Electrical Budget Worksheet for Alchera 1 Calculate your DC Loads:

Lighting		Amps	Hours	AH/Day	
	Running Lights	4.6		0.0	
	Masthead Tricolor Light	2.2	9	19.8	
	•		3		
	Anchor Light	1.8		0.0	
	Strobe Light	0.6	2	1.2	
	Foredeck Light	1.4	0.1	0.1	
	Cabin Light (small)	0.3	9	2.7	
	9 (/	0.7	2	1.4	
	Cabin Light (big)		2		
	Steaming Light	0.8		0.0	
	Instrument Lights	0.3	9	2.3	
				0.0	
	Other			0.0	
	Culoi	Lighting AH	Г	27.5	
		Lighting An	L	21.5	
		_			
Galley		Amps	Hours	AH/Day	
	Refrigeration	4.7	6	28.2	
	Prop Solenoid	0.5	0.5	0.3	
	Other			0.0	
	Culoi	Galley AH	Г	28.5	
		Galley An	L	20.3	
Electronic	s	Amps	Hours	AH/Day	
	Autopilot	4.5	24	108.0	
	VHF (receive)	0.1	24	2.4	
	'				
	VHF (transmit)	7.0	0.03	0.2	
	SSB (receive)	1.8	2	3.6	
	SSB (transmit)	27.0	0.08	2.2	
	SSB Digital controller			0.0	
	GPS	0.2	24	4.8	
	Instruments	2.0	24	48.0	
	Weather fax receiver			0.0	
	Radar (standby)	1.8	20	36.0	
	Radar (transmit)	4.0	4	16.0	
	AIS	0.2	24	4.8	
		0.2	24		
	Energy Monitors			0.0	
	Stereo	0.5		0.0	
	Computer (screen off)	0.8	20	16.0	
	Computer (screen on)	1.3	4	5.2	
	Computer (serial adapter)	1.0		0.0	
		0.5	0.05		
	Iridium	0.5	0.25	0.1	
		Electronics AH		247.3	
Plumbing		Amps	Hours	AH/Day	
	Fresh Water Pump	6.3	0.05	0.3	Calculate using average water consumption.
	•	5.0	0.00	0.0	This should be zero unless the boat leaks.
	Bilge Pump(s)	5.0			This should be zero unless the boat leaks.
	0.1				
	Other		_	0.0	
	Other	Plumbing AH		0.0	
	Other	Plumbing AH			
Inverter	Other	_	Hrs/day	0.3	All values assume inverter efficiency – 85%
Inverter		Amps	Hrs/day	0.3 AH/Day	All values assume inverter efficiency = 85%.
Inverter	Microwave	_	Hrs/day 0.17	0.3 AH/Day 11.9	All values assume inverter efficiency = 85%. Power factor may mess up this estimate.
Inverter	Microwave Chargers (nicad)	Amps		0.3 AH/Day 11.9 0.0	•
Inverter	Microwave	Amps		0.3 AH/Day 11.9	•
Inverter	Microwave Chargers (nicad)	Amps		0.3 AH/Day 11.9 0.0 0.0	•
Inverter	Microwave Chargers (nicad)	Amps 70.0		0.3 AH/Day 11.9 0.0	•
Inverter	Microwave Chargers (nicad) Other	Amps 70.0 Inverter AH		0.3 AH/Day 11.9 0.0 0.0 11.9	•
Inverter	Microwave Chargers (nicad)	Amps 70.0 Inverter AH		0.3 AH/Day 11.9 0.0 0.0	•
	Microwave Chargers (nicad) Other Gross Energy Consumption	Amps 70.0 Inverter AH		0.3 AH/Day 11.9 0.0 0.0 11.9	•
	Microwave Chargers (nicad) Other	Amps 70.0 Inverter AH		0.3 AH/Day 11.9 0.0 0.0 11.9	•
	Microwave Chargers (nicad) Other Gross Energy Consumption	Amps 70.0 Inverter AH AH/Day	0.17 [0.3 AH/Day 11.9 0.0 0.0 11.9	•
Inverter Alternative	Microwave Chargers (nicad) Other Gross Energy Consumption Energy Sources Device	Amps 70.0 Inverter AH AH/Day	0.17	0.3 AH/Day 11.9 0.0 0.0 11.9 315.5	Power factor may mess up this estimate.
