# USEPA Regional 9 Pacific Island Office

Annual Pacific Island Environmental Conference In Sapian (June 22-25, 2004)

The Purpose of this session is to continue discussion of the 2003 Pacific Island Legislature and **Executive Resolutions to promote** a regional approach to recycling in the pacific.

#### Factors to consider in doing Recycling Business in Micronesia

- 1. Shipping Cost from Micronesia to Far East Buyers.
- 2. Cargo quantity and type of vessels to use.
- 3. Type of recycle materials for processing
- 4. Segregation & documentation.
- 5. Handling & Stockpiling.
- 6. Equipment and machinery.
- 7. Marketing & Sale.
- 8. Assistance from Government & Business entity's.
- 9. Implementation of Recycling Fees.
- 10. Sample of Financial analysis.
- 11. Conclusion & Suggestion.

#### **Cost of Shipping**

Far East Micronesia Line Established Cntr Recycling Rates as of May 2004

Guam to HK/Mnl/Tw/Busan;-

<u>Cntr Type</u>	<u>From</u>	To	<u>Ocean Fr</u>	Wfg	<u>Hdlg</u>
20'	Yap & Palau	Far East	1,500	All in	All in
40"	Yap & Palau	Far East	1,800	All in	All in

Mariana Express Line Established Cntr Recycling Rates as of May 2004

Guam to HK/Tai and China :-

<u>Cntr Type</u>	<u>From</u>	<u>To</u>	<u>Ocean Fr</u>	Wfg	<u>Hdlg</u>
20'	Micronesia	Far East	1,500	All in	All in
40"	Micronesia	Far East	1,800	All in	All in

#### Above 2 Carriers do not carry break bulk cargo, only containerized cargo Cy/Cy.

Kyowa Line Offer Break Bulk Cargo From Micronesia to Far Eastern Port :-<u>HK/Tai/Japan/Korea. However, Bulk shipment is based on case by case basis,</u> <u>subject to cargo space availability & ocean freight rate to be negotiate, depend on</u> <u>loading & discharging rate per day.</u>

Container Rate :-<br/>Cntr TypeFromToOcean FrWfgHdlg20'MicronesiaFar East1,500All inAff in

#### Cargo Quantity & Type of Vessel to Use

- Due to the cargo volume in the Micronesia Islands being approximately less than 500 metric ton per month. The carrier like Kyowa Line, have the break bulk capacity, but are unwilling to accept the small cargo tonnage, as it will jeopardize their empty containers returning to the loading port. If the export tonnage is over 3000 tons per shipment per port of call. Vessels chartering is feasible, depending on the charter rate.
- However, most suitable method of shipment, is to use container liner vessels.
- Such as FML, MEL and or Kyowa Line. Because their vessels calling regularly, either on a month to month or week by week basis. Shipper can depend of their own production merit with out big difficulty

## Loading Scrap by Break Bulk Vessel



# Loading scrap by Container



Collection of recycle materials for processing

Marketable Materials are as follow:-

- Iron & Steel material:Rebar, beam, plate, channel, angle, junk car etc.
- Aluminum materials: Cans, window frame, cable, engine block etc.
- Copper and brass materials: Electric cable, telephone wire, hot water pipe, copper plate, radiator, condenser, water meter, pump etc.
- Lead materials : Lead pipe & cable, battery etc.
- Paper materials: Newspaper, computer card, cartoon box, packing material etc.
- Computer: Motherboard, computer card, computer cable, monitor, keyboard etc.
- Plastic: Plastic bottle, computer casing, printer, keyboard tray etc.

#### Segregation & documentation recycle materials

- It is very important to segregate products as per buyer's instruction. The price of each type of recycle material varies largely. Normally, buyers do not want material to be mixed in one container.
- Shipping documents and reports must be carefully prepared, as arriving cargo will encounter large penalties by discharging port's customs. Full co-operation and understanding is the assurance of future continuous business, between seller and buyer.
- 1. No impurity or foreign material mixed with the product.
- 2. Products combined shipments must be weight, pack and label.
- 3. Bill of lading, invoice and package list must specify clearly .
- 4. Cargo survey report regarding weight and type of commodity in loading port normally required by buyer. If there is no surveyor available in the Micronesia Island, prior arrangement must be made.

