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*Comment Received From: Clifton Stanley Lemon  
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## **Support for Radio Communications in FDAS**

The May 2024 Consultant Report Expanding Flexible Demand through Public Broadcast of Greenhouse Gas Emissions and Electricity Prices makes an excellent case for low cost, feasible and flexible use of radio signals in communicating grid signals to appliances.

The report details several first principles that underlie the requirements of an appliance demand flexibility program, including ease of implementation; cost-effectiveness; plug-and-play; available to all consumers equally; no requirement to sign up to third-party subscriptions or services; and not precluding other DR programs or solutions.

General customer awareness of energy purchase options is almost non-existent. Residential electricity customers typically have no idea that they have alternatives to the dominant utility in their service area, and they have little or no ability to control their energy use (or costs) on their own beyond behavioral modification, where programs have shown little effect.

The success of any demand flexibility program is crucially dependent on making it as easy as possible for consumers to participate. The user interface to any automation software must be dramatically simplified from what we're typically used to in software interfaces today, which present far too many choices and confusing conflicts. This needs to be studied and tested. If we leave it up to a typical software company UI strategy, we'll just get more complex over-featured.

Today the cognitive load of maintenance is high. When things break, we're far more likely to throw them away and replace them rather than fix them or even understand how they work. Residential customers don't want to maintain energy settings in appliances – this isn't even something people know you can do yet, and even if they did they wouldn't do it with the currently available interfaces, or maybe at all. Current home energy management systems are too complex and ineffective, standards are far from being in place, and people only care about their energy use when their bills are too high, and they still can't do much about that.

The best we can do is provide the optimal default settings, let them "set-it-and-forget-it" and apply automation intelligently, without cyber threats or surveillance.

One-way radio signaling is also critical to the success of the proposals in the report, as it's affordable, simple, ubiquitous, and well understood. Technology development today assumes that all devices should collect an endless stream of data, to be exploited by third parties for uses unspecified to data owners. This has resulted in an exponential increase in data centers, a dramatically burgeoning source of energy. Requiring

appliances to report their states, energy use, or any of dozens of other data points is not necessary for a rapid deployment of load management strategies

I suspect that any stated resistance to the use of radio communications is based on faulty assumptions that technology is inherently is always about linear, forward progress, and always improves. History shows this to be far from the case, and technologies are routinely resurrected, combined, and put to applications completely different from their original intent at the point of innovation. Most communications technology has become far too complex and difficult to manage for most people. When it comes to the critical function of managing our grid and the buildings and devices connected to it, relying on "smart" and "connected" systems that aren't user friendly, widely accepted. or proven would be a serious mistake.