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SMARTMETERS AND EXISTING ELECTROMAGNETIC POLLUTION

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Important factors to consider:

- A poorly maintained electrical grid that is 60 or 70 years old (or more) consisting of deteriorating telephone poles, wires, insulators, connectors, cross-arms, fuses, switches, and inadequate grounding.
- Cable TV systems with high speed Internet access, interactive programming, also poorly maintained with more defective wires and hardware located on the broken down telephone poles connected to the same inadequate grounding system.
- Thousands of miles of telephone wires also used for transmitting data with hardware in bad condition also located on the same broken down telephone poles and tied to the same defective ground system.
- Millions of subscribers connecting non-linear loads to the electrical grid by using light dimmer switches, compact fluorescent bulbs, Wi-Fi, computers, routers, and a long list of devices using switching-mode power supplies.
- Millions of SmartMeters connected to the failing grid polluting it with Radio Frequency Interference ("RFI").

It should be noted that non-linear loads on the grid cause harmonic distortion to the 60 Hz operating frequency. This creates high resistance on the grid that in turn causes heating and damage to wires, transformers, and other hardware. It also causes damage to household appliances and erratic performance by sensitive electronics like computers, routers, and similar devices. The grid also acts like a large antenna capable of receiving unwanted radio signals and transmitting some of its own.

Most important, all of this gives rise to serious health and safety issues that have not been considered in this real-world context.

ELECTROMAGNETIC FIELDS (EMFs) BASIC DETAILS

- EMFs are electric and magnetic energy waves moving together at the speed of light (186,000 miles per second in free space).

- A wavelength is the distance they travel in one complete cycle of the wave.

- The frequency is the number of waves passing one point in one second. This is measured in Hertz (Hz), which are cycles per second.

- The waves range in frequency from 3,000 Hz to 300 gigahertz (GHz) which is 300 billion cycles per second.

- Frequencies above 1 GHz are considered microwaves (thermal) and below that point (non-thermal).

- Thermal in this context means the operating frequency is high enough to heat water, tissue and other things – like cooking in a microwave oven.

- The operating frequency of the national electric grid is 60 Hz where a wavelength is approximately three miles long.

- One of the operating frequencies of a SmartMeter is approximately 900 MHz which is 900 million cycles per second where a wavelength is approximately 12 inches long.

- Because SmartMerters operate very close to the 1 GHz cross over point, their transmit frequency does have some thermal effect.

- An EMF wave is measured in volts and amps per meter. The total (in watts) is called power density. When the point of measurement is made in the far field zone of a transmitting antenna, power density expresses intensity and exposure.

- SmartMeter switching-mode power supplies generate RFI – both conduction and radiation.

- EMFs travel on the electrical wiring in your home and office.

- RFI also travels on the electrical wiring in your home and office.

- Magnetic fields only exist when current is flowing.

- The human body resonant frequency is 70 MHz.

- Some people are more sensitive to EMFs than others.

See application for modification of SmartMeter decisions we filed with the California Public Utilities Commission for more information on Electromagnetic Hypersensitivity (EMH). This is attached to the e-mail transmittal letter accompanying the report.