

Paper by Professor L.I.Szabó on **Energy By Motion [EBM]** at the  
ÖVR Conference of June 22 and 23, 2007 at Vienna, Austria  
(Österreichische Vereinigung für Raumenergie)

1. Part of this paper repeats the paper presented at the “150 Years of Nikola Tesla Conference in Heidelberg, Germany on November 19, 2006”; As a new development, the 500 kWe small EBM Power Plant for Shopping Centres and other individual users is presented.
2. In order to have acceptably close estimates of the cents/kWh<sub>e</sub> costs at the “bus-bar” of the EBM Power Plants, we must first have to have the Total Installed Costs [“TIC”] of the plant at the geographical location where the plant will operate and the date of commissioning same; The date is needed for manufacturing booking and due to the fairly rapid inflation which is taking place in raw material prices!
3. As a remainder “TIC” includes the entire costs of:
  - (a) The complete EBM Power Plant Units and the standard synchronous generator after commissioning same, and hooking up to the network;
  - (b) The power house and the roads;
  - (c) The land and site clearing;
  - (d) Sub-station costs, if any;
  - (e) All soft costs [permits, legal, duties and taxes, shipping, insurance, to mention the better known ones];

Note: 3(b) and 3(c) can be leased at between 2 % to 5 % of Operating Revenue and can be expensed!
4. We will have time to day to deal only with the mechanical component of the EBM driving section (see (5) below), which is roughly 45% to 55% of the total costs of the EBM driving section as follows:



8. In order to closely estimate the cost of the EBM units under (5) above [and thus the total costs under (7)] to arrive at the bus-bar cost of the electric power produced by a specific EBM Power Plant, we developed mathematically and by measurements equations and graphs as follows (which establish the sellable (extra) electric and heat energies of the EBM Power Plant):

$$\text{Eq. 1: } \Delta P_e [kW_e] = \left\{ 1.2 \left[ \frac{G_{activeiron}}{1,500} \right]^x - \left[ \frac{G_{activeiron+shaft}}{8,500} \right] \times y \right\} \times p$$

Where:

- (a)  $\Delta P_e [kW_e]$  = net/net sellable network quality electric power in kW;
- (b)  $G_{activeiron}$  = Total weight of the laminated electro steel [kg];
- (c)  $G_{activeiron+shaft}$  = Same as (b) plus weight of the shaft [kg];
- (d) X = exponent, depends on the “type” of the EBM unit (one plane “SSX” or two planes “G” type)  $1.539 \leq x \leq 2.0$
- (e)  $p$  = rpm ratio =  $\frac{n}{n_0}$ ;  $n_0 = 750$  rpm;
- (f)  $y$  = Material constant, depends on the type of the material of the laminations [electro steel];
- (g) Note: index “e”, as in  $kW_e$  refers to “electric”, and index “h” as in  $kW_h$  refers to “heat”;

9. Example:

- Let: (a)  $G_{activeiron} = 1,000,000$  kg
- (b)  $G_{activeiron+shaft} = 1,200,000$  kg
- (c)  $X = 1.539$
- (d)  $p = \frac{1,500}{750} = 2$
- (e)  $y = 42$

Eq. 2:

$$\begin{aligned} \text{A} \quad \Delta P_e [kW_e] &= \left\{ 1.2 \left[ \frac{1,000,000}{1,500} \right]^{1.539} - \left[ \frac{1,200,000}{8,500} \right] \times 42 \right\} \times 2 = [26,618 - 5,929] \times 2 \\ &= 53,240 - 11,860 = \underline{41,380 kW_e} \end{aligned}$$

B The components of  $\Delta P_e [kW_e]$  are:

$$\text{(a)} \quad 1.2 \times \left[ \frac{1,000,000}{1,500} \right]^{1.539} \times 2 = 53,240 \text{ kW}$$

= Total performance produced by the EBM driving unit;

$$\text{(b)} \quad \frac{1,200,000}{8,500} \times 42 \times 2 = \underline{11,860 kW_h} = \Delta P_h [kW_e]$$

= Heat energy produced by the EBM unit;

(c) Thus, the electric power component, [also referred to as the shaft power available over and above to produce the heat energy] is

$$= 53,240 - 11,860 = \underline{41,380 kW_e}$$

C (a) Estimated self-use to maintain magnetic flux is, say, 5% x 41,380 kW<sub>e</sub>  
= 2,070 kW<sub>e</sub>

(b) Thus net/net, bus-bar electric component =  $\Delta P_e [BB] = 41,380 - 2,070$   
= 39,310 kW<sub>e</sub>;

