STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

In the matter of the application and request of the DETROIT EDISON COMPANY seeking approval and authority to implement its proposed Advanced Metering Infrastructure opt out program. Case No U-17767

QUALIFICATIONS & DIRECT TESTIMONY OF DAVID O. CARPENTER, M.D.

1 Q Do you swear that the testimony you are about to give is the truth, the whole truth, and nothing but the truth?
2 A I do.
3 Q Can you please state your name, address and contact information?
5 email: dcarpenter@albany.edu
6 Q. Who are you testifying for in this proceeding?
7 A. Intervener David Sheldon.
8 Q. Could you tell us the nature of the medical work you do?
9 A. I am a public health physician. My area of specialization is environmental health and disease prevention.
10 Q. Are you also associated with the Institute for Health and the Environment at the University at Albany, State University of New York?
11 A. Yes.
Q. Could you tell us briefly what is the scope of research done there and what is your own role at this institute?

A. I am the Director of the Institute for Health and the Environment, a Collaborating Centre of the World Health Organization. The Institute promotes interdisciplinary research on issues related to both health and the environment in both domestic and international settings.

Q. Have you devoted a substantial part of your career to studying the effects of low-level non ionizing radiation upon human beings?

A. Yes.

Q. Can you tell us what kind of devices in common use today emit low-level non ionizing radiation?

A. Cell phones, baby monitors, wi-fi and smart meters would be the most common examples. Smart meters are also sometimes called advanced meters or AMI meters.

Q. Do you understand the purpose of this administrative law case and why we have asked you to contribute your testimony?

A. Yes, I understand that this contested case was opened in response to an application by DTE Electric for an increase in rates. As part of that application DTE is seeking continued approval from the Michigan Public Service Commission (MPSC) for rate recovery of costs occasioned by smart meter installations and smart meter infrastructure. My understanding is that a cost/benefit analysis is required in order for the Commission to continue to allow smart meter costs to be passed on to DTE’s customers.
Q. Will your testimony in this case go to the cost side of that analysis?
A. Yes.
Q. What kind of costs will you be addressing?
A. The costs imposed on customers through the electric rates they must pay I will leave to others. I am concerned with the health costs imposed on customers in consequence of the radio transmitters in smart meters and also in consequence of the power quality issues, sometimes called “dirty electricity” generated by the power supplies used in these meters.
What costs are those?
A. Diminished health for a minority of the population, probable diminished life expectancy for the majority, probable genetic damage and all the unnecessary out of pocket medical costs people will incur in order to cope with the harm.
Q. Do you have an opinion, based on your professional knowledge and experience, as to whether the widespread deployment of radio transmitting smart meters is a safe and prudent course of action, given the present state of knowledge concerning the effects of such radio transmissions upon biological processes?
A. I do. My belief is that such widespread deployment cannot be justified at this time based on the peer-reviewed research we have. I would say that universal deployment of such meters throughout our urban areas amount to an experiment on the people living in those areas, an experiment without the consent of the experimental subjects.
Q. Can you substantiate that point?
A. Yes. In 2012 I was asked to write my concerns about the health hazards of smart meters. Forty five medical professionals and scientists, who together have authored hundreds of peer-reviewed articles on the effects of electromagnetic radiation, joined together with me in a statement expressing our views on the effects of low level radio frequency and microwave radiation in general and smart meter radiation in particular. That statement is attached to my testimony as Exhibit One.

Q. And can you tell us briefly what conclusions were expressed?

A. While smart meters are too new for there to be human health studies specifically on exposure from smart meters, there is a strong body of evidence that demonstrates a variety of adverse human health effects, including cancer and effects on brain and behavior, coming from exposure to radiofrequency radiation like that generated by wireless smart meters.

Q. Is there something about this kind of radio frequency that is very different than the kind of radio frequency the public has been exposed to for decades from AM and FM radio stations?

A. Yes. The radio frequency used in smart meters is pulse modulated. There is a body of scientific literature suggesting that pulse modulated RF is more disruptive to the human body, and to other living things, than is a steady or slowly varying RF field.

Q. To the best of your knowledge, what percentage of the general public could be called “electro-sensitive”, i.e. people who experience more or less immediate
symptoms when exposed to electromagnetic radiation, such as headaches, mental confusion, rapid heartbeat and so on?

A. While the evidence is incomplete for several reasons, most reports indicate that between 5 and 10% of the population show symptoms of electrical hypersensitivity.

Q. Is it possible that electro-sensitive people are like the canary in the mine? Or, more precisely, is it possible that the kind of electromagnetic fields that cause electro-sensitive people to experience immediate symptoms of distress, are also the kind of fields that are likely to cause long term illness to a much larger group of individuals who do not experience immediate symptoms?

