

## **Executive Summary – Aether Lighting Pte. Ltd.**

Objective: Aether Lighting aims to commoditize Light Emitting Diodes (LED) as the future mainstream lighting system. Our vision is to replace all conventional lights with LED.

Benefits: Because they convert more of the electrical energy into light (and not heat, as traditional lamps do), LED lamps are much more energy efficient. LED lamps last ten times longer than traditional lamps, and create less waste when they are finally disposed off. Finally, the lower energy draw of LED lamps brings additional savings in the electrical equipments such as distribution panels, switchgears, etc. Please see appendix 1 for comparison between LED lamps and fluorescent lamps.

Problem: Though proven technically superior in terms of life-cycle cost and environmental impact, the application of LEDs for commercial lighting has not been widely adopted, mainly due to technical and cost considerations. A typical LED lamp based on the super-bright LED technology developed in the last couple of years costs 10 times more than normal fluorescent lamps.

Proposed solution: Aether aims to provide the solutions at an affordable cost to homes and offices. We hope to achieve this through an innovative package of supply, warranty and financing as described below.

The company will design the lighting system and initially outsource the manufacturing of the LED lamps. We will provide technical support and lifetime warranty for our customers. Lifetime warranty is feasible because LED lamps can last up to 20 years based on 12 hours use per day.

Our initial target market in the first five years is commercial buildings in South East Asia and Middle East to catch the construction boom in these areas. While new constructions can integrate our product most easily, we will also design our product for drop-in upgrades to existing lighting systems. A typical office space would use 750 bulbs per floor. A 30-storey building could use up to 22,500 bulbs, approximately US\$ 292,500 of our product.

Our target price in the distributor level is US\$13 per lamp, which is approximately 60% cheaper than existing LED-based products. We aim to bring down our prices rapidly as we achieve economies of scale in our production and distribution. After that, we will expand to homes.

For new buildings, the adoption barrier is not as great because the cost of LED lamps as a percentage of the overall development cost is relatively small. Moreover, this additional cost can easily be covered with the savings from reduced sizing in electrical components due to reduced power requirements of the overall building.

Our marketing effort will target building owners, developers, specifiers (consultants), architects and large facilities such as airports, hospitals, libraries and government buildings. To promote product awareness we will take part in trade exhibitions and advertise in trade magazines. We will form partnerships with local B2B distributors in our target markets. We will offer our distributors higher margins compared to traditional lighting solutions. The distributors' network and experience will enable us to penetrate the market faster, which, in turn, will help us lower selling prices based on economies of scale.

To facilitate adoption of our products, we will also provide loans on a no-profit basis. Owners of existing buildings will only have to make an initial down payment equivalent to

the cost of normal fluorescent lamps, and the rest can be paid in monthly installments over 12 months. The installments will be largely offset by the savings in the electricity bill.

Organization: Aether Lighting will be spearheaded by three MBA graduates from Nanyang Business School. The CEO, Arif Budianto, is an experienced business improvement consultant and will also head the Finance department. Lee Teck Chun, an electrical engineer, with 13 years experience in energy management, will head the Marketing and R&D team. Stanley Budihartono has more than 5 years experience in lean manufacturing and will head the Operations and Logistics division.

Financing: Financially, the plan is very attractive. Our projection for sales start from month seven onwards as we predicted that month one to six would be mostly sales efforts and educating the market. In the first year, we project to sell 20,000 units of lamps (approximately 1 building) every month at US\$ 13 each. The NPV of the project over 5 years is US\$ 2.6 million with an IRR of 156% (See appendix 2 for details).

The team will invest US\$ 500,000 of their own into the business and invites venture capitalists to invest another US\$ 500,000 in exchange for 25% of Aether's shares and one (of 4) seat on its board. We also hope to arrange an overdraft facility from a bank for US\$ 500,000 for our cash flow backup.

Exit Strategy: There are two exit strategies proposed, one being an IPO at the end of year 5 and the other is being acquired by established lighting companies.

We believe this is a wonderful investment opportunity and we look forward to meeting you for further discussions.

## Appendix 1

Lighting System		Fluorescent Lighting	Aether LED Lighting
Lamp Life	A	9,000 hours	50,000 hours
Lamp Price	B	\$3	\$15
Lamp Wattage	C	36 Watts	3 Watts
Annual Operating Hours	D	4,380.00 hours	
Labor \$ per re-lamping	E	\$10	
Average Electric Rate	F	\$ 0.13 Kwh	
Total Number of Sockets/Lamps	G	22500	
Annual System Operating Costs			
Lamps (BxD÷A)G	H	\$32,850.00	\$29,565.00
Labor (ExD÷A)G	I	\$109,500.00	\$0.00
Electricity (CxDxFxG)/1000	J	\$461,213.96	\$38,434.50
Total H+I+J	K	\$603,563.96	\$67,999.50
Estimated Savings for Aether LED Lamps			
Annual Savings (K1-K2)	L	\$535,564.47	
Simple Payback (B2-B1)xG÷L	M	0.50 years	
Return on Investment (L/[(B2-B1)xG]x100%)	N	198.36%	
Annual Energy Savings in Kwh (C1 -C2)D x G / 1000	Q	3,252,150.00 Kwh	

## Appendix 2

	Year	0	1	2	3	4	5
	Aether Lighting Pte. Ltd.	Start up company			Add salesmen, increase salary	Expand overseas	Continue expansion
Initial outlays							
Rental deposit		(10,000)				(5,000)	(5,000)
General equipments							
	Furnitures	(5,000)			(2,000)	(2,000)	(2,000)
	Computers, fax and printers	(4,000)			(5,000)	(5,000)	(5,000)
	Electrical equipments	(3,000)			(5,000)	(5,000)	(5,000)
Market research		(15,000)			(15,000)		
Total		(37,000)	0	0	(27,000)	(17,000)	(17,000)
Sales	Units		120,000	360,000	600,000	960,000	1,440,000
	Price per unit (\$)		13	13	12	12	11
Revenue			1,560,000	4,680,000	7,200,000	11,520,000	15,840,000
COGS	Units		120,000	360,000	600,000	960,000	1,440,000
	Price per unit (\$)		10	10	9	8	7
	Total		1,200,000	3,600,000	5,400,000	7,680,000	10,080,000
Gross Profit			360,000	1,080,000	1,800,000	3,840,000	5,760,000

Expenses							
	Salaries		(288,000)	(316,800)	(595,200)	(892,800)	(1,339,200)
	Travel		(120,000)	(144,000)	(172,800)	(259,200)	(388,800)
	Marketing		(120,000)	(138,000)	(158,700)	(238,050)	(357,075)
	R&D		(24,000)	(24,000)	(36,000)	(54,000)	(81,000)
	Utilities		(6,000)	(6,000)	(7,200)	(14,400)	(28,800)
	Rental		(36,000)	(36,000)	(36,000)	(120,000)	(240,000)
	SGA		(12,000)	(12,000)	(18,000)	(27,000)	(40,500)
	Interest		(30,000)	(30,000)	(30,000)	(30,000)	(30,000)
Total expenses			(636,000)	(706,800)	(1,053,900)	(1,635,450)	(2,505,375)
Earnings before tax		(37,000)	(276,000)	373,200	719,100	2,187,550	3,237,625
Income tax @ 20%			0	74,640	143,820	437,510	647,525
Net income		(37,000)	(276,000)	298,560	575,280	1,750,040	2,590,100
Cumulative Cash flow		(37,000)	(313,000)	(14,440)	560,840	2,310,880	4,900,980

NPV before investment	2,652,339
NPV (US\$)	2,615,339
IRR	156%

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