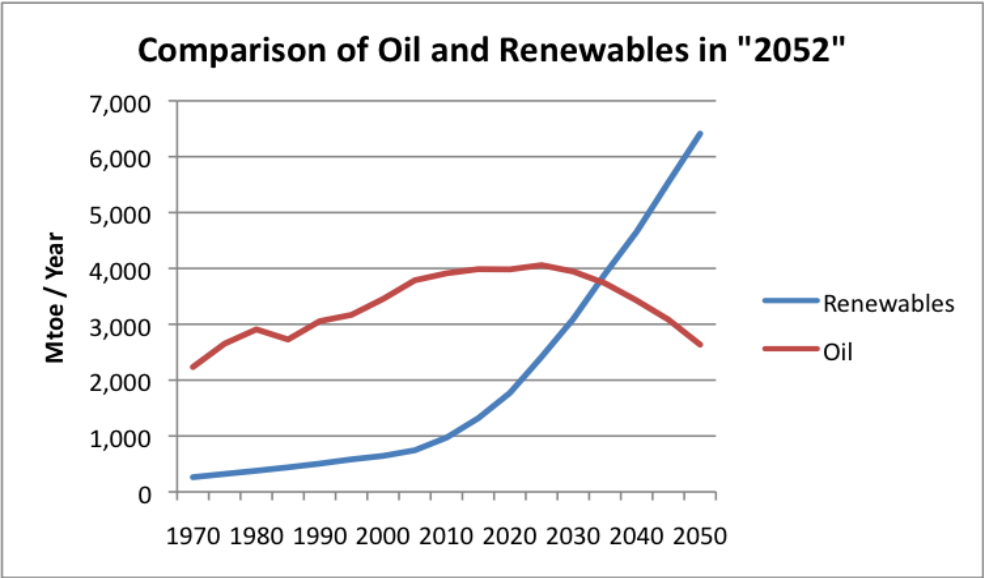


THE PROPOSAL FOR RESEARCH GRANT FOR RESEARCH AND DEVELOPMENT OF A LARGE SCALE RENEWABLE ELECTRICAL ENERGY FROM ACIDIC LAKES AND RIVERS



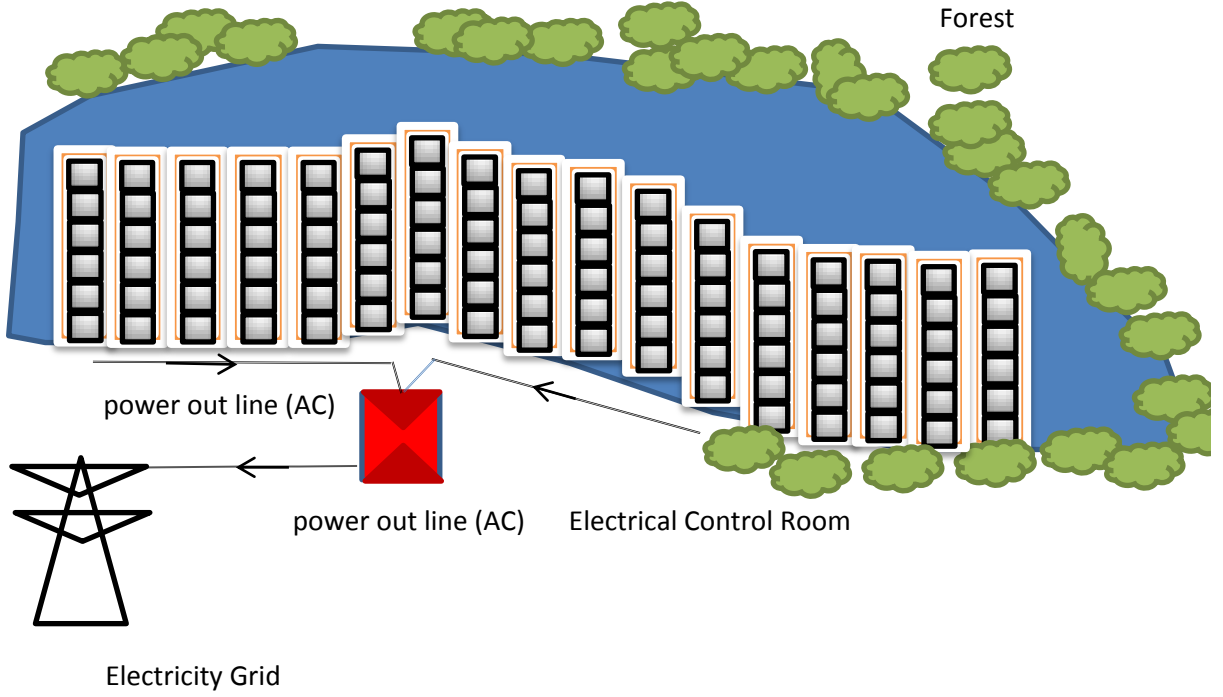
Area of Acid Sulphate Soil World wide with Renewable Energy Resource Potentials