D In rounded figure:  $\Delta P_e [BB] = 40,000 kW_e$  at  $p = 1,500 \text{ rpm}$ ;

Note: The design engineer, of course, will calculate precisely the self-use [to maintain the flux] of the electric power generated by the specific EBM unit;

10.(a) In the attached graphs on 3 pages [figs. 1, 2 and 3] Eq. 1 above is depicted in graphical form, for  $n = 750 \text{ rpm}$ ; these can be used for quick estimation of the  $\Delta P$ ,  $\Delta P_h$  and  $\Delta P_e$  components; in these charts the shaft is made of the same laminated electro steel as the lamination of the rotor, and therefore

$$G_{\text{active iron}} = G_{\text{active iron+shaft}} = G [\text{kg}];$$

Note: Here in the charts  $\Delta P$  [ $MW_e$ ] is denoted by  $P_{nne}$  [ $MW_e$ ] and  $\Delta P_e$  [ $MW_e$ ] is given in  $MW_e$ ; similarly the other curves are  $P_{total}$  [ $MW$ ] =  $\Delta P$  [ $MW$ ] and  $P_{therm}$  [ $MW$ ] =  $\Delta P_h$  [ $MW_h$ ] respectively;

- (a) These charts can be used, as a graphical solution for  $\Delta P_e$  [ $kW_e$ ], or  $\Delta P_h$  [ $kW_h$ ] by, for instance, intersecting the desired curve with a horizontal line at the desired “ $\Delta P_e$  [ $MW_e$ ]” or at  $\Delta P_h$  [ $MW_h$ ], and reading off the estimated weight; for example, at  $n = 750$  rpm, at 21  $MW_e$  the  $G_{active\ iron} = 1,000,000$  kg!  
At  $n = 1,500$  rpm, for 1,000,000 kg =  $G_{active\ iron}$ ,  $\Delta P_e$  [ $MW_e$ ] = 42  $MW_e = P_{nne}$  [ $MW$ ];

11. Estimation of the Total Installed Cost [“TIC”] of EBM Power Plants, except land, road(s) and power house, which are leased:

- (a) Using the 40  $MW_e$  EBM plant of the example,  $G_{active\ iron} = 1,000,000$  kg;  
 (b) From manufacturers the “kg” price is 35 USD/kg; therefore:  
 (i) TIC (1) = for mechanical components =  $35 \times 1,000,000$  kg = 35 million USD;  
 (ii) TIC (2) = for all other components [except sub-station, if any, and except land and power house and roads] = [same as TIC (1)] = 35 million USD;  
 (b) Thus  $\sum TIC = TIC (1) + TIC (2) = 35 + 35 = \underline{70\ million\ USD}$ ;

12. The cash flow, for 100% debt financing for ten (10) years is given in Fig. 4., for 95% load factor per year, as follows:

A First year [using 10% royalty and 10% management fee]

- (a)  $OPRV_e =$  Electric Operating Revenue, in rounded figures;  
 $= 40,000\ kW_e \times 365\ days/yr \times 24\ hr/day \times 0.95 \times 0.08\ USD/kW_h$   
 $= 26,630,400\ USD/yr$
- (b)  $OPRV_{green} = 80\% \times OPRV_e = 0.8 \times 26,630,400 = 21,304,320\ USD/yr$  [annual revenue from CO<sub>2</sub> trading]
- (c)  $OPRV_h = 11,860\ kW_h \times 8,760 \times 0.5 \times 0.015\ USD/kW_h = 779,200\ USD/yr$   
 [annual heating/cooling revenue at 50% load factor and at 1.5 USA cent/ $kW_h$  rate]
- (d)  $\sum OPRV =$  Total annual operating revenue =  $OPRV_e + OPRV_{green} + OPRV_h$   
 $= 26,630,400 + 21,304,320 + 779,200 = 48,713,920\ USD/yr$

(e) OMA= Operating, Maintenance and Administration expenses:

	<u>USD/yr</u>
(i) 6 heads at 60 k USD/head/yr	= 360,000,-
(ii) 2 managerial persons at 75 k USD/head/yr	= 150,000,-
(iii) 2 mechanics at 50 k USD/head/yr	= 100,000,-
(iv) 4 office staff at 45 k USD/head/yr	= 180,000,-
(v) Repairs	= 100,000,-
(vi) Insurance	= 500,000,-
(vii) Real taxes	= 250,000,-
(viii) Contingencies and reserve	= 250,000,-

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(ix) Total OMA = 1,890,000,-