Loading 3500 M/T of Break Bulk scrap on the Vessel. Using Ship's derricks, Shore side support with Tractor trailer. Hauling two 10 ton bucks with a 20 ton F/L moving the buckets from truck to ship side. The Loading rate about 750 M/T per day





# Processing and segregation of Iron & Steel by cutting into sizes that can be loaded in the container or vessel.



#### Processing and segregation of Iron & Steel materials, baled it in to bundle size of 3'x4'X4'



# Processing and segregation of light Iron & Steel baled it in to bundle size of 1'X1'x2'



# Processing and segregation of Aluminum cans and baled it in to bundle size of 2'X2'x3' block.



#### Segregation of copper cable, radiator, mixed aluminum & battery



### Handling & Stockpiling of Material

- Processing of the recycling material must comply with the international scrap definition. Selling price is based on how the material is being prepared. Once the material is processed, it should be stockpiled appropriately.
- Buyer frequently will inspect materials prior to shipment. Until working relation is built, inspection will apply. If materials are not stockpiled properly and materials become mixed together, buyer will refuse shipment or postpone payment.
- From the stockpile, exporter/operator can determine the quantity of sale and what type of vessel to engage. Then enter into sales agreement with buyer.
- The followings are materials being processed and make ready for shipment.:-

#### Equipment and Machinery. In order to produce recycle product that is marketable. The proper Facility, machinery and equipment is detrimental for a successful operation.

Followings requirement are:-

- Land : 10,000 Sqft Meter Collection Area 5,000 Sqm; Stockpile & Loading area 2,000 Sqm; 3,000 Sqm for office work shop etc.
- **Equipment** : Cutting Machine, cable separating machine; Oxygen & acct. set with hose, touch & tips; floor scale
- Machineries : Baling machine for aluminum & iron and steel; 5 tons fork lift; excavator with clam shell and finger; 10 ton dump truck and 3 ton flat bed.
- Followings pictures of the equipment & machineries for illustration purpose.

#### Cutting machine; cable separating machine; Ox & Acct Set









# 5 Ton Fork Lift



#### Heavy Duty Baling Machine



#### **Iron & Steel Baling Machine From China**



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# **Aluminum Baling Machine**



#### **Battery & Plastic Processing Machine From China**



# **Excavator with Clam Shell**



#### **Taiwan Manufacturer of Heavy Machinery for scrap**



#### Manufacturer of Scrap Handling Equipment in States



**KOMATSU WA470-5** 2.100 hours, bucket, new tires 2002

with Genesis quick connect change your tools in 10 seconds

**GENESIS GMS1000** mobile monster scrab shere

...100 more material handlers from 25.000 - 150.000 Euro

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Materialumschlagmaschinen material handling machines

construction machinery

FUCHS MHL330 1997, 2780 hours



5 units, 15 m reach !!! 1993 - 2003 all options





**GENESIS GMS300** mobile scrab shere new + used



### Marketing & Sale

Internet Website is a good place to learn about the trade, a lot of information is available for your reference.

Contact a broker, who can the connections with buyers in China, Korea, Japan, Hong Kong and Taiwan etc.

Good buyer: China is the biggest buyer in the Far East, they buy all kind of recyclable materials. Because their labor is cheap, they can segregate and still able to sell for profit. Japan only buy cleaned and well processed materials. Korea is kind of in the middle between China and Japan. They buy semi-segregated materials. Hong Kong basically working as broker or middleman. Sometimes, they will re-process the material and sell for a higher price. Taiwan is a good market for recycling materials, but they also very particular about the quality of the product they import.

The price levels, please reference to the following sample spread sheet, indicated in the Income & Expense projection on Guam.

The following are web sites you can contact and browse through.

#### Web Site 1

- <u>Automotive cores and scrap buyer Scrap and Cores.com pays cash</u> Automotive scrap and automotive cores buyer Scrap and Cores.com pays cash for automotive scrap, industrial scrap and automotive cores. ... Automotive cores and scrap metal buyer. Scrap and Cores.com has been in business for over 15. www.scrapandcores.com/automotive\_cores.htm
- <u>Automotive Scrap</u>, <u>Diesel Engine Cores</u>, <u>Gas Engine Cores</u> <u>Buyer</u> Automotive scrap and automotive cores **buyer Scrap** and Cores.com pays cash for automotive scrap, automotive cores, diesel engine cores, gas engine cores, transmission cores and differential cores....