	Microwave Chargers (nicad) Other Gross Energy Consumption Energy Sources Device Solar, avg	Amps 70.0 Inverter AH AH/Day	0.17	0.3 AH/Day 11.9 0.0 0.0 11.9 315.5	Power factor may mess up this estimate. Assumes one large panel.
	Microwave Chargers (nicad) Other Gross Energy Consumption Energy Sources Device Solar, avg Wind, avg	Amps 70.0 Inverter AH AH/Day	0.17	0.3 AH/Day 11.9 0.0 0.0 11.9 315.5 AH/day 45.0 0.0	Power factor may mess up this estimate.
	Microwave Chargers (nicad) Other Gross Energy Consumption Energy Sources Device Solar, avg	Amps 70.0 Inverter AH AH/Day	0.17	0.3 AH/Day 11.9 0.0 0.0 11.9 315.5 AH/day 45.0 0.0 0.0	Power factor may mess up this estimate. Assumes one large panel.
	Microwave Chargers (nicad) Other Gross Energy Consumption Energy Sources Device Solar, avg Wind, avg Water, avg.	Amps 70.0 Inverter AH AH/Day Amps 5.0	0.17	0.3 AH/Day 11.9 0.0 0.0 11.9 315.5 AH/day 45.0 0.0 0.0	Power factor may mess up this estimate. Assumes one large panel.
	Microwave Chargers (nicad) Other Gross Energy Consumption Energy Sources Device Solar, avg Wind, avg	Amps 70.0 Inverter AH AH/Day Amps 5.0	0.17	0.3 AH/Day 11.9 0.0 0.0 11.9 315.5 AH/day 45.0 0.0	Power factor may mess up this estimate. Assumes one large panel.
Alternative	Microwave Chargers (nicad) Other Gross Energy Consumption Energy Sources Device Solar, avg Wind, avg Water, avg. Contribution of AES AH/Day	Amps 70.0 Inverter AH AH/Day Amps 5.0	0.17	0.3 AH/Day 11.9 0.0 0.0 11.9 315.5 AH/day 45.0 0.0 0.0 45.0	Power factor may mess up this estimate. Assumes one large panel.
Alternative	Microwave Chargers (nicad) Other Gross Energy Consumption Energy Sources Device Solar, avg Wind, avg Water, avg.	Amps 70.0 Inverter AH AH/Day Amps 5.0	0.17	0.3 AH/Day 11.9 0.0 0.0 11.9 315.5 AH/day 45.0 0.0 0.0	Power factor may mess up this estimate. Assumes one large panel.
Alternative Net Energy	Microwave Chargers (nicad) Other Gross Energy Consumption Energy Sources Device Solar, avg Wind, avg Water, avg. Contribution of AES AH/Day	Amps 70.0 Inverter AH AH/Day Amps 5.0	0.17	AH/Day 11.9 0.0 0.0 11.9 315.5 AH/day 45.0 0.0 45.0 270.5	Power factor may mess up this estimate. Assumes one large panel.
Alternative Net Energy	Microwave Chargers (nicad) Other Gross Energy Consumption Energy Sources Device Solar, avg Wind, avg Water, avg. Contribution of AES AH/Day	Amps 70.0 Inverter AH AH/Day Amps 5.0	0.17	0.3 AH/Day 11.9 0.0 0.0 11.9 315.5 AH/day 45.0 0.0 0.0 45.0	Power factor may mess up this estimate. Assumes one large panel.