(f) DEXP= Depreciation Expense = 7,000,000,-

(g) DSC= Debt Service Charge at 8% per annum = 5,600,000,-

(h) Land, road and powerhouse rent ~2% x  $\sum$  OPRV = 975,000,-

(j) ROYALTY PAYMENT: 10% x  $\sum$  OPRV = 4,871,390,-

(k) MANAGEMENT FEE: 10% x  $\sum$  OPRV = 4,871,390,-

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(l)  $\sum$  OPXP = Total Operating Expenses = 25,207,780,-

(m) Pre-tax profit =  $\sum$  OPRV -  $\sum$  OPXP = 48,713,920 – 25,207,780  
= 23,506,140 USD/yr

(n) ITAX= Corporate Income Tax 20% = 4,701,230 USD/yr

(o) Profit after ITAX = (m) – (n) = 18,804,910 USD/1st.yr

(p) Cash-in-hand, end of yr = 48,713,920 - [1,890,000 + 5,600,000 + 975,000+  
 4,701,230] = 48,713,920 - 13,166,230  
= 35,547,690 /yr 1st.

(r) Number of years to repay borrowed funds of 70 mill. USD

= 70,000,000/35,547,690 = 1.969  $\cong$  2 years;

B First year [using 25% royalty and 25% management fee]

(a) Same as A above, except (j) and (k) in OPXP(A) will increase by a total of 30%, or OPXP(B) will be

$$= 25,207,780 + 30\% \times 48,713,920 = 39,821,960 \text{ /yr 1st.}$$

$$\text{That is: } OPXP(B) = 39,821,960 \text{ USD/1st.yr;}$$

(b) Thus: pretax profit =  $48,713,920 - 39,821,960 = \underline{8,891,960 \text{ USD/1st.yr}}$

(c) ITAX Corporate Income Tax:  $20\% \times 8,891,960 = \underline{1,778,390 \text{ USD/1st.yr}}$

(d) Cash-in-hand after ITAX

$$= 48,713,920 - [1,890,000 + 5,600,000 + 975,000 + 1,778,390]$$

$$= 48,713,920 - 10,243,390 = \underline{38,470,530 \text{ USD/1st.yr}}$$

(e) The possible number of years to repay borrowed funds of 70 mill. USD

$$= 70,000,000 / 38,470,530 = 1.82 \text{ yrs} \cong \underline{1 \text{ year and 10 months;}}$$

C In A and B above the depreciation expense ["DEXP"] has not been used to compute the "possible" number of years to repay the borrowed funds of 70 mill. USD! [We say "possible" number of years to repay the borrowed funds, due to the fact that in the normal course of financing, at the time of borrowing, the term of the borrowing is set, say, for 10yrs, and the annual depreciation expense is available to be put into a sinking fund to accumulate by the end of the 10th year at a set interest rate, to repay the borrowed amount. This is so, unless it is spelled out, that for a set penalty, or without penalty, the borrowed funds may be repaid before the end of the term.]

D Since the cash represented by "DEXP" is available, if pre-agreed, we may add it to cash-in-hand, both in A and B, as follows:

(a) Under A:

$$(f) + (p) = 7,000,000 + 35,547,690 = \underline{42,547,690 \text{ USD/1st.yr}}$$
 and repayment period of capital of 70 mill. USD under this agreement

$$= 70,000,000 / 42,547,690 = \underline{1.645 \text{ yrs} \cong 1 \text{ year, plus 8 months;}}$$

(b) Under B:

$(A)(f) + (B)(d) = 7,000,000 + 38,470,530 = 45,470,530$  USD/1<sup>st</sup> year  
Repayment period of capital of 70 Million USD under this arrangement  
 $= 70,000,000 / 45,470,530 = 1.54$  year

$\cong 1$  year, plus 7 months.

(c) It can be seen, that the repayment period of the borrowed capital of 70 Million hardly changes under (A) and (B)!

E In summary, it can be stated, that the borrowed sum of 70 million USD can be repaid in less than two (2) years!

E This type of 100% debt financing can be arranged by giving a promissory note to the lender, as a collateral!

