Approved: March 19, 2010
Date

MINUTES OF THE HOUSE ENERGY AND UTILITIES COMMITTEE

The meeting was called to order by Chairman Carl Holmes at 9:15 a.m. on January 26, 2010, in Room 785 of the Docking State Office Building.

All members were present except:
Representative Carl Holmes- excused
Representative Mike Burgess - excused
Representative Annie Kuether - excused
Committee staff present:
Matt Sterling, Office of the Revisor of Statutes
Cindy Lash, Kansas Legislative Research Department
Iraida Orr, Kansas Legislative Research Department
Renae Hansen, Committee Assistant

Conferees appearing before the Committee:
Chris Roach, Abengoa

Others attending:
Twenty including the attached list.

Presentation on:
Cellulosic Alcohol production in Kansas

Chris Roach, Abengoa (Attachment 1), presented information to the committee on their future bio-energy plant and presence in the United States. Additionally, they described, (Attachment 2), plans for the first commercial-scale hybrid cellulosic ethanol and power plant in the United States. It will be located in Hugoton, Kansas.

Questions were asked and comments made by Representatives: Tom Moxley, Vern Swanson, Don Myers, Tom Sloan, Margaret Long, Forrest Knox, Rocky Fund, Milack Talia, and Vince Wetta.

The next meeting is scheduled for January 27, 2010.

The meeting was adjourned at 10:07 a.m.

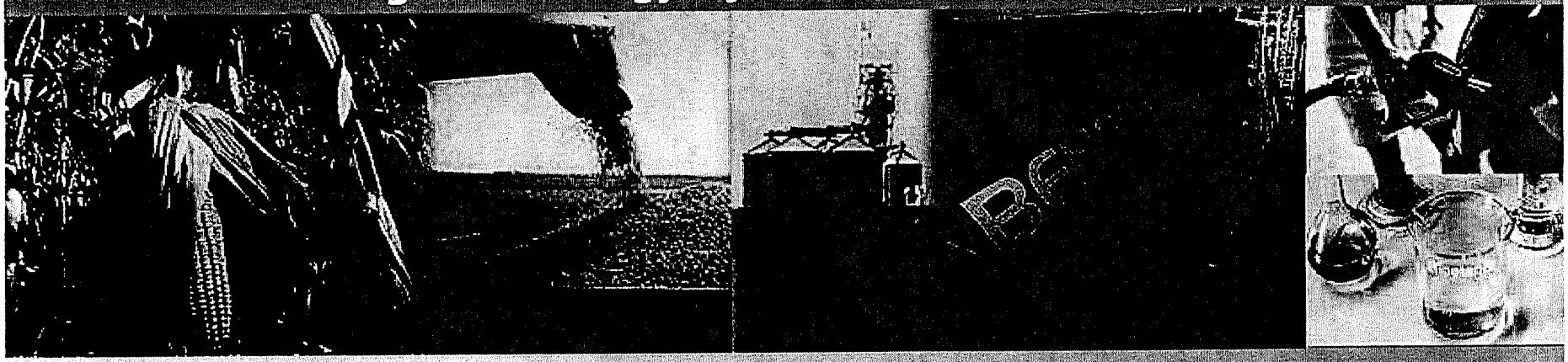
HOUSE ENERGY AND UTILITIES COMMITTEE
GUEST LIST

DATE: January 26, 2010

NAME	REPRESENTING
Tom Day	KCC
Lon Stanton	Northern Natural Gas Co
Mark Schreiber	Westar
Clare Gustin	Sunflower Electric
Andy Fry	KCC
Joe Dick	KCBPU
Chris Roach	Abengoa Bioenergy
Mary Jane Stankiewicz	KAEP
Dan Hotchkiss	KEC
Mari Tucker	Commerce
Kimberly Svaty	GSPA
Wilson Kruger	USC
Michelle Peterson	Capitol Strategies

ABENGOA BIOENERGY

Abengoa Bioenergy Hybrid of Kansas, LLC (ABHK)



www.abengoabioenergy.com

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ABENGOA BIOENERGY

Abengoa Overview

Abengoa is a technology company that applies innovative solutions for sustainable development in infrastructure, environmental and energy sectors. It is present in over 70 countries where it operates through its five Business Units: Solar, Bioenergy, Environmental Services, Information Technology, and Industrial Engineering and Construction.