Alternative Net Energy	Microwave Chargers (nicad) Other Gross Energy Consumption Energy Sources Device Solar, avg Wind, avg Water, avg. Contribution of AES AH/Day	Amps 70.0 Inverter AH AH/Day Amps 5.0	0.17	AH/Day 11.9 0.0 0.0 11.9 315.5 AH/day 45.0 0.0 45.0 270.5	Power factor may mess up this estimate. Assumes one large panel.
Alternative Net Energy Desired Ho	Microwave Chargers (nicad) Other Gross Energy Consumption Energy Sources Device Solar, avg Wind, avg Water, avg. Contribution of AES AH/Day of Consumption, AH/Day cours Between Charging	Amps 70.0 Inverter AH AH/Day Amps 5.0	0.17	0.3 AH/Day 11.9 0.0 0.0 11.9 315.5 AH/day 45.0 0.0 45.0 270.5	Power factor may mess up this estimate. Assumes one large panel. Assumes AIR Marine wind turbine in good location.
Alternative Net Energy Desired Ho	Microwave Chargers (nicad) Other Gross Energy Consumption Energy Sources Device Solar, avg Wind, avg Water, avg. Contribution of AES AH/Day	Amps 70.0 Inverter AH AH/Day Amps 5.0	0.17	AH/Day 11.9 0.0 0.0 11.9 315.5 AH/day 45.0 0.0 45.0 270.5	Power factor may mess up this estimate. Assumes one large panel.
Alternative Net Energy Desired Ho	Microwave Chargers (nicad) Other Gross Energy Consumption Energy Sources Device Solar, avg Wind, avg Water, avg. Contribution of AES AH/Day of Consumption, AH/Day cours Between Charging	Amps 70.0 Inverter AH AH/Day Amps 5.0	0.17	0.3 AH/Day 11.9 0.0 0.0 11.9 315.5 AH/day 45.0 0.0 45.0 270.5	Power factor may mess up this estimate. Assumes one large panel. Assumes AIR Marine wind turbine in good location.
Alternative Net Energy Desired Ho Range of E	Microwave Chargers (nicad) Other Gross Energy Consumption Energy Sources Device Solar, avg Wind, avg Water, avg. Contribution of AES AH/Day of Consumption, AH/Day Durs Between Charging Battery Use	Amps 70.0 Inverter AH AH/Day Amps 5.0	0.17	0.3 AH/Day 11.9 0.0 0.0 11.9 315.5 AH/day 45.0 0.0 45.0 270.5 12	Power factor may mess up this estimate. Assumes one large panel. Assumes AIR Marine wind turbine in good location.
Alternative Net Energy Desired Ho Range of E	Microwave Chargers (nicad) Other Gross Energy Consumption Energy Sources Device Solar, avg Wind, avg Water, avg. Contribution of AES AH/Day of Consumption, AH/Day cours Between Charging	Amps 70.0 Inverter AH AH/Day Amps 5.0	0.17	0.3 AH/Day 11.9 0.0 0.0 11.9 315.5 AH/day 45.0 0.0 45.0 270.5	Power factor may mess up this estimate. Assumes one large panel. Assumes AIR Marine wind turbine in good location.
Alternative Net Energy Desired Ho Range of E Recommen	Microwave Chargers (nicad) Other Gross Energy Consumption Energy Sources Device Solar, avg Wind, avg Water, avg. Contribution of AES AH/Day Consumption, AH/Day Durs Between Charging Battery Use Inded Battery Capacity	Amps 70.0 Inverter AH AH/Day Amps 5.0	0.17	0.3 AH/Day 11.9 0.0 0.0 11.9 315.5 AH/day 45.0 0.0 45.0 270.5 12 270	Assumes one large panel. Assumes AIR Marine wind turbine in good location. For example, from 50-85% state of charge.