13. Important note: In the above computations under 12 the “Blue certification” revenue, has not been taken into account for not using any outside supplied “fuel”, such as fossil or nuclear fuels;

This Blue Certification revenue is roughly one-half (1/2) of the sum of

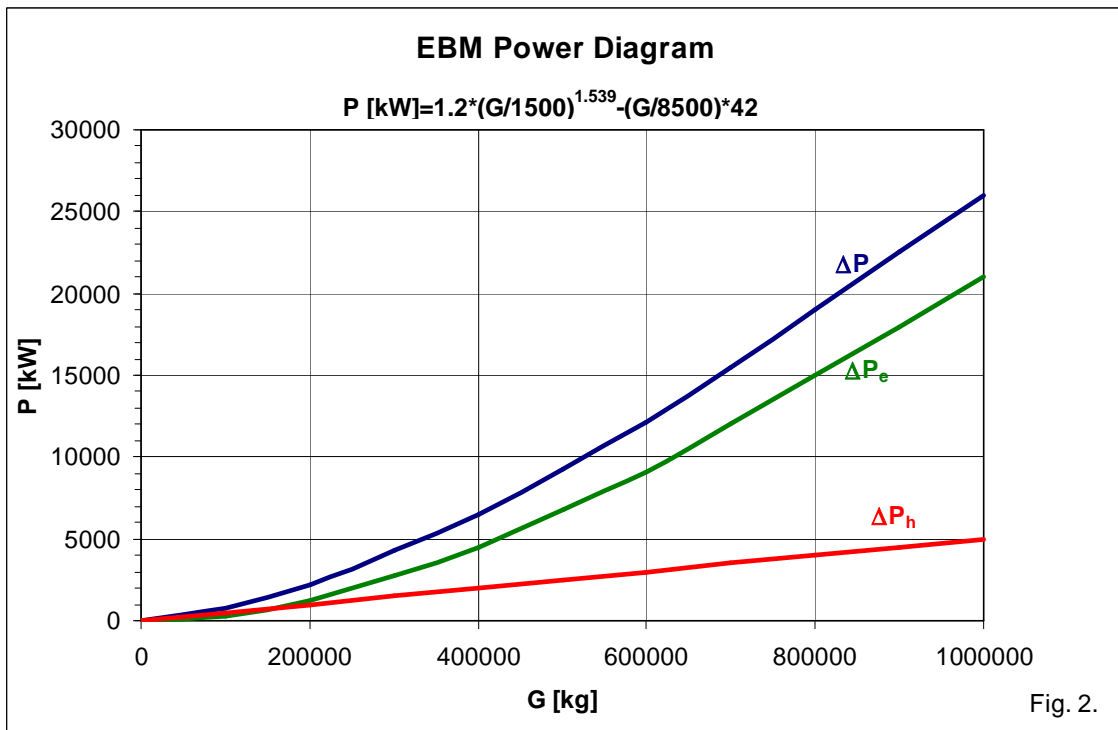
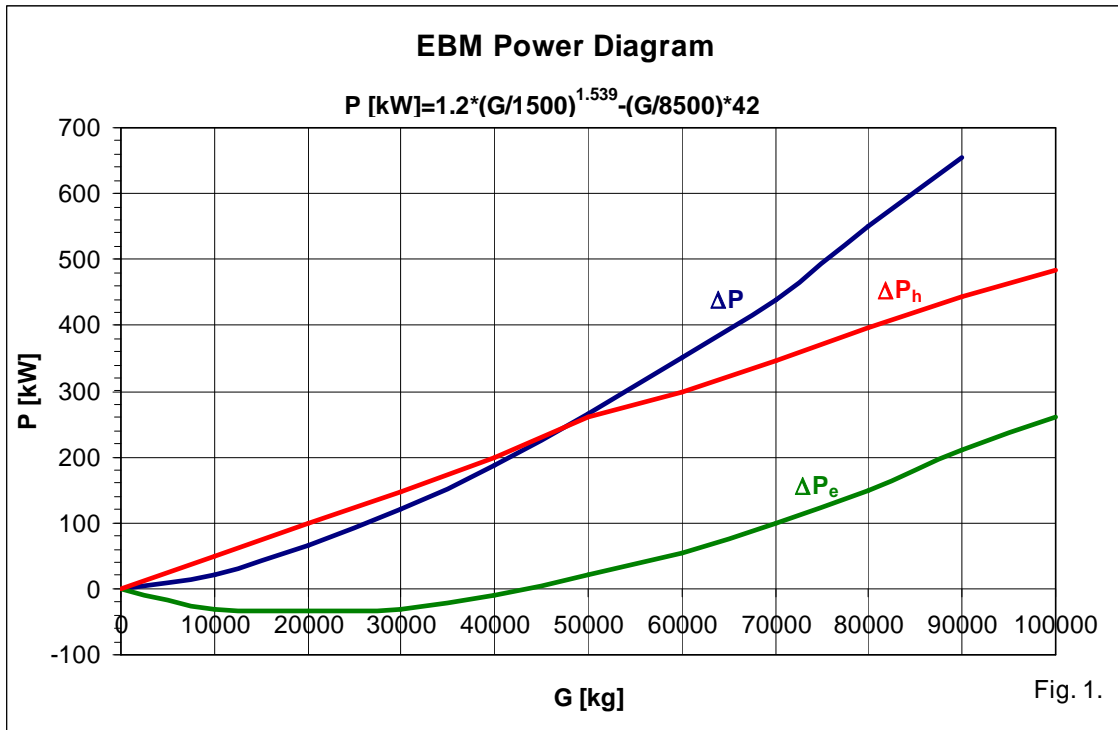
$OPRV_e + OPRV_{green} = 26,630,400 + 21,304,320 = 47,934,720$  USD in (d) of (12) above;

