Supplemental Material to Cryogenic Roadmap Current Commercial Technology

	Refrigeration			Approximate		<u> </u>		Capital Cost		Input Power/	0/ 0 /
		Working Fluid	Capacity	Refrigeration	Cycle	Expander	Plant Cost				% Carnot
	(K)		(Supplier Units)	(W)				<u>\$\$\$</u>	(KW)	(W/W)	
Large Scale GM Systems											
Leyblod 120T	65	He	130 W	130	GM	Recip	\$20,200	\$155.38	6.5	50.0	7.23%
Cryomech AL200	65	He	150 W	150	GM	Recip	\$19,600	\$130.67	5.5	36.7	9.86%
Helium Gas Systems											
PSI Model 1620	65	He	1200 W	1200	Claude	Recip	\$400,000	\$333.33	105	87.5	4.13%
Stirling Cycle											
Stirling Cryogenics LPC04	80	He	4200 Watts	4200	Stirling	Recip	\$400,000	\$95.24	45	10.7	25.67%
Large Scale Recondensing Systems											
PSI	80	??	11,500 Watts	11,500	Brayton	Turbine	\$800,000	\$69.57	167	14.5	18.94%
Liquid Air Plants											
Cosmodyne GF-1	80	N ₂	4 T/Day	8,400	Brayton	Turbine	\$700,000	\$83.33	372	44.3	6.21%
Cosmodyne Aspen 1000	80	N ₂	1000 nM ³ /Hr	64,969	Brayton	Turbine	\$2,650,000	\$40.79	1400	21.5	12.76%
GEECO EDLP-20TN	80	N ₂	20 T/Day	42,000	Brayton	Turbine	\$1,790,000	\$42.62	933	22.2	12.38%
GEECO EDLP-40TN	80	N ₂	40 T/Day	84,000	Brayton	Turbine	\$2,750,000	\$32.74	1773	21.1	13.03%