A. Yes, this is not only possible but likely.

Q. So would it be fair to say that from a public health standpoint, protecting the most vulnerable among us might well be viewed not only as an act of compassion toward them but also have the effect of protecting the majority of the population from long term diseases like cancer or neurological diseases like Alzheimer’s Disease?

A. This is true.

Q. There is mention of “dirty electricity” in your Exhibit One. Can you tell us very briefly what that is and why it might be a health issue?

A. Some reputable scientists, such as Dr. Sam Milham, have argued that the switched mode power supplies in the new digital meters cause transients in the kilohertz range that travel through home wiring and may be causing some of the health effects we are seeing.
Q. The proposal of DTE Electric that is being considered here calls for customers to be offered a non-transmitting smart meter as the opt-out alternative to the fully functioning smart meter. DTE Electric has stated on the record in a previous case, U-17053, that this will be the identical meter to the transmitting smart meter, differing only in that the radio transmitter that would otherwise send the readings to the utility will be turned off. Could this meter also be a health problem and if so why?

A. It is my understanding that all smart meters have something called a “switched mode power supply” in them to convert 120 volts ac to a lower dc voltage to operate the electronics. There have been many reports from multiple parts of the United States that these power supplies are causing low frequencies in the kilohertz range to travel through the wiring of a home or business. This phenomenon is called a power quality problem by engineers but is also frequently called the “dirty electricity” problem by non engineers. There have been many reports that this phenomenon produces adverse health effects similar to those produced by the radio frequency transmitters. The traditional type of electric meter, known as the “analog meter” or “electro-mechanical meter” does not require a power supply and so does not generate power quality problems.

Q. Would allowing individual customers to keep an analog meter be a safer solution than the “non-transmitting meter” DTE Electric is currently offering its opt-out customers.

A. Yes.
Q. Is there data on smart meters going back far enough to trace the long term effects of such meters on people?

A. No, but until more data becomes available we have to make inferences based on longer term data that we do have concerning use of cell phones and people living near to radio transmission towers. These studies show that increased radiofrequency exposure increases risk of cancer, and that the most vulnerable parts of the population are children and teenagers.

Q. Have you had occasion to testify previously about such effects?

A. Yes, in January, 2012, I testified concerning the effects of WiFi radiation on school children in the Oregon Public Schools. My legal testimony in that case is attached here as Exhibit Two.

Q. Can you give us a very brief summation in a few sentences as to your conclusions about the Wi-Fi study?

A. As with wireless smart meters, WiFi in schools exposes children constantly to radiofrequency radiation. As with smart meters, the specific health effects from exposure to WiFi have not been determined, but WiFi is radiofrequency radiation. Because children are more vulnerable than adults to radiofrequency radiation, as documented by studies from cell phone use and people living near to radio transmission towers, it is unwise to use WiFi in schools when a wired connection to the Internet does not increase exposure.

Q. In conclusion, would it be your opinion that allowing individual customers to opt-out of having a “smart meter” on their home or business would be good public policy?
A. Yes, if there must be widespread deployment of such devices at this time and if wired smart meters are not a possible alternative.

Q. Does an opt-out plan really solve the exposure risk you have been describing here and in your exhibits?

A. Not entirely. Not having a smart meter on one's own home will reduce the potentially harmful exposure, but the customer opting out is still going to be exposed to a whole blanket of electromagnetic radiation from the smart meters of immediate neighbors and from all the transmitting and receiving devices and repeaters the utility must install to allow all these meters to report their data, as well as other sources of radiofrequency radiation.

Q. If a smarter grid is necessary, what would be the best way to implement the necessary metering technology?

A. A system of wired smart meters using cable or fiber optics would not result in any elevated RF exposure, and if combined with well filtered power supplies, would still provide the utility with information about daily use without risk to public health.

Q. Would it be fair to say from a public health standpoint, that if substantial fees are imposed for opting out of smart meters, that far fewer individuals are likely to opt-out, and that the result of that might well be that we have a greater incidence of cancer and neurological diseases in the long run?

A. This is correct.

Q. Is there anything else you would like to add to your testimony today?
Exposure to radiofrequency radiation has been shown to result in human disease, and we should take every step within reason to avoid increased exposure. All the benefits of a smart grid technology could be obtained with wired smart meters without increasing the risk of exposure and human disease. But at the very least everyone should have the opportunity to opt-out of having wireless smart meters placed on their home.

David O. Carpenter, M.D.
Dated: 22 May 2015
In the matter of the application of DTE Electric Company for authority to raise its rates, amend its rate schedules and rules governing the distribution and supply of electric energy.

Case No: U-17767

PROOF OF SERVICE

David Sheldon states that on May 22nd, 2015, he did serve, by email attachment, his Prefiled Testimony of David Carpenter, along with Proof of Service, upon the persons on the attached service list.

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CASE NO. U-17767
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