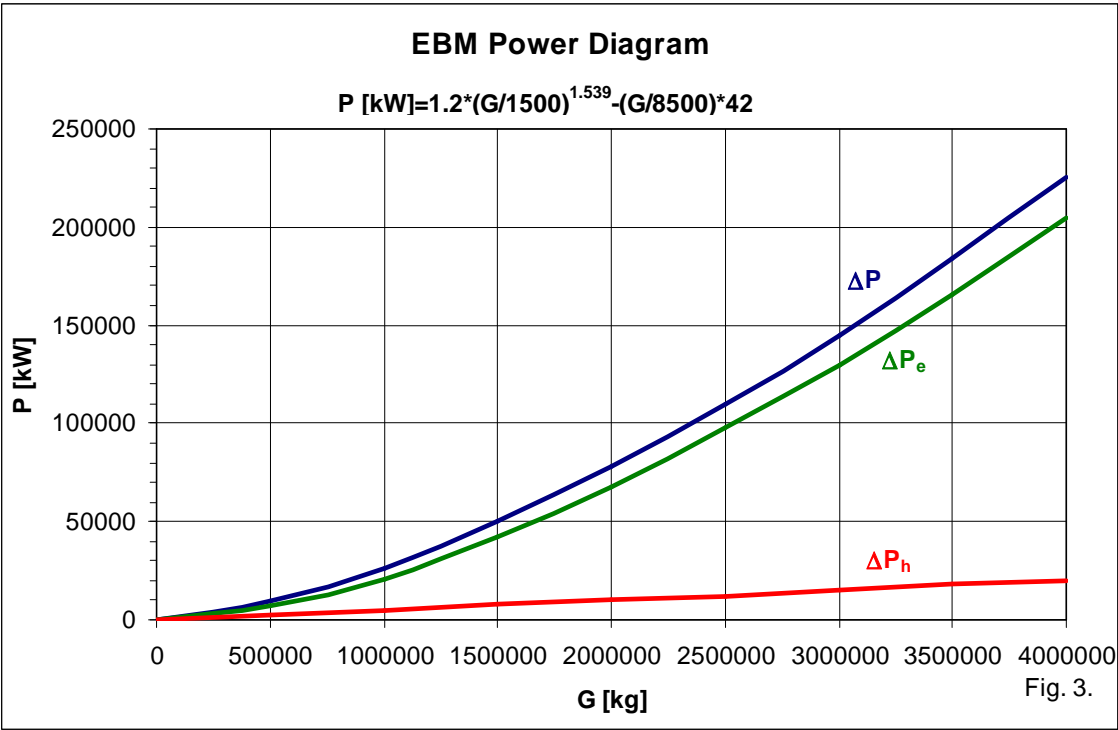
that is:  $\frac{1}{2} * 47,934,720 = 23,967,360$  - USD;

Thus, the repayment period would be further shortened had this “Blue Certificate” revenue been used!

LIS







## 40 MEGAWATT<sub>e</sub> EBM POWER PLANT

### 100 % DEBT FINANCING CASH FLOW PROJECTIONS FOR 10 YEARS OF REVENUE

(all figures in \$ USD)

