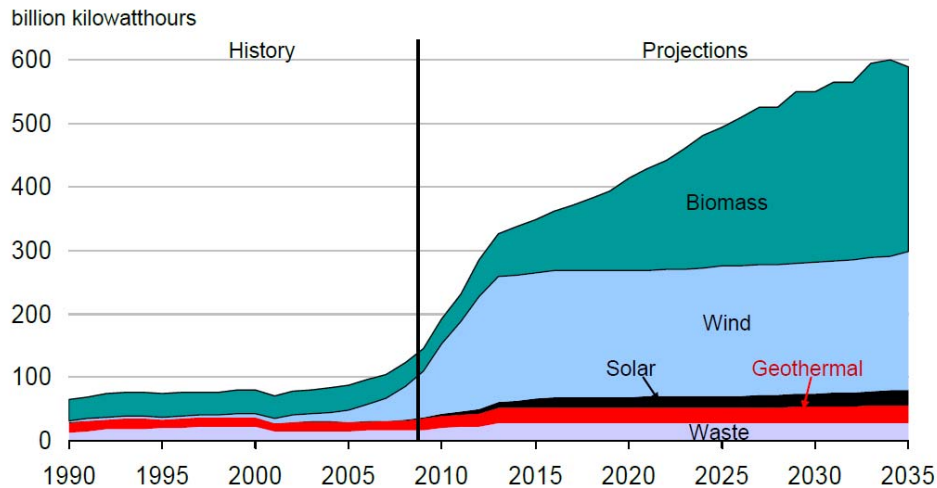


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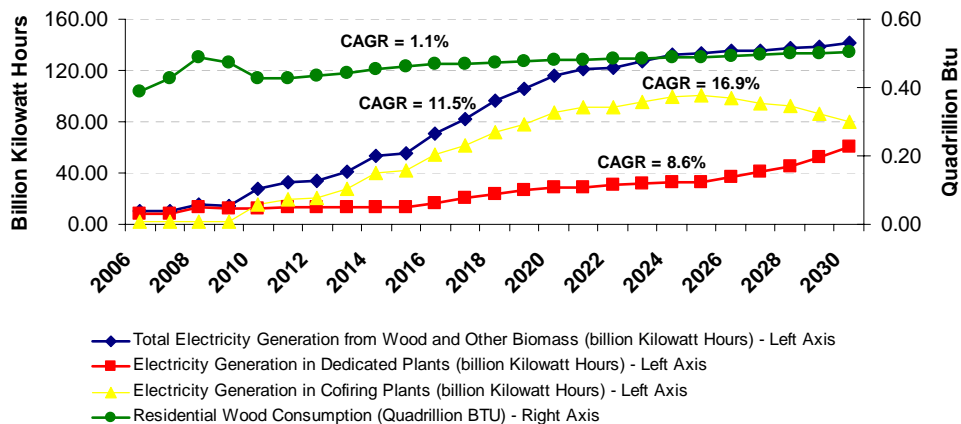
# Align Biomass Strategy to Fit Your Business—Not the Other Way Around

Developing a biomass strategy that's right for your business is necessary to ensure its success because feedstock controls your fuel costs and the ultimate performance and efficiencies of your energy operations.  
By Kirk Martin

The use of biomass as a substitute for fossil fuel to create energy, whether heat or power (or fuels for that matter), is expected to dramatically grow in the future as a reflection of its potential benefits, including environmental, economic and ability to reduce energy risk. Figure 1 illustrates the dramatic biomass growth expected through 2035.



Interestingly, the Energy Information Administration expects the majority of this biomass growth to take place with existing heat or power generation assets, with two-thirds of the expected growth to come from cofiring applications and not in new, dedicated biomass plants.



Just because industry growth is expected, however, doesn't mean that biomass is right for your business. At ground level, for the individual company seeking to economically produce energy from biomass, the

difference between “potential” and “realized” benefits is meaningful. The development of a biomass strategy that’s right for your business is essential for success. There are many questions to work through and analyses to complete to fully understand the complexities of this market and to define the likely benefits and risks to your specific business.

Thinking strategically when considering the key issues to follow will provide the framework for the development of your future plans for the utilization of biomass.

### **Success Starts with Supply**

We all recognize that success is driven by the alignment of feedstock availability, composition and costs with your business operations. After all, feedstock not only drives your fuel costs but also drives the ultimate performance and efficiencies of your energy operations.

