Evaluating Recycling Commodity Prices for Project Feasibility

SUBMITTED BY: Marc J. Rogoff, Ph.D. and Bruce J. Clark, P.E. DEE

A number of months ago our firm was contracted with financial and development firms to evaluate the feasibility of a large recycling project. SCS Engineers (SCS) conducted an extensive engineering and economic feasibility study of the project. We thought it would be interesting to readers who are in the recycling industry to see the kind of commodity pricing issues that were discussed in our analysis.

Commodity Price Value Forecasts

Being able to manage the ever-fluctuating changes in market prices can either produce success or break the community recycling program. Most recycling industry observers have opined that prices for most, if not all, recycled materials tend to follow expansions and contractions in the overall world or national economy such as major economic recessions and market crashes.

There are, however, specific trends in particular industries that move prices for different recycled materials in entirely opposite directions. One can argue that the long-term 30-year average of curbside recyclables market has moved up substantially from the average levels during the 1991-1993 Recession to the next economic downturn in the 2001-2003 and the next downturn in the Great Recession in 2009.

Consequently, it is important to develop strategies in negotiating long-term agreements with brokers or the overall market purchaser that feature price floors or other revenue/risk sharing agreements. It is also important to mitigate these peaks and valleys in these market prices by developing local manufacturing demand for recycled feedstocks. Most recycling industry observers have opined that prices for most, if not all, recycled materials tend to follow expansions and contractions in the overall world or national economy.

Some in the industry opine that historic pricing is of little value in forecasting future pricing. We disagree. Today, recycling and energy facilities will have a debt service of at least 20 years. A lot can happen with recycling markets and prices in that time frame, if the past is any indicator of what the future could be. One can opine that the forces that move the recycling markets up and down have not really changed that much since 20 years ago. The U.S. is starting to internally recycle more plastic with the new plastics to energy plants and engineered fuels coming into the market made primarily of low grade mixed paper or plastic. However, their impact is currently small.

Market price data are a major component in generating the revenues derived from product sales at the proposed plant. While the market prices in the Pro Forma Model appeared to be reasonable, we recommended that the Model include more up-to-date pricing data, which are easily available from RecyclingMarkets.Net, one of most reputable recycling market data sources in the industry. This is an online subscription-based service, which allows a user to search through its online database for current spot prices, as well as historical prices going back to well over a decade.

Market Trends

The U.S. is heavily dependent on the Chinese market for absorbing a major percentage of recyclable paper and plastics we generate. So, potential changes to that market initiated by the Chinese is a cause for concern and for assessing contingencies. Officials for the Scrap Recycling Industries, China Scrap Plastics Association, and Bureau of International Recycling all indicated that China may be rolling out a new policy for expanding the list of banned materials and tightening the quality standards of recyclables coming into their country.

While the actual effect on the U.S. recycling market is not clear yet, in order to have a sense of what a “lean” analysis could represent, we recommended additional pro-forma analysis for our project applying different tests, including partial or total temporary loss of revenue from some recyclables, and lower temporary pricing of some or all recyclables.

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Waste Composition

The relative proportion of various materials in the waste stream has changed in the past 25 years due to:

- *Changes in Packaging*: Plastic resins have been replacing the use of glass bottles/jars, steel and aluminum cans, and paperboard for beverages and food.

- I*ncreased Recycling*: Recycling programs have redirected paper product, glass, metals, and plastic containers to markets instead of landfill disposal or WTE disposal.

- I*ncreased Use of Technology*: More reliance on electronic media for news and information. As a result, fewer newspapers, magazines, and brochures are generated; and those that are generated are thinner. Also, televisions, video recorders, cameras, calculators and others are being replaced by hand held smart phones.

As a result, heavy materials such as newspapers, steel cans, and glass containers represent less of disposed waste in favor of lighter plastic packaging. The resulting proportion of food scraps in disposed waste has doubled in the past twenty years, from an average of 10 to 12 percent of disposed waste to an average of between 20 and 25 percent of disposed waste. At the same time, plastics have increased their relative proportion of disposed waste.

It should also be noted that the waste stream of individual communities can vary substantially from the national average. Since waste composition studies assess the relative proportion of various materials in disposed waste, the presence of heavier materials can reduce the proportion of food scraps. For example, communities without yard waste bans will present a lower proportion of food scraps in their disposed waste due to the heavy presence of yard debris. Besides yard waste bans, waste composition can also be affected by climate, tourism, socioeconomic factors, and commercial activity of the region.

Conclusions

The data on price variability and waste composition were used to prepare several scenarios in Pro Forma modeling to predict the “downside” of market shifts in Project performance. In our experience, this provides stakeholders with good ideas of potential market risks and the potential sharing of anticipated revenues with high, medium, and low end pricing of recyclables.

Marc J. Rogoff is a Project Director with SCS Engineers and can be reached at (813) 804-5547 or mrogoff@scsengineers.com. Bruce Clark is a Project Director with SCS Engineers and can be reached at (813) 804-2130 or bclark@scsengineers.com