Country	Hectare	acre	Potential MW
Australia	3,000,000	6,900,000	5,796,000
Bangladesh	226,000	519,800	436,632
Brazil	1,111,000	2,555,300	2,146,452
Cameroon	250,000	575,000	483,000
China	100,000	230,000	193,200
Central America	650,000	1,495,000	1,255,800
Finland	380,000	874,000	734,160
Gabon	160,000	368,000	309,120
Gambia	150,000	345,000	289,800
Gahana/Togo/Ber	825,000	1,897,500	1,593,900
Guinea	1,175,000	2,702,500	2,270,100
Guinea-Bissau	1,246,000	2,865,800	2,407,272
India	293,000	673,900	566,076
Indonesia	4,109,000	9,450,700	7,938,588
Kampuchea	211,000	485,300	407,652
Kenya	100,000	230,000	193,200
Liberia	30,000	69,000	57,960
Madagascar	528,000	1,214,400	1,020,096
<b>Malaysia</b>	<b>657,000</b>	<b>1,511,100</b>	<b>1,269,324</b>
Mauritania	131,000	301,300	253,092
Mozambique	168,000	386,400	324,576
Myanmar	1,200,000	2,760,000	2,318,400
Nigeria	1,000,000	2,300,000	1,932,000
North America	100,000	230,000	193,200
Philippines	500,000	1,150,000	966,000
Senegal	600,000	1,380,000	1,159,200
Sweden	140,000	322,000	270,480
Sri Lanka	20,000	46,000	38,640
Thailand	1,500,000	3,450,000	2,898,000
Uruguay	37,000	85,100	71,484
Venezuela	2,000,000	4,600,000	3,864,000
Vietnam	2,140,000	4,922,000	4,134,480
<b>Total</b>	<b>24,737,000</b>	<b>56,895,100</b>	<b>47,791,884</b>

