

DOCKETED

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Industrial decarbonization (Opportunities)

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IAC SDSU Metrics:

	Energy cost (\$/yr)
• Maximum total energy cost	3,261,247
• Minimum energy cost	33,230
• Average	400,459



Metrics

Savings	Annual saving (\$/yr)
• Maximum saving	1,211,003
• Minimum saving	11,420
• Average saving	67,639

\$1.77 saving for every dollar investment on energy conservation.



More metrics:

Implementation cost	Cost (\$)
• Maximum cost	3,329,500
• Minimum cost	300
• Average cost	102,678
Total implementation cost	26,388,145



More:

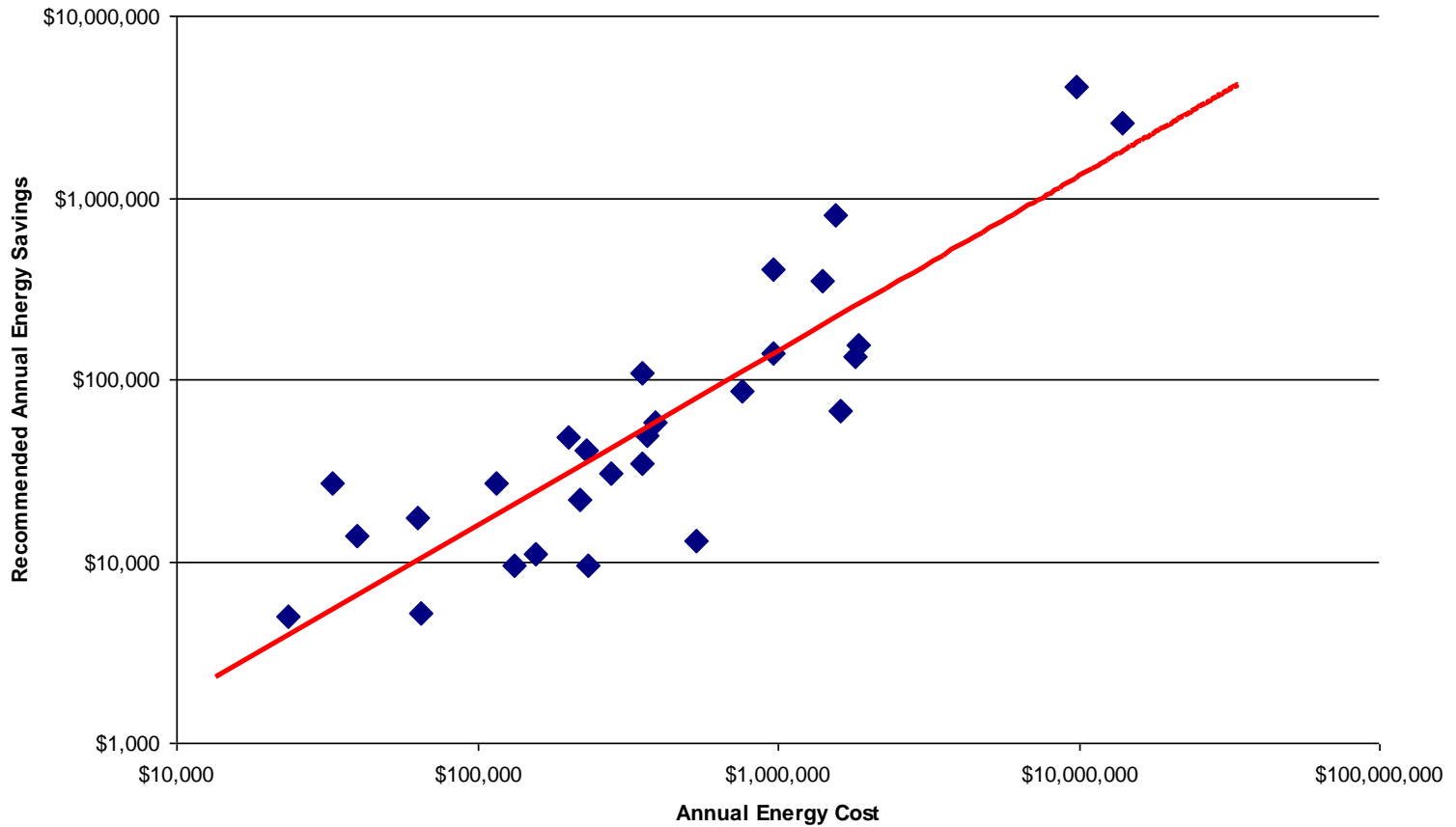
Total Payback period

= total implementation cost / total annual savings:

26,388,145 / 17,383,096 = 1.5 years

Savings

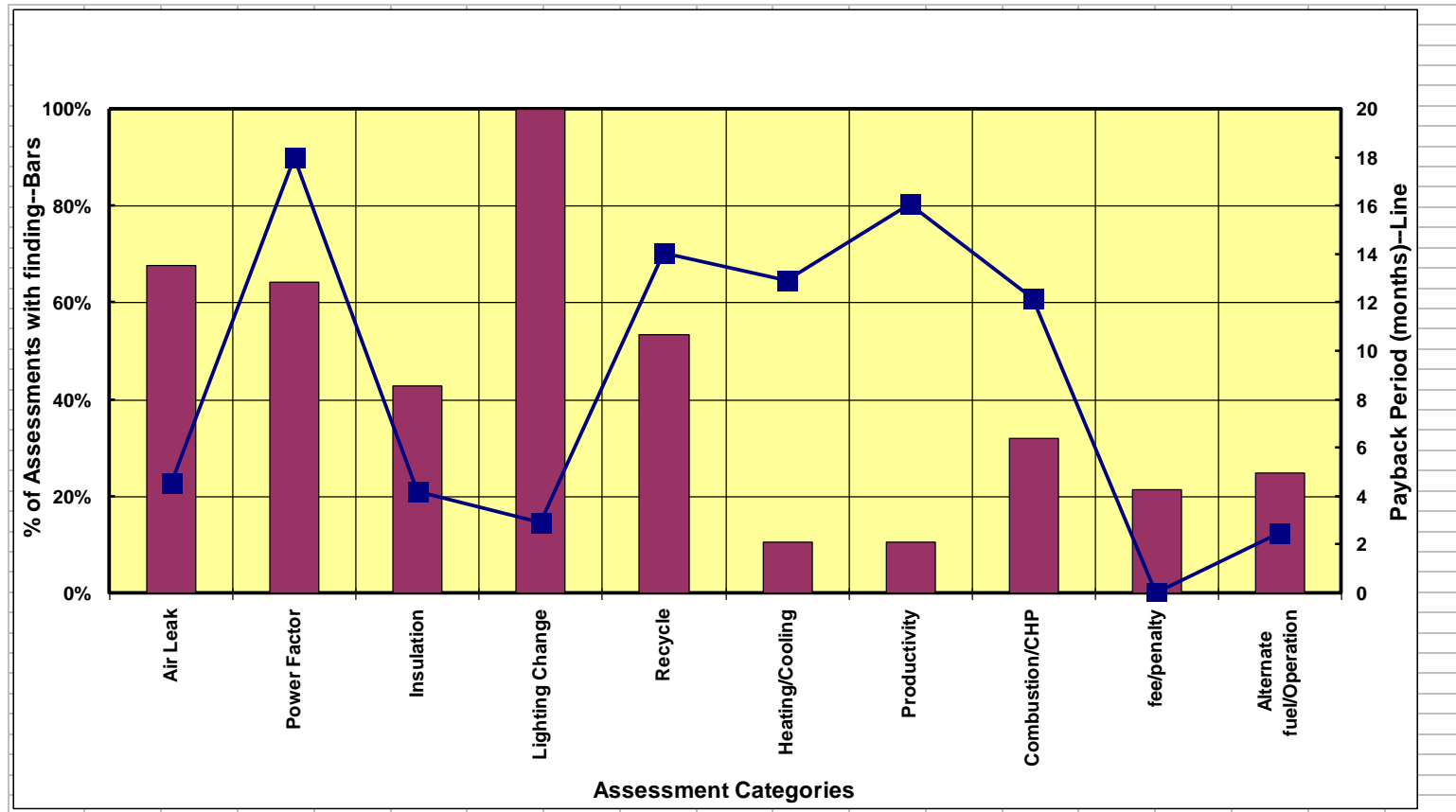
Recommended Savings as a function of Annual Energy Cost