www.scrapandcores.com

- Industrial Plastic Scrap Buyer Midwest Plastics Recycler Industrial Plastic Scrap Buyer and Plastics Recycler. Plastics Identification. Recycling industrial plastic waste: polyethelene, polypropolene, pvc, polystyrene, poly vinyl chloride, pvc, scrapplasticsrecycler.ersg.us
- Scrap metal buyer, dealer high temperature alloy scrap Globe Metal Globe Metal is a scrap metal dealer and buyer of industrial metals such as high temperature alloy scraps. ... We are a scrap metal buyer and dealer, specializing in the processing of all industrially generated metals, high temperature alloy scrap and carbide as well as grinding ...

www.globemetal.com/overview.php

- <u>A+ Scrap Buyer in Global Recycling Network --- Industry Directory</u> A+ Scrap Buyer is registered in the Industry Directory at . ... Industry Directory. A+ Scrap Buyer. Buy Scrap Aluminum. A+ Scrap Buyer. Fresh Meadows New York ... grn.com/trade/aa658979.html
- <u>11-97 New Steel</u>: Scrap: How to improve scrap buying: Define specs better, communicate more ... Quality is the hottest issue in today's scrap market. Unlike a few years ago, www.newsteel.com/features/NS9711f6.htm
- <u>Scrap Page</u>... OUR SCRAP BUYER IS: TAMMY RINKEMA ... Assistant to Scrap Buyer. MARI JO KINSEY ... www.jupiteraluminum.com/SCRAP.htm

#### Scrap Web site 2

 <u>MetalWorld -- Scrap Metal Recycling Section</u> is a business-to-business trading community hub for raw material commodity exchanges in Scrap Metal Recycling and other similar kinds of materials. www.metalworld.com/a/0100.html

<u>Scrap Magazine - People</u> ... as well as new and ongoing projects for the company in scrap optimization, scrap handling, and scrap processing ... was a copper and brass scrap buyer for ingotmaker Colonial Metals Co ... www.scrap.org/people.htm

- Want Ad: BUYER OF SCRAP COPPER WIRE AND ALUMINUM WIRE! Community. My offer. Search. Help / FAQ. BUYER OF SCRAP COPPER WIRE AND ALUMINUM WIRE! Want Ads > Miscellaneous > Other > Want Ad # 14947. Looking for: WILL BUY YOUR SCRAP COPPER AND SCRAP ALUMINUM WIRE, WILL NEGOTIATE SHIPPING, CONTACT US NOW! www.ioffer.com/viewWantAd.do?wantedID=14947
- <u>Non~Ferrous Scrap Metal Recycling -- Scrap Aluminum Recycling Category</u> Recycle.Net is a business-to-business trading community hub providing Global Access to Recycling Markets in Scrap Aluminum Recycling and other similar kinds of materials. ... A Recycling Center. A+ Scrap Buyer. A-1 Hauling Inc. A-1 Recycling (CA) A-1 Scrap. A-Ten-C, Inc ... Burnaby,BC) ABC Salvage and Scrap Metal. ABC Traders Ltd ... www.recycle.net/Metal-N/Aluminum
- <u>Global Recycling Network -- Scrap Metal Recycling Section</u> is a business-to-business trading community hub for raw material commodity exchanges in Scrap Metal Recycling and other similar kinds of materials.

#### Assistance from Government & Business Entity (Page 1)

Recycling in Micronesia requires Government and private businesses participation and financial assistance.

The fact is that most of the Micronesian islands are thousands of miles away from Guam. Therefore the shipping rate is more then double in comparison to Guam.

Local Government should allot free land usage for construction of a recycling facility and also purchase of all major essential machineries and equipments for recycling all the material.

#### Assistance from Government & Business Entity(Page 2)

Private enterprises, to negotiate a semi-donation shipping rate with carrier which serve the islands in Micronesia. Oil companies such as Mobil Oil Company and Air Lines such as Continental, should participate and help the recycling project to move ahead.

As we believe that "ALL LIVING THINGS OF THE EARTH ARE ONE" recycling is the major objective.

A recycling fee for all kind of materials, should be implemented. The funds received should be put forward for financing the continuation of the recycling projects.