Industrial Engineering & Construction

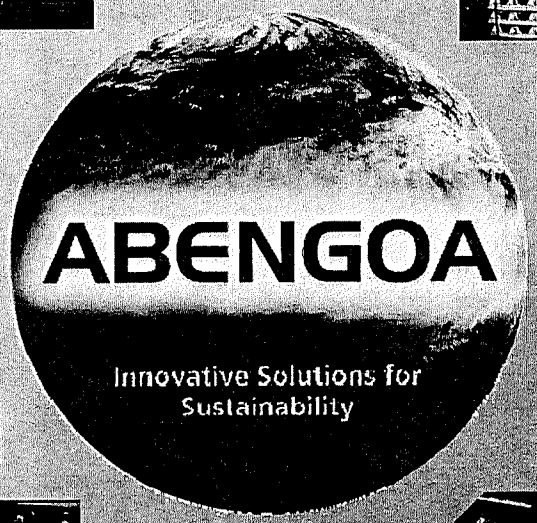
With engineering...
we build and operate conventional and renewable energy power plants, power transmission systems, and industrial infrastructures

Environmental Services

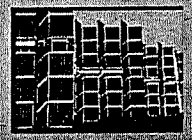
With waste ...
we produce new materials through recycling, and we treat and desalinate water

Bioenergy

With biomass ...
we produce ecological biofuels and animal feed



Solar



With the sun ...
we produce thermoelectric and photovoltaic electric energy

Information Technology

With information technologies ...
we manage business and operational processes in a secure and efficient way

Focus Abengoa

With social and cultural policies ...
we contribute to economic progress and the conservation of the environment in communities where Abengoa is present

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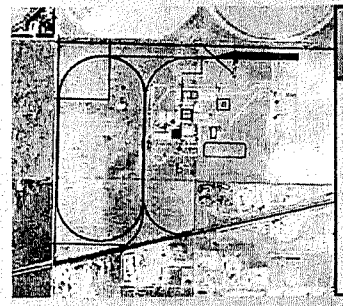
Assets for R&D Strategy Development

...and Leading the 2nd Generation



Commercial Hybrid Biomass Plant

- Capacity : **15 MGPY Cellulosic Ethanol, 75 MW Renewable Power**
- Raw material : **Corn Stove, Wheat Straw, Switchgrass**
- Technology : **Enzymatic Hydrolysis (glucose & xylose)**
- Objective : **Production at a gasoline competitive cost**
- Start-up Operations : **2012 estimated**

Biomass Demonstration Plant

- Capacity : **1.3 MGPY**
- Raw material : **Wheat and Barley Straw**
- Technology : **Enzymatic Hydrolysis (glucose)**
- Objective : **Demonstrate biomass -to-ethanol process technology at commercial scale**
- Start-up Operations : **2009**

Biomass Pilot Plant

- Capacity : **0.02 MGPY**
- Raw material : **Corn stover**
- Technology : **Enzymatic Hydrolysis (glucose & xylose)**
- Objective : **Competitive process with grain ethanol**
- Start-up Oper. : **2008**