The process would be comparatively straightforward if all biomass resources were created equal and performed consistently. The challenge is that there is no common definition or standard for the term “biomass.” Even something as seemingly consistent as “woody biomass” varies widely by species, moisture, size and form, bark and ash content, consistency, energy content, etc. Biomass is not created or defined equally and, therefore, by definition will not perform consistently in your operations.

As the biomass markets develop, too often we observe potential users working to evaluate what’s being made available rather than focusing on what they truly need. This reactive approach can be problematic and creates increased risks for both potential suppliers as well as downstream users. Aligning your biomass strategy to fit your business, and not the other way around, is a primary success factor.

To add to the feedstock challenge is the fact that the supply chain (delivering biomass feedstock in the form you need it) is immature and not well-defined or developed. The costs associated with supply chain coordination, including transportation and logistics, preprocessing, and storage and handling typically exceed the cost of the underlying biomass feedstock. Aligning this process to deliver the fuel resource in the form that best fits your business is also important.

Of course, understanding the operating performance and economics in your energy systems (from receiving through downstream energy production and emissions) is also critically important.

Suffice it to say determining whether biomass makes sense for your business is not a simple equation. Given the complexity involved, taking a more thoughtful and comprehensive approach to understanding the complete life-cycle impact on your business is required—from feedstock origination and delivery through downstream energy production and emissions.

The bottom line is, undertaking a major biomass initiative is risky business given the related challenges and uncertainties. Adhering to disciplined and repeatable business processes, working to truly understand the opportunities and risks in context of your business, and ensuring informed business decision making will reduce risk and improve your odds for success.

The following steps are recommended to help readers develop a long-term biomass strategy.

### **Define Your Strategic Biomass Objectives**

As with any new initiative, it’s important to “begin with the end in mind.” Start by clearly defining what you seek to accomplish with your biomass strategy and why that is important to your organization. Make sure to define how you expect to measure the success of your biomass strategy, whether that is economic, environmental or regulatory or some combination thereof.

### **Define Your Biomass Process Requirements**

Once you have defined what you seek to achieve with your biomass strategy, work to define your process requirements so you know what you are looking for and are positioned to communicate your requirements to potential suppliers. What are your downstream energy requirements for biomass? What are your feedstock specifications regarding volumes, consistency, composition, form, costs, etc.? What are your logistical and storage and handling considerations? What kind of supply terms do you desire?

### **Evaluate Potential Supply Resources and Strategies**

Work with a potential feedstock supplier in the region to better understand what's available in your market and how the potential supply aligns with your defined requirements. In this part of the review you are really looking to understand what is available, identify potential supply risks and clearly define the gap between what is available and how that fits with your defined feedstock requirements.

This phase will form the foundation for developing a feedstock supply chain strategy and approach that is designed to deliver what your facility needs to achieve your strategic objectives.

### **Define Biomass Feedstock Supply Chain Strategy and Approach**

Utilizing the information compiled above along with key supplier contacts developed in the process, work with potential supply partners to define the best supply procurement and delivery system for your organization. This may result in a strategy to develop intermediate feedstock aggregation and (pre)processing centers to normalize multiple types of feedstock into a consistent, homogenous fuel stream designed to meet the specifications of your organization. While the approach may increase the direct cost of the feedstock fuel, it should also reduce supply risk and improve handling and operating efficiencies.

### **Prove the Concept Through a Pilot Phase**

Once the conceptual approach has been defined, it's important to prove the concept through a pilot phase prior to committing the resources to scaling up the process. A pilot phase should be designed to test the feedstock origination process through receiving and downstream utilization in your operations. The goal is to test the process in the real world and to generate (and collect) the economic and operating data with which to evaluate the process and to compare it with your preliminary design estimates. While this process takes resources and time, the knowledge you gain through the process will no doubt save your organization time and money as you look to ramp up volumes in the future.

### **Plan for Scale-Up**

Armed with the clearly defined strategic and operational objectives and an understanding of the biomass resources in your region and how they fit with your requirements, together with the actual operating data and insight gained through the pilot program, you should be well-prepared to determine if biomass represents a viable approach to achieving your goals and to develop an actionable plan to ramp up the process going forward.

Putting the biomass strategy before the business' operational needs forces the business into a range of alternative energy decisions that can negatively influence the goals of the business. The biomass strategy, therefore, must be subordinated to the business strategy. External guidance through this maze of decisions can help you make the correct ones for your business, saving you time, money and headaches. BIO

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