Alternative Net Energy Desired Ho Range of E	Microwave Chargers (nicad) Other Gross Energy Consumption Energy Sources Device Solar, avg Wind, avg Water, avg. Contribution of AES AH/Day of Consumption, AH/Day Durs Between Charging Battery Use	Amps 70.0 Inverter AH AH/Day Amps 5.0	0.17	0.3 AH/Day 11.9 0.0 0.0 11.9 315.5 AH/day 45.0 0.0 45.0 270.5 12	Power factor may mess up this estimate. Assumes one large panel. Assumes AIR Marine wind turbine in good location.
Alternative Net Energy Desired Ho Range of E	Microwave Chargers (nicad) Other Gross Energy Consumption Energy Sources Device Solar, avg Wind, avg Water, avg. Contribution of AES AH/Day Consumption, AH/Day Durs Between Charging Battery Use Inded Battery Capacity	Amps 70.0 Inverter AH AH/Day Amps 5.0	0.17	0.3 AH/Day 11.9 0.0 0.0 11.9 315.5 AH/day 45.0 0.0 45.0 270.5 12 270	Assumes one large panel. Assumes AIR Marine wind turbine in good location. For example, from 50-85% state of charge.
Alternative Net Energy Desired Ho Range of E Recommen	Microwave Chargers (nicad) Other Gross Energy Consumption Energy Sources Device Solar, avg Wind, avg Water, avg. Contribution of AES AH/Day ours Between Charging Battery Use Inded Battery Capacity Output, Amps	Amps 70.0 Inverter AH AH/Day Amps 5.0	0.17	0.3 AH/Day 11.9 0.0 0.0 11.9 315.5 AH/day 45.0 0.0 45.0 270.5 12 0.50 90	Assumes one large panel. Assumes AIR Marine wind turbine in good location. For example, from 50-85% state of charge. Target would be 25% flooded, 40% gel, of capacity.
Alternative Net Energy Desired Ho Range of E Recommen	Microwave Chargers (nicad) Other Gross Energy Consumption Energy Sources Device Solar, avg Wind, avg Water, avg. Contribution of AES AH/Day Consumption, AH/Day Durs Between Charging Battery Use Inded Battery Capacity	Amps 70.0 Inverter AH AH/Day Amps 5.0	0.17	0.3 AH/Day 11.9 0.0 0.0 11.9 315.5 AH/day 45.0 0.0 45.0 270.5 12 270	Assumes one large panel. Assumes AIR Marine wind turbine in good location. For example, from 50-85% state of charge.
Alternative Net Energy Desired Ho Range of E Recomment Alternator of Charge Eff	Microwave Chargers (nicad) Other Gross Energy Consumption Energy Sources Device Solar, avg Wind, avg Water, avg. Contribution of AES AH/Day ours Between Charging Battery Use Inded Battery Capacity Output, Amps iciency Factor	Amps 70.0 Inverter AH AH/Day Amps 5.0	0.17	0.3 AH/Day 11.9 0.0 0.0 11.9 315.5 AH/day 45.0 0.0 45.0 270.5 12 0.50 270 90 0.85	Assumes one large panel. Assumes AIR Marine wind turbine in good location. For example, from 50-85% state of charge. Target would be 25% flooded, 40% gel, of capacity. Gels = 95%, flooded cells = 85%
Alternative Net Energy Desired Ho Range of E Recomment Alternator of Charge Eff	Microwave Chargers (nicad) Other Gross Energy Consumption Energy Sources Device Solar, avg Wind, avg Water, avg. Contribution of AES AH/Day ours Between Charging Battery Use Inded Battery Capacity Output, Amps	Amps 70.0 Inverter AH AH/Day Amps 5.0	0.17	0.3 AH/Day 11.9 0.0 0.0 11.9 315.5 AH/day 45.0 0.0 45.0 270.5 12 0.50 90	Assumes one large panel. Assumes AIR Marine wind turbine in good location. For example, from 50-85% state of charge. Target would be 25% flooded, 40% gel, of capacity.