CTECK

RESULTS OVERVIEW

SITE: Domestic Home (Large House)
LOCATION: Redland Bay, QLD
SYSTEM: Ducted Air Conditioning System

Low Carbon Accelerator | 2022/23 FINALIST

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CTECK PROOF OF CONCEPT RESULTS

The CTECK air conditioning compressor optimisation system is the latest air conditioning Compressor Performance Enhancement generation by CTECK Pty Ltd (CTECK).

The following are the results obtained on an HAIER 15.5kw Ducted Air conditioning system following the installation of a CTECK unit.

The savings recorded have been made over a 7-day period. (7 days without CTECK & 7 Days with CTECK)

The achieved savings in kWh consumption have been truly impactful, totaling 57.64 kWh thereby leading to a substantial reduction of 39kg in carbon dioxide emissions (CO2).

This notable accomplishment significantly contributes to the fight against climate change and exemplifies the CTECK device's effectiveness in promoting environmental sustainability. Beyond its environmental benefits, the financial advantages of this solution are equally noteworthy, resulting in a total of $17.30 in savings.

This impressive combination of emissions reduction and financial gains highlights the CTECK air conditioning energy-saving device as an indispensable tool for homeowners & businesses seeking to make a tangible and positive impact on the environment while simultaneously bolstering their bottom line.

The outstanding results achieved in this Proof of concept demonstrate the undeniable potential of the CTECK device in curbing emissions and driving a greener, more sustainable future.

The data gathered confirms the energy savings have exceeded our expectations, a measured reduction of 21.93% was achieved.

Typical savings for a High Wall split styles system are 20% on average.

Energy consumption data was monitored between March and April 2023, the AC system was run with and without the CTECK Energy savings unit operating, the data was compared with and without the influence of CTECK showing the above reduction in energy usage.

The Ac system was operating the same set temperature across both on & Off periods with no significant change in the internal temperature & Humidity conditions.

The data capture has been reviewed in line with IMVP protocol/process, this ensures the savings identified are not influenced by ambient conditions.

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PoC-Keirnan Street - Air Con