Total Installed Cost (TIC)	Electric Capacity (kw)	Load Factor for elect. (95%)	Elec. Selling Price 0,08 USD/kWh							Inflating rate	Greenpt./revenue: (USD/kWh)	
\$70,000,000	40,000	0.95	0.08							0.03	0.064	
		1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year	7th Year	8th Year	9th Year	10th Year	TOTALS
1 Operating Revenue	OPRV											
a) electricity (40 MW @ \$0.08 USD/kwh)		\$26,630,400	\$26,630,400	\$26,630,400	\$26,630,400	\$26,630,400	\$26,630,400	\$26,630,400	\$26,630,400	\$26,630,400	\$26,630,400	\$266,304,000
b) heating/cooling energies (11.86 MW \$0.015 USD/kwh LF:50%)		\$779,202	\$779,202	\$779,202	\$779,202	\$779,202	\$1,012,963	\$1,012,963	\$1,012,963	\$1,012,963	\$1,012,963	\$8,960,823
c) Green Point Revenue (80 % of OPRVe)		\$21,304,320	\$21,304,320	\$21,304,320	\$21,304,320	\$21,304,320	\$21,304,320	\$21,304,320	\$21,304,320	\$21,304,320	\$21,304,320	\$191,738,880
d) Total OPRV		\$48,713,922	\$48,713,922	\$48,713,922	\$48,713,922	\$48,713,922	\$48,947,683	\$48,947,683	\$48,947,683	\$48,947,683	\$48,947,683	\$488,308,023
2 Operation, Maintenance & Admin	OMA											
a) 6 operators X \$60,000 USD/person		\$360,000	\$370,800	\$381,924	\$393,382	\$405,183	\$417,339	\$429,859	\$442,755	\$456,037	\$469,718	\$4,126,997
b) 4 office staff X \$45,000 USD/person		\$180,000	\$185,400	\$190,962	\$196,691	\$202,592	\$208,669	\$214,929	\$221,377	\$228,019	\$234,859	\$2,063,498
c) 2 manager X \$75,000 USD/person		\$150,000	\$154,500	\$159,135	\$163,909	\$168,826	\$173,891	\$179,108	\$184,481	\$190,016	\$195,716	\$1,719,582
d) 2 mechanics at 50 k USD/person		\$100,000	\$103,000	\$106,090	\$109,273	\$112,551	\$115,927	\$119,405	\$122,987	\$126,677	\$130,477	\$1,146,388
e) Repairs and maintenance		\$100,000	\$103,000	\$106,090	\$109,273	\$112,551	\$115,927	\$119,405	\$122,987	\$126,677	\$130,477	\$1,146,388
f) Real taxes and insurance		\$750,000	\$772,500	\$795,675	\$819,545	\$844,132	\$869,456	\$895,539	\$922,405	\$950,078	\$978,580	\$8,597,909
g) Contingencies		\$250,000	\$257,500	\$265,225	\$273,182	\$281,377	\$289,819	\$298,513	\$307,468	\$316,693	\$326,193	\$2,865,970
h) Total OMA		\$1,890,000	\$1,946,700	\$2,005,101	\$2,065,254	\$2,127,212	\$2,191,028	\$2,256,759	\$2,324,462	\$2,394,195	\$2,466,021	\$21,666,732
3 Depreciation												
a) over 10 years	DEXP	\$7,000,000	\$7,000,000	\$7,000,000	\$7,000,000	\$7,000,000	\$7,000,000	\$7,000,000	\$7,000,000	\$7,000,000	\$7,000,000	\$70,000,000
4 Debt Service Charge	DSC											