4000 Nos 1 X 1 m  
Electrode Modules

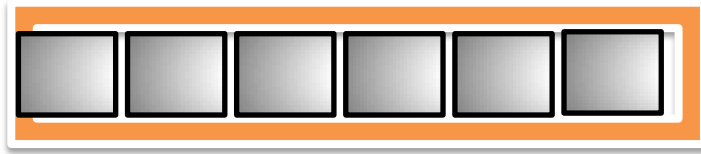
1 Acre Acid Lake

Forest



ELECTRODE MODULES

TOP VIEW



SIDE VIEW

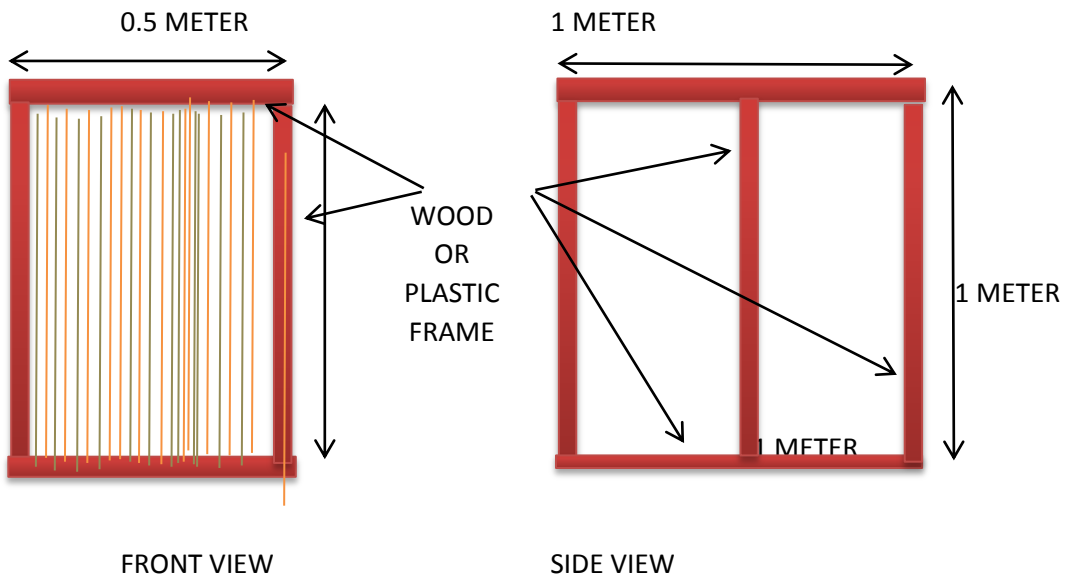
pontoon

acid lake water surface

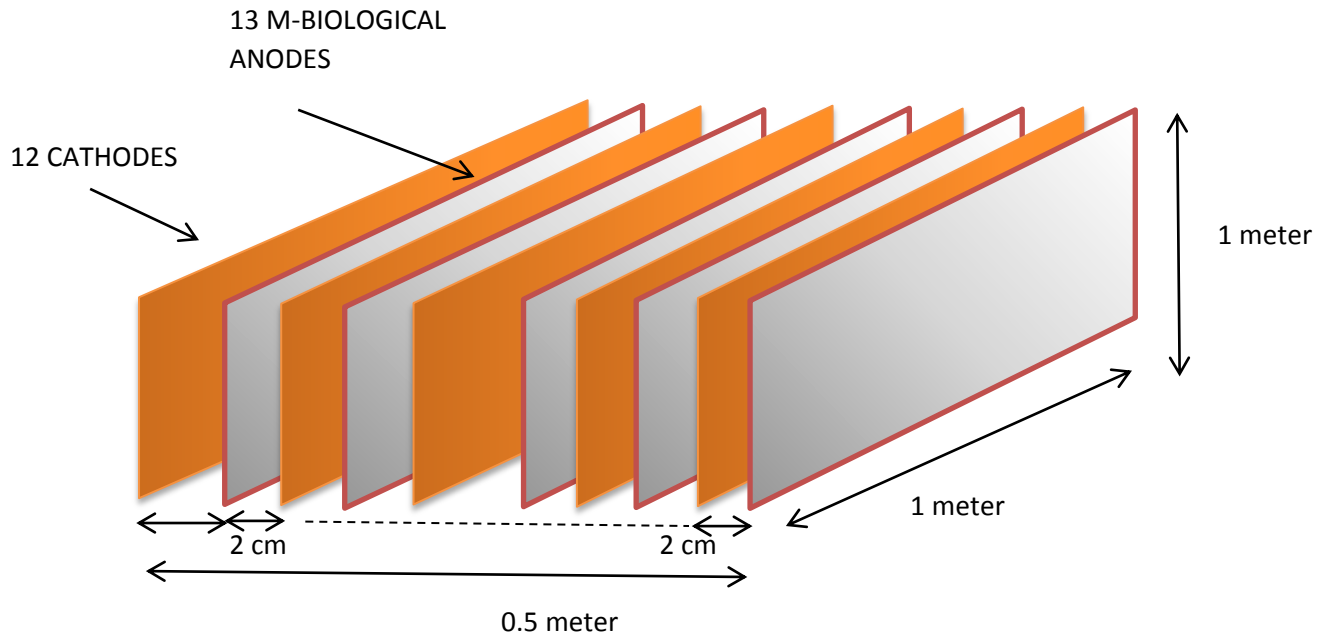


electrode modules

ELECTRODE MODULE DETAIL



1 ELECTRODE MODULE



<u>Development cost</u>	RM/ ft <sup>2</sup>	RM/acre
ponds=	30	1,306,800
electrodes modules=	104	4,530,240
inverters & electricals=	0.23	10,000
instrumentation=	30	1,300,000
land =	0.46	20,000
<u>direct cost=</u>	<u>165</u>	<u>7,167,040</u>
	overheads=	2,150,112
	<u>subtotal=</u>	<u>9,317,152</u>
	Unexpected	750,000
	<u>10% contingencies</u>	<u>931,715</u>
	<u>total grant=</u>	<u><u>10,998,867</u></u>