# **Recycling Fees**

#### <u>The following is the recycling fees presently</u> being implemented on Guam

•	Standard Price: Including pick up Automobile	e \$150
•	Appliance w/o Freon	\$20
•	Appliance w/ Freon	\$28-\$32
•	Passenger Tires	\$5.50
•	Commercial Truck Tires	\$10.50-\$20.50
•	Loose Metals ( Pick-up truck load)	\$50
•	Loose Metal dump truck load per cubic yard	\$5.00
•	Batteries	\$10
•	Wood Pallets	\$2

	A S	ample of a Guam S	Scrap Operation		
	<u> </u>	ncome and Expen	se Projection		
		Buying	Metric Ton	Monthly	
	In Lbs	Per lbs	Per month	Income & Expense	
Name of Material	2204				
Sales :		Price/MT			
Aluminium Cans		\$1,350.00	35.00	47,250	
Mixed Aluminium		\$1,350.00	25.00	33,750	
Copper		\$1,750.00	25.50	44,625	
Computer Scrap		\$125.00	24.00	3,000	
HMS - Iron & Steel		\$85.00	500.00	42,500	
Bundle Scrap Iron & Steel		\$88.00	1000.00	88,000	
Battery		\$0.00	2.00	0	
Total Sales				\$259,125	
Recycling Fee:					
Aluminium Cans		\$0.00	37.00	0	
Mixed Aluminium	Per M/T	\$0.00	27.50	0	
Copper	Per load	\$50.00	2.00	50	
Computer Scrap	Per Load	\$50.00	3.00	50	
HMS - Iron & Steel	Per Load	\$150.00	25.00	3,750	
Bundle Scrap Iron & Steel	None	\$0.00	0.00	0	
Battery	Per Piece	\$15.00	160.00	2,400	
Total Collected Fees:				\$6,250	
Gross Monthly Revenue					\$265,375

Cost of Goods Sold:					
Aluminium Cans		\$0.30	37.00	24,464	
Mixed Aluminium		\$0.30	27.50	18,183	
Copper		\$0.40	26.00	22,922	
Computer Scrap		\$0.05	25.00	3,000	
HMS - Iron & Steel		\$45.00	650.00	29,250	
Bundle Scrap Iron & Steel		\$48.00	1000.00	48,000	
Battery		\$0.00	120.00	0	
Total Cost of Goods Sold					\$145,819
Gross Profit					\$119,556
Operating Expenses:					
Salaries and wages				1,500	
Manager	1			2,750	
Field worker	5			5,100	
Machanic	1			1,750	
Equipment Operator	2			2,380	
FICA Tax	7.65%			1,031	
Scrap Yard Rental				750	
Management Fee				1,750	
Utiltities				375	
Repairs and maintenance				575	
Insurance				1,750	
Travel				1,000	
Telephone				250	
Postage				50	
Office supplies				135	
Advertising				350	
Freight Guam to Far Eastern	Per Container	\$650.00	81	52,374	
Guam Inland Trucking	Around Trip	\$150.00	79	11,824	
GRT	4%			10,615	
Total Expenses per month:					\$96,309
Profit Before Tax per month:					\$23,247

Conclusion & Suggestion P-1

The set backs of recycling in Micronesia are:-

(1)High Cost of Shipping. Almost 200% higher than Guam.

(2)The lack of experience in handling & processing of the recycling materials.

(3) The high cost to purchase the necessary equipments and machineries.

(4) The lack of contacts and experiences in marketing and the sale of materials.

#### Conclusion & Suggestion P-2

#### To over come the above we suggest:-

- (1) To discuss with existing liner services, such as Kyowa Line, Far East Micronesia Line and Mariana Express Line to give a special recycling rates to the Micronesia Inlanders.
- (2) To solicit a recycling Company who has the knowledge and experience to handle processing and marketing of the recycling material in Micronesia. The qualification must meet the following Criteria :-

a. 5 year working experience in processing ferrous & non-ferrous materials.

b. Owned and managing recycling equipments and machineries no less then two years.

c. Proof of exporting recycling material to other country no less than 50,000 M/T per year.

d. Have chartering vessel experience for at least 3 to 5 voyage a year.

e. Evidence to show contract of sale no less than 10,000 M/T per year.

(3) To discuss with the Micronesian government to implement a recycling fee in their island, so that money can be generated to help finance the purchasing of the equipment and machineries.