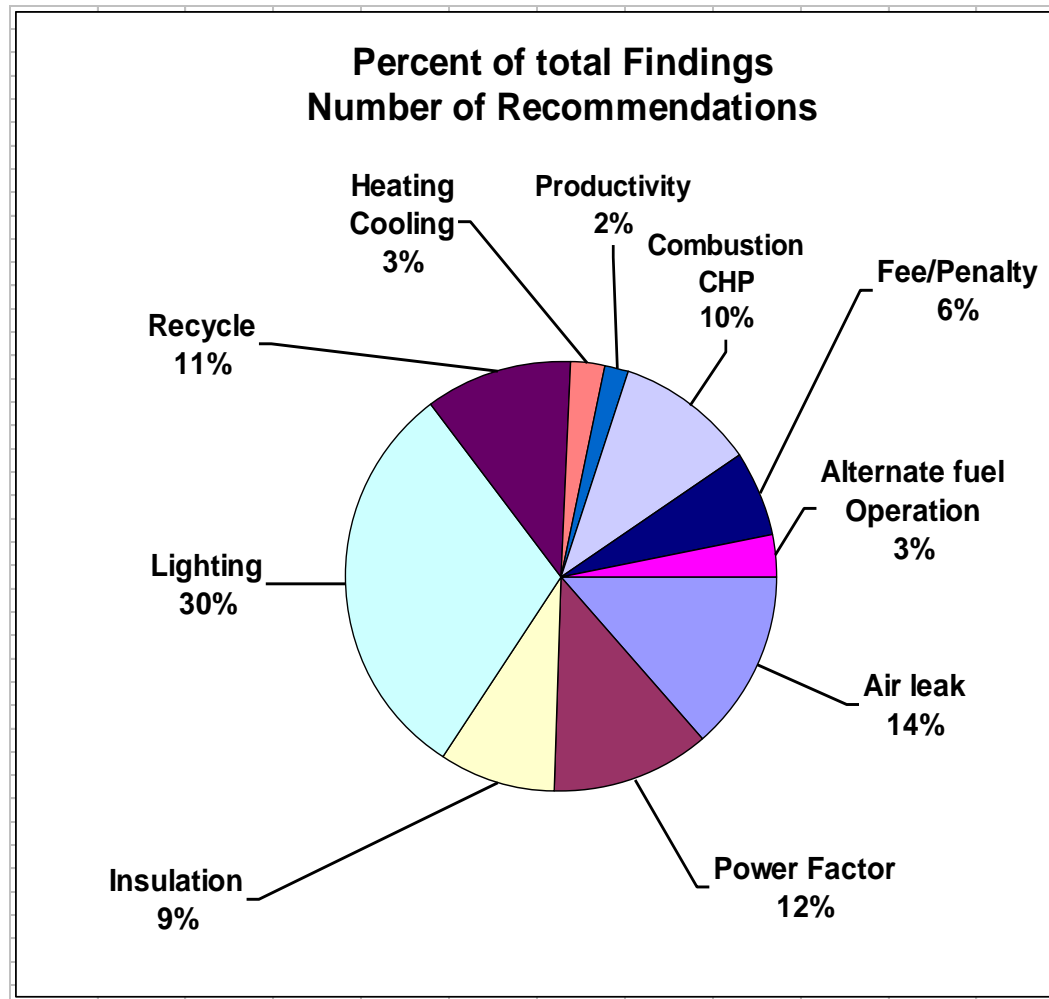
Most common recommendations

Number	Savings	Imp C	Savings	Imp C	Imp C	Imp C	Savings	Imp C	Savings	Imp C	Savings	Imp C	Savings	Imp C	Savings	Imp C	Savings	Imp C
			\$478	\$1,200	401	\$692	\$2,486	\$7,088	\$1,788	\$0								
	\$557	\$3,697	\$1,512	\$1,200			\$1,529	\$5,025	\$1,349	\$0								
			\$1,170	\$1,802			\$234	\$296	\$2,052	\$0	\$597	\$294	\$22,885	\$8,500				
	\$2,725	\$388					\$8,249	\$8,939	\$3,000	\$0								
	\$1,296	\$600					\$13,580	\$10,927			\$7,014	\$24,388						
			\$2,493	\$2,532	\$2,835	\$5,442	\$7,281	\$240	\$9,350	\$0			\$15,350	\$1,210	\$19,278	\$18,290	\$1,200	\$0
			\$5,121	\$7,874			\$19,572	\$0	\$27,303	\$175,000					\$34,468	\$18,760		
	\$2,778	\$300					\$2,745	\$0									\$5,373	\$0
	\$441	\$180	\$6,070	\$8,640			\$12,523	\$407	\$28,528	\$2,200							\$296	\$0
	\$5,564	\$27,000	\$2,969	\$4,650			\$8,126	\$5,752	\$333	\$0								
	\$12,892	\$2,400	\$9,873	\$10,440			\$1,858	\$74	\$552	\$0							\$1,480	\$0
	\$11,154	\$1,200					\$109,215	\$1,962							\$836,969	\$1,167,469		
					\$78,477	\$54,255	\$1,979	\$203							\$27,815	\$12,241		
	\$2,387	\$3,120					\$4,907	\$4,209	\$5,625									
	\$13,683	\$2,700	\$16,646	\$15,900			\$4,706	\$282	\$5,625	\$0								
	\$4,494	\$1,440	\$17,053	\$23,870	\$16,464	\$3,385	\$8,942	\$1,000										
	\$10,463	\$2,970			\$14,729	\$12,008	\$3,669	\$325	\$6,174									
