

				Power demand per Unit w/o margins [W]			EDL			Deployment Mode			Idle/ Perception			Safe/ Hibernation			Communication			Charging (RTG)			Locomotion			Payload: Observation			Payload: Ice Core Mode		
Subsystem	Unit	Amount [-]	Maturity Level Margin [%]	Standby (SB)	ON Nominal (ON)	ON Max (MAX)	Status	Duty Cycle	Power [W]	Status	Duty Cycle	Power [W]	Status	Duty Cycle	Power [W]	Status	Duty Cycle	Power [W]	Status	Duty Cycle	Power [W]	Status	Duty Cycle	Power [W]	Status	Duty Cycle	Power [W]	Status	Duty Cycle	Power [W]	Status	Duty Cycle	Power [W]
Payload																					0												
	Ice Core Drill	1	20,00%	0	1	12	OFF			OFF		0	OFF		0	OFF		0	OFF		0	OFF		0	OFF		0	OFF		0	MAX	50%	7,2
	APXS Analyser	1	20,00%	0	0,1	1	OFF			OFF		0	OFF		0	OFF		0	OFF		0	OFF		0	OFF		0	OFF		0	MAX	50%	0,6
	Stereo Vision Camera	2	5,00%	0	2	4	OFF			ON	50%	2,1	ON	20%	0,84	OFF		0	OFF		0	OFF	0	ON	100%	4,2	ON	100%	4,2	OFF		0	
	Hazcams	4	5,00%	0	2	4	OFF			ON	50%	4,2	ON	20%	1,68	OFF		0	OFF		0	OFF	0	ON	100%	8,4	OFF		0	OFF		0	
	Ground RADAR	1	10,00%	0	0,1	1	OFF			OFF		0	OFF		0	OFF		0	OFF		0	OFF	0	OFF	0	MAX	25%	0,275	OFF		0		
	LED Lampe	16	20,00%	0	0,75	2	OFF			OFF		0	ON	20%	2,88	OFF		0	OFF		0	OFF	0	ON	100%	14,4	ON	100%	14,4	OFF		0	
Command & DH												0			0			0			0			0			0					0	
	OBC	1	5,00%	1	8	10	OFF			ON	100%	8,4	MAX	90%	9,45	SB	100%	1,05	ON	100%	8,4	ON	5%	0,42	ON	100%	8,4	ON	100%	8,4	ON	100%	8,4
	Housekeeping	1	20,00%	0	1	2	OFF			ON	10%	0,12	ON	10%	0,12	ON	10%	0,12	ON	100%	1,2	ON	5%	0,06	ON	100%	1,2	ON	100%	1,2	ON	100%	1,2
Thermal Control System												0			0			0			0			0			0					0	
	Heaters	2	5,00%	0	1	2	ON	100%	2,1	ON	100%	2,1	ON	50%	1,05	ON	100%	2,1	ON	100%	2,1	OFF		0	ON	100%	2,1	ON	100%	2,1	ON	100%	2,1
Electric Power Supply									0			0			0			0			0			0			0					0	
	PCDU	1	20,00%	0,6	1	1	SB	100%	0,72	SB	100%	0,72	ON	100%	1,2	SB	100%	0,72	ON	100%	1,2	ON	100%	1,2	ON	100%	1,2	ON	100%	1,2	ON	100%	1,2
Communication												0			0			0			0			0			0					0	
	Transmitter	1	5,00%	0,6	10	15	OFF			OFF		0	OFF		0	OFF		0	MAX	100%	15,75	OFF		0	OFF		0	OFF		0	OFF		0
	Receiver	1	20,00%	0,35	1	2	OFF			ON	100%	1,2	ON	100%	1,2	ON	100%	1,2	MAX	100%	2,4	SB	100%	0,42	ON	100%	1,2	ON	100%	1,2	ON	100%	1,2
Locomotion												0			0			0			0			0			0					0	
	Motor (wheels)	4	20,00%	0	9	15	OFF			OFF		0	OFF		0	OFF		0	OFF		0	OFF	0	ON	100%	43,2	OFF		0	OFF		0	
	Motor (steering)	4	5,00%	0	2	4	OFF			OFF		0	OFF		0	OFF		0	OFF		0	OFF	0	ON	50%	4,2	OFF		0	OFF		0	
	IMU	4	10,00%	0	1	1	OFF			ON	100%	4,4	ON	5%	0,22	OFF		0	ON	100%	4,4	OFF	0	ON	100%	4,4	ON	100%	4,4	ON	100%	4,4	
	Motor (Deployment)	2	5,00%	0	2	4				ON	75%	1,575			0			0			0			0			0		ON	25%	0,525		
Chassi & Structure												0			0			0			0			0			0					0	
	Boom Mechanism	1	20,00%	0	8	8	OFF			ON	100%	9,6	OFF		0	OFF		0	OFF		0	OFF	0	OFF	0	OFF	0	OFF		0	OFF		0
	Drill Mechanism	1	20,00%	0	3	3	OFF			OFF		0	OFF		0	OFF		0	OFF		0	OFF	0	OFF	0	OFF	0	OFF		0	ON	50%	1,8
	Cam Rotation Motors	2	5,00%	0	2	4	OFF			ON	100%	2,1	ON	20%	0,42	OFF		0	OFF		0	OFF	0	ON	100%	2,1	ON	100%	2,1	OFF		0	
S/C Net Power Demand [W]			Margin [%]						2,82			36,52			19,06			5,19			35,45			2,10			95,00			39,48			28,63
Power Distribution loss			2,00%						0,06			0,73			0,38			0,10			0,71			0,04			1,90			0,79			0,57
Load Discharge (PCDU)			7,00%						0,20			2,56			1,33			0,36			2,48			0,15			6,65			2,76			2,00
PCDU Margin (Conversion etc.)			5,00%						0,14			1,83			0,95			0,26			1,77												
Harness losses			3,50%						0,10			1,28			0,67			0,18			1,24			0,07			3,33			1,38			1,00
Additional losses ...			5,00%						0,14			1,83			0,95			0,26			1,77			0,11			4,75			1,97			1,43
S/C Brutto Power Demand [W]									3,45			44,73			23,35			6,36			43,43			2,47			111,63			46,38			33,63
System Margin			20,00%						0,69			8,95			4,67			1,27			8,69			0,49			22,33			9,28			6,73
Required power from Battery (20% System Margin) [W]									4,15			53,68			28,02			7,63			52,11			2,96			133,95			55,66			40,36
Total Rover Power Demand excluding battery charge (Battery Charge loss 5% + Lilon Efficiency 5%) [W]			10,00%						4,56			59,04			30,82			8,39			57,32			3,26			147,35			61,23			44,40
Incoming Power RTG									12,08			12,08			12,08			12,08			12,08			12,08			12,08			12,08			12,08
Total Rover Power Demand including battery charge [W]									-7,52			46,96			18,74			-3,69			45,24			-8,82			135,27			49,15			32,32