

# APIX\_MDG\_FREE-ENERGY<sub>20,000</sub> PROJECTS IN KENYA



The current population of Kenya is 40 million. It is estimated that, on the basis of one ton "total organic wastes" per individual, each 20, 000 individuals would generate 20, 000 Tons of these wastes. This is exactly the wastes that are needed per each **APIX\_MDG\_FREE-ENERGY<sub>20,000</sub>** Module. The total number of units that are possible in Kenya would, thus, be 2, 000, generating 2, 250 MW power (24 x 360), which could be made available FREE to the State. The tables below may be studied:

Ser. No.	Factor/ Criteria	Values	Remarks
1	Population	40 million	Estimated value
2	Annual Organic Wastes generated	40 M tons to 60 M T	Include Vegetation wastes, Food wastes, Wood wastes, and Animal/ human wastes
3	APIX_MDG_FREE-ENERGY <sub>20,000</sub>	2, 000 units/ Modules	<b>FREE Power = 2, 250 MW</b>
4	Wastes to be collected	Food wastes = 17 M T; Wood wastes = 7 M T; Vegetation wastes = 8 M T; Animal wastes = 8 M T	This would need appropriate wastes collection arrangements
5	Number of Full time jobs	300, 000 (Direct)	Another 600, 000 Indirect jobs also available
6	Additional businesses generated (@ minimum level)	\$16, 000, 000, 000	Products include biofertilizer + items that would totally offset any need for imported goods, saving billions of dollars in foreign exchange
7	Unit Module investment @ such "mass level" = \$4.5 M	Total investment for 2, 000 units = \$9 Billion	Carbon credits available = @ 8, 500 (= €425, 000, 000)
8	Estimated "total benefits"	1. 2, 250 MW Power 2. Jobs to 900, 000 people 3. Value generation @ 10% = \$1, 911, 040, 000	These are annual values (Carbon Credits not counted; foreign exchange saving also not counted)

**It is noted that any other Power Project would not offer so many number of Jobs to local people**

**The FIRST project (Pilot) would cost an estimated US \$5.3 million**

## POWER + ENGINEERED PRODUCTS POTENTIAL IN KENYA

## MANUFACTURE OF POWER ALONE

If, instead of having a "composite APIX-SEP" module, we were to set up ONLY Power production modules, the following may be noted:

The units would be based on Zero-Waste Zero-Carbon Business Model, recycling almost all of the materials, and relying ONLY on non-fossil materials (Renewable Resources + Industrial wastes).

Ser. No.	Factor/ Criteria	Values	Remarks
1	Total Area	580, 367 sq Km	Land = 569, 140 sq km; water = 11, 227 sq km
2	Vegetation wastes and other plant growth harvests @ 5 T/ ha + available animal/ human wastes	75, 000, 000 T (in 25% of the land)	Include Vegetation wastes, Food wastes, and Animal/ human wastes [Average 12, 500 T wastes per unit]
3	Number of APIX_ENERGY modules	6, 000 MW (24 x 360) ... value = \$5, 184, 000, 000	Power available = 6, 000 MW for supplies + 42 MW for insitu uses unit cost =\$0.1
5	Number of Full time jobs	180, 000 (Direct)	Another 90, 000 Indirect jobs also available
6	Additional businesses generated	\$10, 000, 000, 000	Products include biofertilizer + certain Carbon Sink Engineered products, which would earn export value
7	Unit Module investment @ such "mass level" = \$2.70 M	Total investment for 6, 000 units = \$16.5 Billion	Carbon credits available = @ 6, 600 Credits (= €990, 000, 000)
8	Estimated "total benefits"	1. 6, 000 MW Power 2. Jobs to 270, 000 people 3. Value generation @ 10% = \$1, 518, 400, 000	These are annual values (Carbon Credits not counted; foreign exchange saving also not counted)
<b>POWER FROM THESE UNITS ARE NOT "FREE" but @ \$0.10 per unit</b>			
<b>The FIRST project (Pilot) would cost an estimated US \$3.5 million</b>			

## COMPARATIVE STUDY ON 1500 MW POWER SYSTEMS

Ser No	Criteria	APIX_MDG_FREE-ENERGY <sub>20,000</sub>	APIX_ENERGY MODULE	REMARKS
1	Unit project Cost	\$4.5 Million	\$2.7 Million	These are at "mass level"
2	Number of units	1, 500	1, 500	
3	Power	FREE 1, 687.5 MW	1, 500 MW	Although the initial costs are higher in APIX_MDG_FREE-ENERGY Module, the overall benefits are far greater
4	Power Cost	FREE	@ \$0.10 per unit	
5	Additional Products/ businesses	\$12 Billion	\$2.5 Billion	
7	Total jobs (all)	675, 000	67, 500	
8	Net benefits to Gvt	\$1, 433, 280, 000	\$379, 600, 000	
9	Total Investments	\$6.75 Billion	\$4.050 Billion	