	\$4,379	\$2,190	\$53,505	\$55,889			\$46,236	\$297			\$15,884	\$611						
	\$22,921	\$4,950	\$45,054	\$173,974	\$36,284	\$19,204	\$8,387	\$13,894	\$43,810	\$0								
					\$165,697	\$5,304	\$8,053	\$110	\$11,530	\$0								
	\$11,365	\$2,160	\$4,301	\$15,406			\$593	\$495									\$14,313	\$0
	\$2,898	\$660	\$113,313	\$117,135	\$5,071	\$5,224	\$12,091	\$2,232										
	\$1,416	\$1,740			\$3,563	\$3,994	\$5,105	\$460							\$2,124	\$2,600		
	\$126,949	\$31,740					\$7,347	\$609	\$83,474	\$92,279								
	\$1,602	\$706	\$766	\$2,625	\$813	\$915	\$6,311	\$13,572										
			\$40,197	\$43,260	\$732	\$583	\$3,273	\$66					\$134,361	\$221,436	\$3,801,442	\$3,323,986		
			\$1,970	\$6,440	\$6,380	\$4,526	\$17,991	\$946							\$40,949	\$25,380		
			\$32,031	\$38,570			\$251	\$128							\$235,855	\$281,796	\$13,123	\$0
Sum	\$239,964	\$90,141	\$354,522	\$531,407	\$331,446	\$115,532	\$327,239	\$79,538	\$230,493	\$269,479	\$23,495	\$25,293	\$172,596	\$231,146	\$5,217,914	\$5,283,456	\$35,785	\$0
number	19.00	67.86%	18.00	64.29%	12.00	42.86%	28.00	100.00%	15.00	53.57%	3.00	10.71%	3.00	10.71%	9.00	32.14%	6.00	21.43%
payback	4.51	months	17.99	months	4.18	months	2.92	months	14.03	months	12.92	months	16.07	months	12.15	months	0.00	months
average	\$12,630	\$4,744	\$18,688	\$29,542	\$32,433	\$11,042	\$12,229	\$3,136	\$15,366	\$20,729	\$7,832	\$8,431	\$19,118	\$4,855	\$189,945	\$275,382	\$4,532	\$0

