



Leading From Experience

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## WHO WE ARE, WHAT WE DO

PacificAg designs, builds and operates large-scale agricultural feedstock supply chains for two growing global markets. The first is to replace petroleum and other fossil sources in the creation of bioenergy, cellulosic biofuels, bio-based chemicals and other bio-based products. A second market is for animal protein to feed the demands of an expanding global middle class.

Founded in 1998, PacificAg operates the largest agricultural residue and hay harvesting business in the US, experiencing rapid growth over the last three years, with expectations to double again in the next 24 months. Now operating in seven states, PacificAg has the largest fleet of biomass harvesting equipment in the US.

Over the last 15 years, PacificAg has developed its proprietary PowerStock Pro™ comprehensive supply chain management system. PowerStock Pro™ seamlessly integrates grower contracting and relationship management, innovative equipment operations, utilization and logistics with inventory storage and management, as well as a suite of reporting capabilities. This system has the effect of eliminating most risk and variability in feedstock supply and cost for commercial scale projects.

## DEDICATED SUPPLY CHAIN MODEL

The applications and demand for agricultural biomass have and will continue to grow at a dynamic rate over the coming decades. PacificAg has been a leader in developing a **dedicated supply chain** model for solving the challenges of supplying this demand. Industry and financial analysts as well as major end users are increasingly recognizing that the dedicated supply chain model, which depends on multi-year supply agreements and close, formalized cooperation from one end of the chain to the other, is the most effective way to mitigate the risks posed by cost, quality and supply volatility in a complex operating environment.

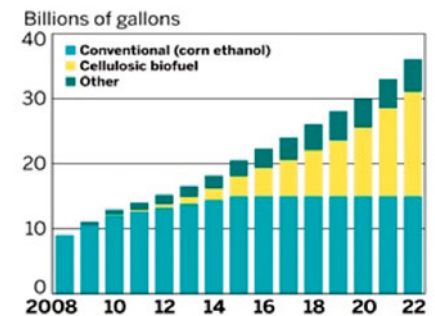
## OUR MARKETS

### Bioenergy

According to the US Department of Energy, agricultural biomass represents approximately **75% of the potential harvestable biomass supply for creating bioenergy and bio-products**. Accordingly, an estimated 200-400 commercial scale facilities

### RENEWABLE FUELS STANDARD

Proportion of renewable fuels requirement from cellulosic biofuels will increase



SOURCE: Energy Independence & Security Act of 2007



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are to be developed over the next two decades to meet the 14 billion gallon volume for cellulosic biofuels federally mandated by the Renewable Fuels Standard 2 (RFS2).

### **Bio-Based Chemicals and Products**

Demand for safer materials, uncertain petroleum price dynamics, and increasing consumer demand as well as technological breakthroughs are driving fundamental changes in the chemical industry leading to increasing demand for bio-based solutions. Market pull created by these factors puts the renewable material demand estimated by the USDA at \$614 billion across a broad range of chemicals. Bio-based chemicals can be used in a wide array of products, ranging from cleaning products, adhesives, plastic products and cosmetics.

Many current bio-based chemicals and products are utilizing conventional food-based sugars as feedstock for their biochemical conversion processes as a means of establishing

proof of concept at scale prior to transitioning to cellulosic biomass-derived sugars.

### **Feed and Forage**

The World Health Organization (WHO) projects that global demand for animal protein will grow by 72% by 2030 from 1999 levels. This global demand trend has strengthened overall demand for forage crops as they represent a significant portion of feed for livestock. PacificAg has been harvesting hay and crop residues as forage for export protein markets since 1998. East Asian demand led by exports to Japan, Korea and Taiwan since the 1980's have grown significantly, but in the last five years demand from China and the Middle East has grown exponentially. The Middle East is now the fastest growing emerging market region, with the United Arab Emirates as the largest current importer, but with interest growing from Jordan and Saudi Arabia.





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## CAPABILITIES AND EXPERTISE

From initial project scoping and feasibility to full-scale feedstock supply chain development and operation, PacificAg is uniquely positioned to provide long term and reliable agricultural biomass feedstock solutions.

### Experienced Management

PacificAg's management team has collectively harvested millions of tons and with management's combined 75 years of experience is naturally developing the systems and models capable of meeting growing demand in the coming decades. With over 15 years of experience in developing new markets and supply solutions for a growing array of industrial applications for ag biomass, no other player in the market has done more to build reliable, cost-effective feedstock supply solutions at a commercial scale.

### Grower Network

PacificAg has built the largest grower network in the US for ag biomass, supplying 12 different biomass crops as feedstock for both the forage and bioenergy markets.

### Proprietary Systems – PowerStock Pro™

Based on over 15 years of trial, error and innovation, PacificAg's proprietary PowerStock Pro™ supply chain management system provides a turnkey tool for managing every aspect of the complex feedstock supply chain from grower contracts to GIS enabled field mapping to equipment deployment, harvest results and inventory management.

### Growing Footprint

From its original area of operation in Oregon and Washington, PacificAg has expanded nationally over the last three years to meet the harvest and supply chain development needs of its customers and partners.



### Largest Equipment Fleet

With the largest fleet of ag biomass harvesting equipment in the US, PacificAg can balance a year around harvest schedule for its growers and end users. This deployment of equipment and expertise provides an industry-best asset utilization rate that drives down operating costs.



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## THE COMPANY WE KEEP

PacificAg has built an impressive track record as an early leader in the emerging agricultural biomass industry by working with leading equipment manufacturers, conversion technologies, project developers and land grant universities in the building of large-scale feedstock supply chains for a great diversity of bioenergy projects including commercial scale cellulosic ethanol, biomass electricity and

anaerobic digestion for biogas production. A partial list of partners includes: Abengoa Bioenergy, POET/DSM, Valero Renewables, Gavilon, DuPont Cellulosic Ethanol, Novus Energy, Edeniq, Portland General Electric, Dakota Spirit Ag Energy, a cellulosic biomass refinery project led by Great River Energy and Inbicon, Iowa State University and North Dakota State University.



### Company Information

PacificAg is a privately held limited liability corporation headquartered in Hermiston, Oregon. Key officers include:

- Bill Levy, CEO
- Steve Van Mouwerik, VP of Operations
- Rod Phelan, VP Harvest Operations
- Harrison Pettit, VP Business Development

### Contact Information:

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