Data from: 24 Feb 2023, 00:00 to: 19 Mar 2023, 00:00

ALL energy readings in kW

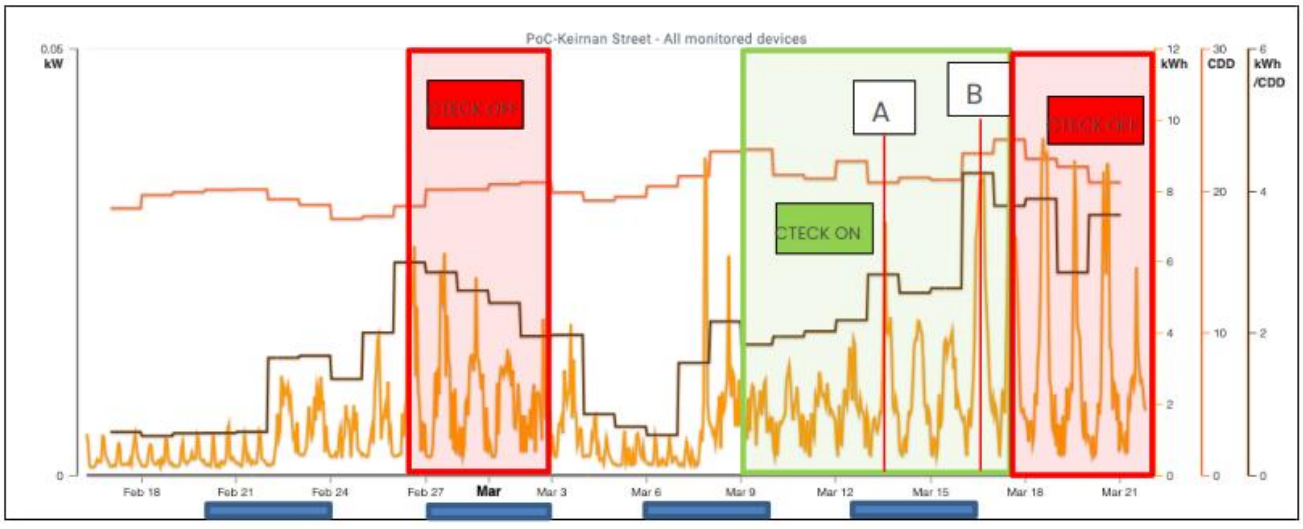
Date:	Duration (sec)	IT Energy	Cooling Energy	Total Energy	temperature	humidity	dew point	CDD	kWh	GHG	kWh/CDD
~~24 Feb 2023, 00:00:00~~	~~86400~~	~~0.404737~~	~~0~~	~~0.404737~~	~~22.91~~	~~0.78~~	~~18.8~~	~~18.02~~	~~9.71~~	~~8.99~~	~~0.54~~
~~25 Feb 2023, 00:00:00~~	~~86400~~	~~0.658669~~	~~0~~	~~0.658669~~	~~23.26~~	~~0.74~~	~~18.3~~	~~18.2~~	~~15.81~~	~~14.62~~	~~0.87~~
26 Feb 2023, 00:00:00	86400	1.245091	0	1.245091	23.97	0.79	19.98	18.92	29.88	27.64	1.58
27 Feb 2023, 00:00:00	86400	1.28921	0	1.28921	24.97	0.75	20.06	20.08	30.94	28.62	1.54
28 Feb 2023, 00:00:00	86400	1.126969	0	1.126969	24.82	0.73	19.45	20.1	27.05	25.02	1.35
1 Mar 2023, 00:00:00	86400	1.057614	0	1.057614	25.04	0.73	19.88	20.46	25.38	23.48	1.24
2 Mar 2023, 00:00:00	86400	0.837014	0	0.837014	24.85	0.81	21.29	20.59	20.09	18.58	0.98
3 Mar 2023, 00:00:00	86400	0.814563	0	0.814563	24.55	0.68	18.05	19.88	19.55	18.08	0.98
~~4 Mar 2023, 00:00:00~~	~~86400~~	~~0.143283~~	~~0~~	~~0.143283~~	~~24.03~~	~~0.6~~	~~15.66~~	~~19.31~~	~~3.44~~	~~3.18~~	~~0.18~~
~~5 Mar 2023, 00:00:00~~	~~86400~~	~~0.016262~~	~~0~~	~~0.016262~~	~~24.3~~	~~0.64~~	~~16.91~~	~~19.58~~	~~0.39~~	~~0.36~~	~~0.02~~
~~6 Mar 2023, 00:00:00~~	~~86400~~	~~0.016347~~	~~0~~	~~0.016347~~	~~25.22~~	~~0.71~~	~~19.38~~	~~20.32~~	~~0.39~~	~~0.36~~	~~0.02~~
~~7 Mar 2023, 00:00:00~~	~~86400~~	~~0.595932~~	~~0~~	~~0.595932~~	~~26.14~~	~~0.73~~	~~20.84~~	~~21.04~~	~~14.30~~	~~13.23~~	~~0.68~~
~~8 Mar 2023, 00:00:00~~	~~86400~~	~~1.072646~~	~~0~~	~~1.072646~~	~~27.36~~	~~0.75~~	~~22.42~~	~~22.76~~	~~25.74~~	~~23.81~~	~~1.13~~
9 Mar 2023, 00:00:00	86400	0.843806	0	0.843806	26.85	0.73	21.58	22.91	20.25	18.73	0.88
10 Mar 2023, 00:00:00	86400	0.838815	0	0.838815	25.43	0.8	21.76	21.11	20.13	18.62	0.95
11 Mar 2023, 00:00:00	86400	0.857261	0	0.857261	25.34	0.87	23.03	20.85	20.57	19.03	0.99
12 Mar 2023, 00:00:00	86400	0.971267	0	0.971267	25.98	0.89	24.03	22.07	23.31	21.56	1.06
13 Mar 2023, 00:00:00	86400	1.256602	0	1.256602	25.05	0.82	21.82	20.58	30.16	27.90	1.47
14 Mar 2023, 00:00:00	86400	1.166289	0	1.166289	25.58	0.75	20.69	20.92	27.99	25.89	1.34
15 Mar 2023, 00:00:00	86400	1.190467	0	1.190467	25.69	0.8	21.8	20.77	28.57	26.43	1.38
16 Mar 2023, 00:00:00	86400	2.354231	0	2.354231	27.16	0.8	23.27	22.63	56.50	52.26	2.50
17 Mar 2023, 00:00:00	86400	2.052906	0	2.052906	27.9	0.79	23.71	23.6	49.27	45.57	2.09
18 Mar 2023, 00:00:00	86400	2.070222	0	2.070222	26.84	0.79	22.89	22.25	49.69	45.96	2.23
19 Mar 2023, 00:00:00	86400	1.386961	0	1.386961	26.35	0.77	21.86	21.69	33.29	30.79	1.53

LEGEND
Green = CTECK on
Red = Cteck Off
Grey Crossed out is ~~Excluded Data~~

Cteck Off	13.52	kWh/CDD
CTECK On	10.56	kWh/CDD
Decrease	2.965	kWh/CDD
% Decrease	21.93	%

Table 1 – Result *Summary* (normalised over a single comparative 9-day trial period)

Energy Consumption Vs CCD Vs kWh/CCD



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SITE DETAILS

System:	Air Conditioning
Brand:	Haier
Style:	Ducted
Capacity Refrigeration:	15.5kwr
Capacity Electrical:	4.3 kwe
Age:	less than 24 months

The Air Conditioning system services a large 5-bedroom home, with 5 adult occupants, a work-from-home situation with the home constantly occupied, the system has 6 operating zones and often operates 24/7, the owners estimate the system is used 1/4 of the year (13 weeks)

"The CTECK units has helped our system maintains conditions with less dramatic temperature swings, we have only seen & felt benefits in conditions as well as using less energy."

"Homeowners"

This home operates its system approx. 13 weeks a year.

- ✓ 21.93% Energy Savings
- ✓ 749 kWh
- ✓ 507 kg GHG
- ✓ $225 year

Estimated savings potential over 13 weeks of operation per year, and Estimated ROI of 3.6 Years (Energy cost $0.30/kWh) This application is typically a very low usage, most homes operate their systems more often through the year providing greater savings potential.