

### 3 Markets Assessment

This section provides detailed information on Rock-Tenn's steam demands and general information on electrical power purchases.

#### 3.1 Rock-Tenn

##### 3.1.1 Steam Demands

Rock-Tenn provided data on their historical steam demands. They utilize steam for their manufacturing process and for heating. Table 3-1 represents the monthly average steam demand by Rock-Tenn for the years 2002 and 2003. This was the most complete data available from Rock-Tenn and, within the limits of operations and small adjustments, continues to be representative of steam demands. This was verified during follow-up discussions by Foth & Van Dyke with Rock-Tenn representatives.

Table 3-1 Rock-Tenn Average Monthly Steam Demands

<b>Month</b>	<b>Rock-Tenn Average Steam Usage Pounds Per Hour (PPH)</b>
January	263,497
February	263,088
March	259,327
April	229,218
May	212,708
June	183,551
July	195,691
August	189,689
September	202,155
October	220,565
November	251,614
December	240,829
<b>Annual Average</b>	<b>225,994</b>

The December average reflects seasonal Rock-Tenn plant outages over Christmas. During December, the steam usage averaged 249,637 pounds per hour (PPH) adjusting for the outage time.

While the average steam consumption provides a value basis for economic calculations, the Biomass/RDF boiler/steam turbine generation plant needs to be sized to handle peak loads of up to 325,000 PPH. Table 3-2 provides steam consumption and demand peaks as a percentage of annual operating time. Papermill steam demand varies significantly depending on the product and time of year. A base boiler load insufficient to handle peak demands would require Rock-Tenn to fire their boilers on a continuous basis for an extensive amount of time during the year. This reduces the basic functionality of a proposed biomass boiler facility. Rock-Tenn's current steam supply handles all peak loads. This replacement system is being considered to do the same.

Table 3-2 Rock-Tenn Steam Peaking Demand  
(Based on Actual 2002 & 2003 Steam Usage)

<b>Steam Usage (PPH)</b>	<b>Hours/Year</b>	<b>% Hours/Year</b>
No steam demand	42	0.48
Under 75,000	47	0.54
75,000 - 225,000	392	4.47
Over @225,000	4,301	49.10
Over @250,000	2,808	32.05
Over @275,000	1,051	12.00
Over @300,000	119	1.36
Average 225,994	Total 8,760	100

### 3.1.2 Steam Value

Table 3-3 develops an estimated cost for Rock-Tenn to produce their steam using their internal production capability. The estimated cost is based upon current fuel costs and boiler efficiencies provided by Rock-Tenn and escalating the average other 1994 industrial steam costs components by applicable rate sheets and ENR cost index changes.

Table 3-3 Estimated Rock-Tenn Internal Steam Cost

<b>Component</b>	<b>Cost per 1,000 lbs Steam</b>
Fuel	\$ 5.91
Water	\$ 0.02
Electricity	\$ 0.17
Operating Supplies	\$ 0.09
Labor (S.T.)	\$ 0.48
Labor (O.T.)	\$ 0.11
Maintenance Labor	\$ 0.54
Maintenance Materials	\$ 0.22

Component	Cost per 1,000 lbs Steam	
Contracted Maintenance	\$	0.06
Other Expense	\$	0.01
Overhead	\$	0.33
Depreciation	\$	0.94
Total	\$	8.89

The steam cost fuel component was estimated from the following data:

<u>Btu/Gal</u>	<u>Cost/Gal</u>	<u>Boiler Efficiency</u>	<u>Condensate Return (%)</u>	<u>Btu / # Steam</u>	<u>Btu / # Condensate Return</u>
155,000	\$ 0.97	0.80	0.83	1,350.2	203.3

The components and average 1994 cost for 1,000 lbs. of industry produced steam are as shown in Table 3-4.

Table 3-4 1994 Costs for 1,000 lbs of Industry Produced Steam

Component	1994 Industrial Steam Cost	
Fuel	\$	2.35
Water	\$	0.02
Electricity	\$	0.17
Operating Supplies	\$	0.06
Labor (S.T.)	\$	0.32
Labor (O.T.)	\$	0.07
Maintenance Labor	\$	0.36
Maintenance Materials	\$	0.15
Contracted Maintenance	\$	0.04
Other Expense	\$	0.01
Overhead	\$	0.22
Depreciation	\$	0.94
Total	\$	4.71

Applicable ENR index changes from February 1994 to April 2006 follow:

ENR Cost Index - 4/06: 7,954

ENR Cost Index - 2/94: 5,500

ENR Skilled Labor Index 3/06: 7,209

ENR Skilled Labor Index 2/94: 4,764

Thus, the current projected cost for Rock-Tenn to produce their steam using their existing labor with their existing boilers using # 6 fuel oil is \$8.89 per mlb of steam. Rock-Tenn officials indicated this projected cost is very close to their own calculations.

### **3.1.3 Internal Electrical Consumption**

Biomass/RDF boiler plant internal power consumption will vary between 4,500 and 4,900 KW/hr based on operations as driven by the availability of steam not taken by Rock-Tenn.

## **3.2 Electrical Power Purchases**

Biomass/RDF boiler plant's produced power is anticipated to be sold to Xcel Energy (Xcel). An offset to Rock-Tenn's power purchases may be negotiable. The average power production of 7,258 KW/hr available for sale is less than Rock-Tenn's demand of 12,488 KW. It is anticipated that the only offset in costs will be for energy charges and not demand charges. From Xcel's position, they will still need to maintain and plan for Rock-Tenn's full demand since there will be times Rock-Tenn will be operating and the Biomass/RDF facility will be down. Conversely, power needs to be sold to Xcel since there will be times when the Biomass/RDF power output will exceed Rock-Tenn's demand.

Foth & Van Dyke contacted representatives of Xcel Energy regarding their potential interest in purchasing power from a Biomass/RDF Facility. They expressed very positive interest in working with Rock-Tenn as a proposal is developed. For preliminary planning purposes, Foth & Van Dyke developed power sales projections as part of the Rock-Tenn Biomass/RDF Facility described in Section 6 of this report.