a) 8% of 70,000,000 USD		\$5,600,000	\$5,600,000	\$5,600,000	\$5,600,000	\$5,600,000	\$5,600,000	\$5,600,000	\$5,600,000	\$5,600,000	\$5,600,000	\$56,000,000
b) Land and road and powerhouse rent ~ 2 % x OPRV		\$975,000	\$975,000	\$975,000	\$975,000	\$975,000	\$975,000	\$975,000	\$975,000	\$975,000	\$975,000	\$9,750,000
5 Royalty Payment ( 10 % X OPRV)	RP	\$4,871,392	\$4,871,392	\$4,871,392	\$4,871,392	\$4,871,392	\$4,894,768	\$4,894,768	\$4,894,768	\$4,894,768	\$4,894,768	\$48,830,802
6 Management fee												
10 % X OPRV	MF	\$4,871,392	\$4,871,392	\$4,871,392	\$4,871,392	\$4,871,392	\$4,894,768	\$4,894,768	\$4,894,768	\$4,894,768	\$4,894,768	\$48,830,802
7 Total Deductible Expenses (OMA+DEXP+DSC+RP+MF)	OPXP	\$25,207,784	\$25,264,484	\$25,322,885	\$25,383,038	\$25,444,996	\$25,555,565	\$25,621,295	\$25,688,998	\$25,758,732	\$25,830,558	\$255,078,336
8 Pre-tax Profit (OPRV - OPXP)	PTP	\$23,506,138	\$23,449,438	\$23,391,037	\$23,330,884	\$23,268,926	\$23,392,118	\$23,326,387	\$23,258,684	\$23,188,951	\$23,117,125	\$233,229,687
9 Corporate Income Tax (@ 20 x PTP)	CIT	\$4,701,228	\$4,689,888	\$4,678,207	\$4,666,177	\$4,653,785	\$4,678,424	\$4,665,277	\$4,651,737	\$4,637,790	\$4,623,425	\$46,645,937
<b>10 Cash in Hand After Tax (OPRV-OMA-DSC-CIT)</b>	<b>CAT</b>	<b>\$35,547,694</b>	<b>\$36,477,334</b>	<b>\$36,430,614</b>	<b>\$36,382,491</b>	<b>\$36,332,925</b>	<b>\$36,478,231</b>	<b>\$36,425,646</b>	<b>\$36,371,484</b>	<b>\$36,315,697</b>	<b>\$36,258,236</b>	<b>\$363,020,354</b>
11 Notes: 1) Electrical selling price is 0,08 USD/kWh, Heat energy is 0,015 USD/kWh and after 5th year: 0.0195USD/kWh (RP + MF are paid to owners); 2) Total Installed Cost ("TIC") is 70 Million USD; Power house and land cost of 5 Million USD in TIC is excluded. 3) The green point revenue [1(c)] is available due to the Kyoto Protocol for not emitting green house gases (CO <sub>2</sub> , CO, NO <sub>x</sub> ); 4) Life expectancy of the Power Plant is 40 years. 5) Borrowed funds of 70 Million USD is repaid at the end of the 10th year. (from the sinking fund established in year 1), using 3(a) DEXP; 6) Total borrowed funds by Partner of 35,000,000 USD could be repaid in approx: 35,000,000/35,548,000 = 9845 years (11 months and 15 days); EEL receives dividends thereafter; 7) For simplicity, interest during construction (IDC) has not been used. 8) One-half (1/2) of Total Installed Cost ("TIC") is provided by Electro Erg Ltd. 9) Blue Certificate Revenue (for not using outside fuel, such as fossil or nuclear fuels), is not included in the above.												