Data Averages

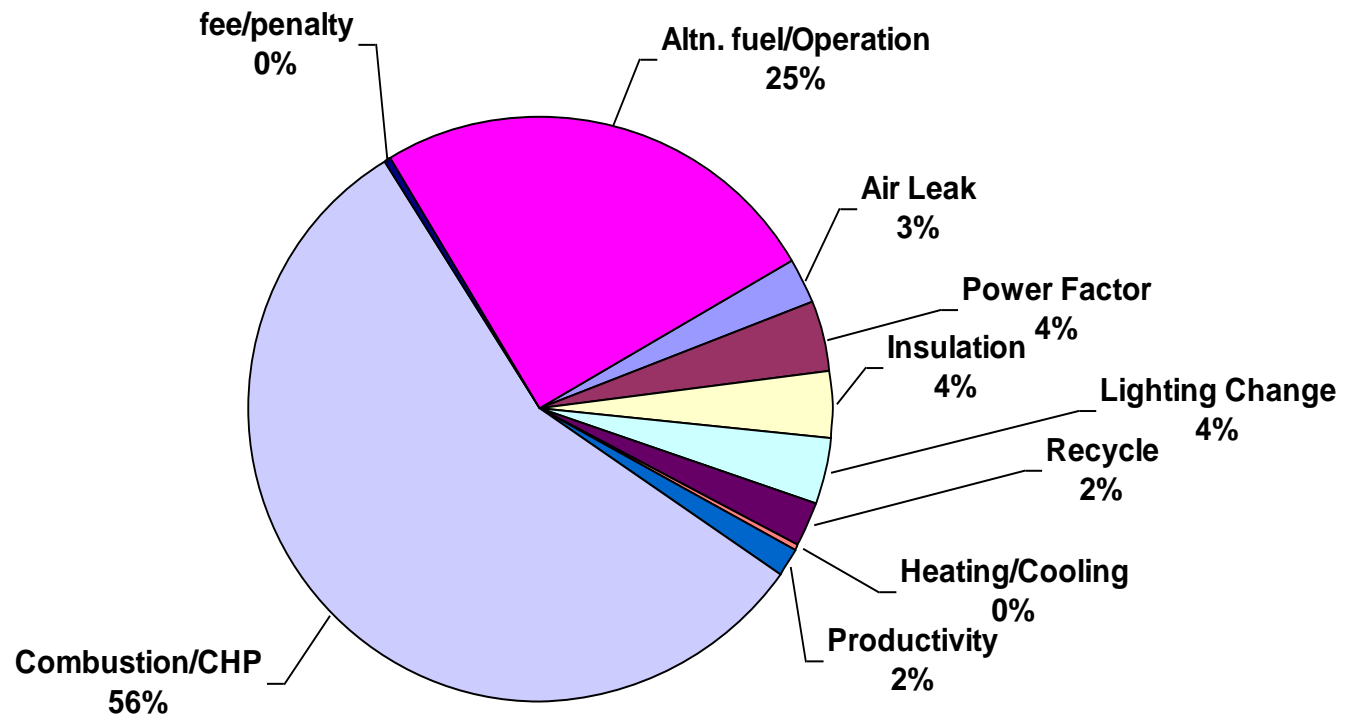


Recommendations



Recommendations (continued)

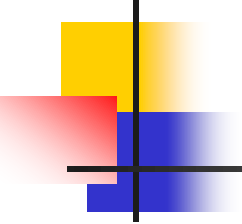
Percent of Total Dollar Savings





Conclusion

- VFD
- Improve combustion efficiency
- CHP, boiler economizer, waste heat recovery



THANK YOU!