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Mr Chairman - National Framework for Energy Efficiency

Additional, Simple Information on Electricity Meters Can Help Customers Cut Energy Waste, Greenhouse Emissions and Electricity Bills

I want to stop wasting electricity and money, and stop hurting the planet but typical household electricity meters don't provide the most basic measures to help me. Electricity utilities could specify these for smart meters but don't presently do so.

I am an experienced electricity supply engineer[1] who has been trialling simple approaches for two years using an off-the-shelf smart meter that displays;

- Date
- Time
- Bill [$]
- Bill Check Code
- Cumulative Energy [kWh]
- Yesterday's Energy [kWh]
- Yesterday's Greenhouse Gases [kg]
- Power [W]
- Yesterday's Minimum Power [W]
- Yesterday's Maximum Power [W]

These quantities alone and a little record keeping have helped enormously! Appendix 1 shows photographs of the quantities on the smart meter at my house. Appendix 2 shows a sample record I have kept in a home-made Energy Log Book. Appendix 3 shows results. Daily energy use has fallen 30% to levels around 10 years ago. Yesterday's measures are quite variable but help find more energy efficiencies and, importantly, prevent waste creeping back – good energy housekeeping! One can use this minimum information a little or a lot. The approach does not require costly collection of interval data, remote communications or in-home displays.

So, please support a minimum standard for Customer Information Display on meters.

- We can manage what we value, if we measure what we want to manage.
- We just need simple, accurate, whole-of-house electricity measures displayed on meters, and an Energy Log Book that should cost < $5.
- The program added to off-the-shelf smart meters is trivial; cost < $5 / meter.
- Update tariffs and CO_{2e} factors once a year during meter reads for < $1.

Anyone can apply "turn off, turn down, buy better" tips and hints to reduce energy waste, but timely feedback reinforces behaviours so we can **know** the effects on **our** electricity bill, consumption and greenhouse emissions, and can spread the word.

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[1] **BIOGRAPHY**

B.E. in electrical engineering, B.Bus. in accountancy and MBA in international business all from QUT, Brisbane. 30 years experience in electricity utility engineering and management, with 10 years on advanced metering and demand side management. Member of the Electric Energy Society of Australia and registered as a professional engineer in Queensland.

This is a simple, cheap, quick and helpful approach that should prove effective and popular. For further detail, please email jeffbeal55@hotmail.com or telephone me on (07) 3851 0378 (A/H).

Yours sincerely

Jeff Beal

APPENDIX 1 – EXAMPLE CUSTOMER INFORMATION DISPLAY

(read down then across)

Date

Yesterday's Energy [kWh]

Time

Yesterday's Greenhouse Gases [kg]

Bill [$]

Power [W]

Bill Check Code (not used yet)

Yesterday's Minimum Power [W]

Cumulative Energy [kWh]

Yesterday's Maximum Power [W]

Figure 1: Customer Information Display taken from Smart Meter
(31 March 2006 at My House After About 30 Days Energy Use)

APPENDIX 2 – SAMPLE ENERGY LOGBOOK

SAMPLE Energy Log									
Date	Time	Bill [$]	Cumulative Energy [kWh]	Yesterday's Energy [kWh]	Yesterday's Greenhouse Gases [kg]	Power [W]	Yesterday's Minimum Power [W]	Yesterday's Maximum Power [W]	Notes
1/04/06	7:45	107.68	697.2	21.3	22.5	720	209	3110	
2/04/06	7:41	110.59	715.6	18.6	19.6	355	206		
5/04/06	6:53	120.38	778.8	23.4	24.7	465	209		
/04/06	7:03	123.83	801.1	22.4	23.6	318	335	2056	O'nite games
	8:36	133.09	860.3	18.5	19.5	217	213	1989	
		9	876.5	16.9	17.8	304	229	2241	
11/04/06	7:11	138.38	893.2	16.5	17.4	415	191	2075	
12/04/06	7:05	141.21	911.0	17.9	18.9	287	203	2389	
13/04/04	7:02	144.15	929.7	18.7	19.7	330	171	2633	
17/04/06	14:16	157.37	1015.1	27.2	28.8	933	465	2437	Dinner party
18/04/06	6:52	160.13				433	437	2745	
19/04/06	7:00	163.03				591	331	1883	
20/04/06	7:23	165.79	1068.0	18.	19.0	349	266	2100	
21/04/06	7:2	168.69	1086.4	16.3	17.2	421	262	1791	
		173.07	1108.3	19.4	20.4	1672	351	19	
		27	1159.6	18.8	19.9	1081	232	2	
26/04/06	7:18	183.17	1177.9	19.4	20.5	221	213		
27/04/06	7:07	185.70	1193.5	14.0	14.8	307	174	2403	
29/04/06	9:27	191.60	1231.6	17.7	18.7	1015	232	1988	
30/04/06	9:00	195.38	1255.8	25.3	26.7	367	286	2297	Baking

Avg Min ≈ 250W

Every day not needed

Avg/day ≈ 20 kWh & 21 kg greenhouse gases

Avg ≈ $3.00/day

Avg Max ≈ 2300W

APPENDIX 3 – RESULTS