable Court as factual, as that action prejudices Frompovich before this Honorable Court and can make Frompovich the subject of an experiment without her consent, something prohibited by the Nuremberg Code[6] and it also denies Frompovich of her U.S. Constitutional and Pennsylvania Constitutional rights as set forth in her Brief. Cf. Pp. 4, 12, 14, 17, 19

PECO has no right, nor authority, to make personal decisions for Frompovich, especially regarding her status as a breast cancer survivor wanting to protect her health from further onslaughts that can and will compromise her immune system and general wellbeing. PECO proffers in its Brief Pg. 36, IV. "State public utility commissions that have examined whether AMI meters cause or contribute to health effects have concluded that AMI meters are safe and that their use is reasonable." Cf. this Brief Pg. 19 (56) referring to PECO's Brief various states utilities commissions find "...the use of such meters is reasonable." Nothing is said about "safe." However, PECO's opinionated legalese proffers 'safe' and inserts that word. The very fact that PECO's FlexNet AMI Smart Meter does not have the Underwriters Laboratories icon prominently displayed anywhere on its display or housing indicates 'safety' is dubious and, therefore, not proven. Consequently, PECO cannot make nor offer spurious decisions regarding Frompovich's mandated acceptance of an unsafe AMI Smart Meter to or by this Honorable Court and/or the PA PUC, which essentially is in violation of

Act 129 as published of public record and enacted by the PA Legislature, the only law-making entity in the Commonwealth.

There is the UN's Universal Declaration of Human Rights[7], which in Article 3 states: "Everyone has the right to life, liberty and security of person."

Article 8: "Everyone has the right to an effective remedy by the competent national tribunals for acts violating the fundamental rights granted him by the constitution or by law."

Article 19: "Everyone has the right to freedom of opinion and expression; this right includes freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers." That right, Frompovich contends, was denied her in presenting published peer review studies regarding EMF/RF/ELF and breast and other cancer(s) by PECO's incessant objections to her Exhibits.

Article 30 "Nothing in this Declaration may be interpreted as implying for any State, group or person any right to engage in any activity or to perform any act aimed at the destruction of any of the rights and freedoms set forth herein."

Respectfully submitted,  
Catherine J Frompovich, Pro Se

\*Pro Se means I did not have a lawyer representing me; I represented myself before the Court.

As you can see from my Argument, Conclusion and Ordering Paragraphs there's a lot that's not legally correct regarding AMI Smart Meters in Pennsylvania and utility customers have had the "wool pulled over our eyes" by utility companies harassment techniques, which has to stop, as many people are suffering from and with electromagnetic hypersensitivity and other health issues since AMI Smart Meters were retrofitted on to their utility meters. Some customers have three: electric, natural gas and water!

Shortly after PECO started retrofitting AMI SMs, numerous meters exploded and/or caught fire damaging homes, which homeowners' insurance policies did not and don't cover! Did you know that? However, to PECO's credit, they suspended the retrofit program while they sought

different supposedly 'safe' replacement meters. PECO replaced between 180,000 and 200,000 AMI SMs.

Pennsylvania is rather unique insofar as utility customers are not permitted to have an Opt-out from AMI SMs, which is not necessary, since the original HB2200 bill was signed into law as Act 129 (2008) as "NOT mandatory," and basically it is an "Opt-IN" law; see HB2200 §2807(f)7(2) (i).

However, since the PA PUC changed HB2200/Act 129 law during their implementation writing process, that administrative agency overreach, which is a legal No-No!, has to be corrected. PA legislators have tried to do that by introducing Opt-out bills over four years, only to have them scuttled by the deliberate maneuverings of PA House Consumer Affairs Committee Chairman Robert Godshall, whose son Grey works for Exelon, PECO's parent company. Are there any conflicts of interest there?

Pennsylvanians ought to march on Harrisburg to demand what the PA legislature passed into law regarding AMI Smart Meters—not mandatory, and not be forced to accept what the PA PUC thought, "believed" or rewrote as implementation regulations. The PUC's implementation regulations have caused health harms to numerous utility customers and family members, so the Commonwealth must be made accountable for the untenable wrong committed by one of its administrative agencies.

Notes:

[1] [https://youtu.be/0h\]qs1jwAPc?t=22](https://youtu.be/0h]qs1jwAPc?t=22)

[2] <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3917235/>

[3] [http://sites.ieee.org/isgt2014/files/2014/03/Day2\\_Panel1C\\_Pritchard.pdf](http://sites.ieee.org/isgt2014/files/2014/03/Day2_Panel1C_Pritchard.pdf)

[4] HB2200 §2807(f)7(2)(i)

[5] The Legal Intelligencer [http://www.cohenseglias.com/library/files/the\\_legal\\_intel\\_-\\_evaluating\\_challenging\\_regulatory\\_overreach\\_-\\_c\\_caurson\\_e\\_-\\_4.20.2016.pdf](http://www.cohenseglias.com/library/files/the_legal_intel_-_evaluating_challenging_regulatory_overreach_-_c_caurson_e_-_4.20.2016.pdf)

[6] <https://history.nih.gov/research/downloads/nuremberg.pdf>

[7] <http://www.un.org/en/universal-declaration-human-rights/>

Catherine J Frompovich (website) is a retired natural nutritionist who earned advanced degrees in Nutrition and Holistic Health Sciences, Certification in Orthomolecular Theory and Practice plus Paralegal Studies. Her work has been published in national and airline magazines since the early 1980s. Catherine authored numerous books on health issues along with co-authoring papers and monographs with physicians, nurses, and holistic healthcare professionals. She has been a consumer healthcare researcher 35 years and counting.