## 500 kiloWATT<sub>e</sub> EBM POWER PLANT

### CASH FLOW PROJECTIONS FOR 10 YEARS OF REVENUE TO SHOPPING CENTRES IN WESTERN EUROPE

(all figures in EURO)

Total Installed Cost (TIC), except land and power house € 700,000	Electric Capacity (kw) 500	Load Factor for elect. (95%) 0.95	Elec. Selling Price = 0.05 €/kwh+greenpoint 0,05 €/kWh+blue certificate 0,05 €/kWh 0.05 0,15 €/kWh Total; (This price is increased with inflation rate.)				Inflating rate 0.01	Green point/revenue: (€/kWh) 0.05				
		1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year	7th Year	8th Year	9th Year	10th Year	TOTALS
1 Operating Revenue	OPRV											
a) electricity (500 kW @ 0.05 €/kwh)		€ 208,050	€ 210,131	€ 212,232	€ 214,354	€ 216,498	€ 218,663	€ 220,849	€ 223,058	€ 225,288	€ 227,541	€ 2,176,663
b) heating/cooling energies		€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0
c) Green Point Revenue (500 kW @ 0.05 €/kWh)		€ 208,050	€ 210,131	€ 212,232	€ 214,354	€ 216,498	€ 218,663	€ 220,849	€ 223,058	€ 225,288	€ 227,541	€ 1,968,613
d) Blue certificate (500 kW @ 0.05 €/kWh)		€ 208,050	€ 210,131	€ 212,232	€ 214,354	€ 216,498	€ 218,663	€ 220,849	€ 223,058	€ 225,288	€ 227,541	€ 1,968,613
e) Total OPRV		€ 624,150	€ 630,392	€ 636,695	€ 643,062	€ 649,493	€ 655,988	€ 662,548	€ 669,173	€ 675,865	€ 682,624	€ 6,529,990
2 Operation, Maintenance & Admin	OMA											
a) 3 operators X 26,000 €/person		€ 78,000	€ 78,780	€ 79,568	€ 80,363	€ 81,167	€ 81,979	€ 82,799	€ 83,627	€ 84,463	€ 85,307	€ 816,053
b) 1 administrators X 15,000 €/person		€ 15,000	€ 15,150	€ 15,302	€ 15,455	€ 15,609	€ 15,765	€ 15,923	€ 16,082	€ 16,243	€ 16,405	€ 156,933
c) 1 manager X 40,000 €/person		€ 35,000	€ 35,350	€ 35,704	€ 36,061	€ 36,421	€ 36,785	€ 37,153	€ 37,525	€ 37,900	€ 38,279	€ 366,177
d) Rent of land and power house (150 m <sup>2</sup> , 200 €/m <sup>2</sup> /year)		€ 3,000	€ 3,030	€ 3,060	€ 3,091	€ 3,122	€ 3,153	€ 3,185	€ 3,216	€ 3,249	€ 3,281	€ 31,387
e) Repairs and maintenance		€ 25,000	€ 25,250	€ 25,503	€ 25,758	€ 26,015	€ 26,275	€ 26,538	€ 26,803	€ 27,071	€ 27,342	€ 261,555
f) Real taxes and insurance		€ 15,000	€ 15,150	€ 15,302	€ 15,455	€ 15,609	€ 15,765	€ 15,923	€ 16,082	€ 16,243	€ 16,405	€ 156,933
g) Office expense other than labour		€ 14,000	€ 14,140	€ 14,281	€ 14,424	€ 14,568	€ 14,714	€ 14,861	€ 15,010	€ 15,160	€ 15,312	€ 146,471
h) Contingencies		€ 12,000	€ 12,120	€ 12,241	€ 12,364	€ 12,487	€ 12,612	€ 12,738	€ 12,866	€ 12,994	€ 13,124	€ 125,547
j) Total OMA		€ 197,000	€ 198,970	€ 200,960	€ 202,969	€ 204,999	€ 207,049	€ 209,119	€ 211,211	€ 213,323	€ 215,456	€ 2,061,056
4 Depreciation over 14 years	DEXP	€ 50,000	€ 50,000	€ 50,000	€ 50,000	€ 50,000	€ 50,000	€ 50,000	€ 50,000	€ 50,000	€ 50,000	€ 500,000
5 Debt Service Charge 0%	DSC	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0	€ 0
6 Royalty Payment ( 30 % X OPRV)	RP	€ 187,245	€ 189,117	€ 191,009	€ 192,919	€ 194,848	€ 196,796	€ 198,764	€ 200,778	€ 202,760	€ 204,787	€ 1,958,997
7 Management fee 30 % X OPRV	MF	€ 187,245	€ 189,117	€ 191,009	€ 192,919	€ 194,848	€ 196,796	€ 198,764	€ 200,752	€ 202,760	€ 204,787	€ 1,958,997
8 Total Deductible Expenses (OMA+RENT+DEXP+DSC+RP+MF)	OPXP	€ 624,490	€ 630,235	€ 636,037	€ 641,898	€ 647,817	€ 653,795	€ 659,833	€ 665,931	€ 672,090	€ 678,311	€ 6,510,436
9 Pre-tax Profit (OPRV - OPXP)	PTP	€ 0	€ 157	€ 658	€ 1,165	€ 1,676	€ 2,193	€ 2,715	€ 3,242	€ 3,775	€ 4,312	€ 19,553
10 Corporate Income Tax (@ 18% x PTP)	CIT	€ 0	€ 28	€ 118	€ 210	€ 302	€ 395	€ 489	€ 584	€ 679	€ 776	€ 3,581
<b>11 Cash in Hand After Tax (PTP-CIT+DEXP+MF+RP)</b>	<b>CAT</b>	<b>€ 424,490</b>	<b>€ 428,363</b>	<b>€ 432,557</b>	<b>€ 436,793</b>	<b>€ 441,070</b>	<b>€ 445,391</b>	<b>€ 449,755</b>	<b>€ 454,163</b>	<b>€ 458,614</b>	<b>€ 463,110</b>	<b>€ 4,434,307</b>
12 Notes: 1) The total selling price is 0,15 €/kWh (Electricity + Green + Blue Certificate); The supermarket pays only the 0,05 €/kWh; The rest by Brokers' firms! 2) The green point revenue [1(c)] is available due to the Kyoto Protocol for not emitting green house gases (CO <sub>2</sub> , CO, NO <sub>x</sub> ); Blue certificate revenue is available in certain European countries, if "outside" fuel is not used! 3) Land, power house and other infrastructure is rented, this cost is 200 €/m <sup>2</sup> /year, the rented area is appx. 150 m <sup>2</sup> . 4) Pay-back: if EEL does not get Royalty before partner No.1 is paid back: 700,000/424,150=1,65 years=1 year+ 8 months 5) The Management Fee (MF) Depreciation Expense (DEXP) and Royalty (RP) are rebated to owners of the power plant.												