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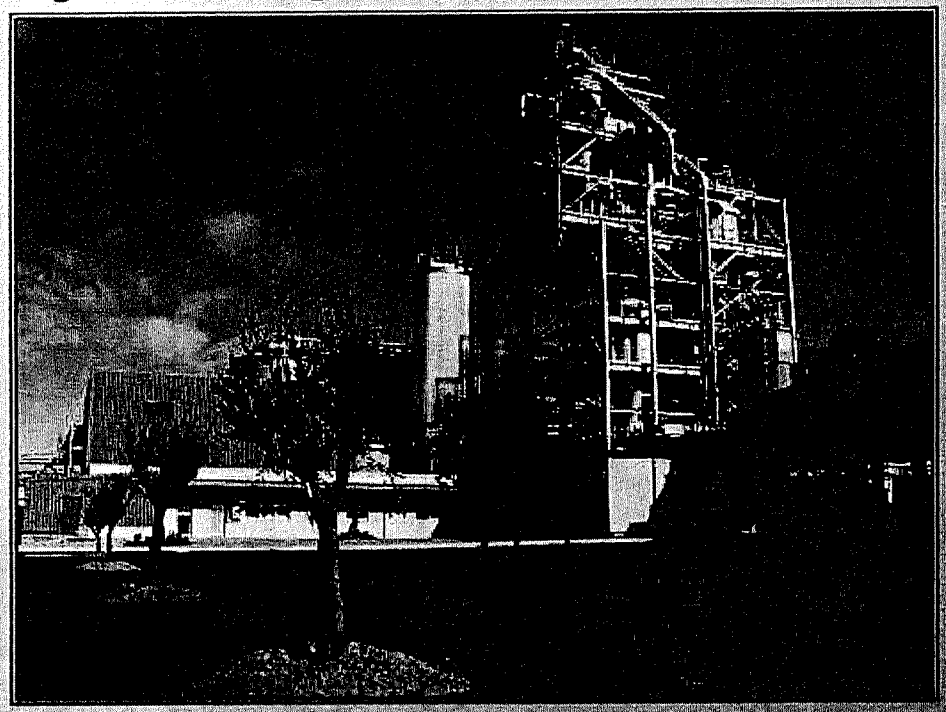
Salamanca Biomass Plant

Full Facility Operation

- First ethanol from biomass obtained first week in October
- Integrated operation ongoing
- Generating data for Hugoton project

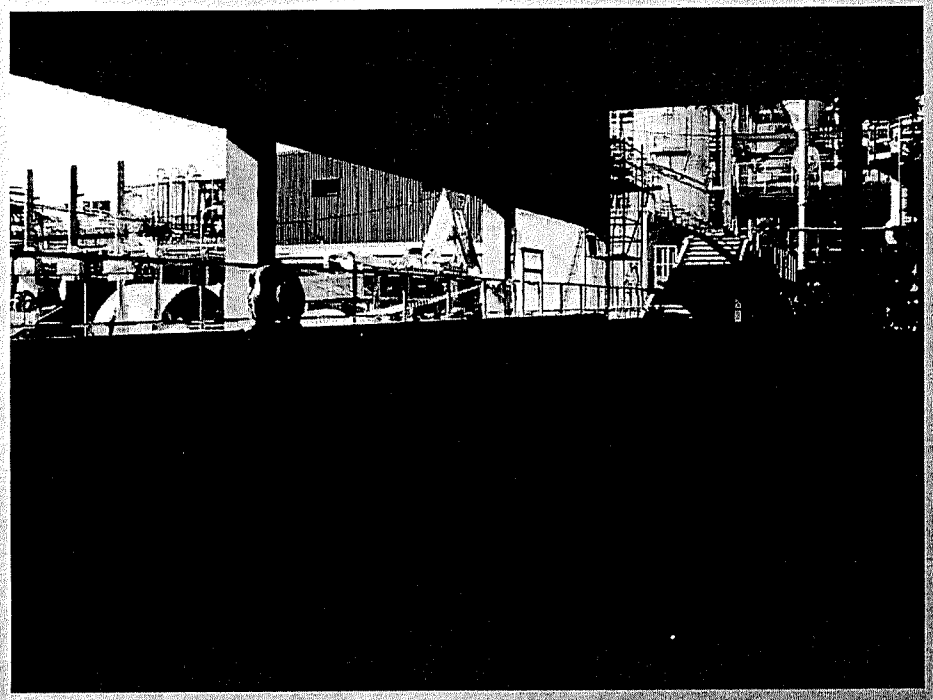


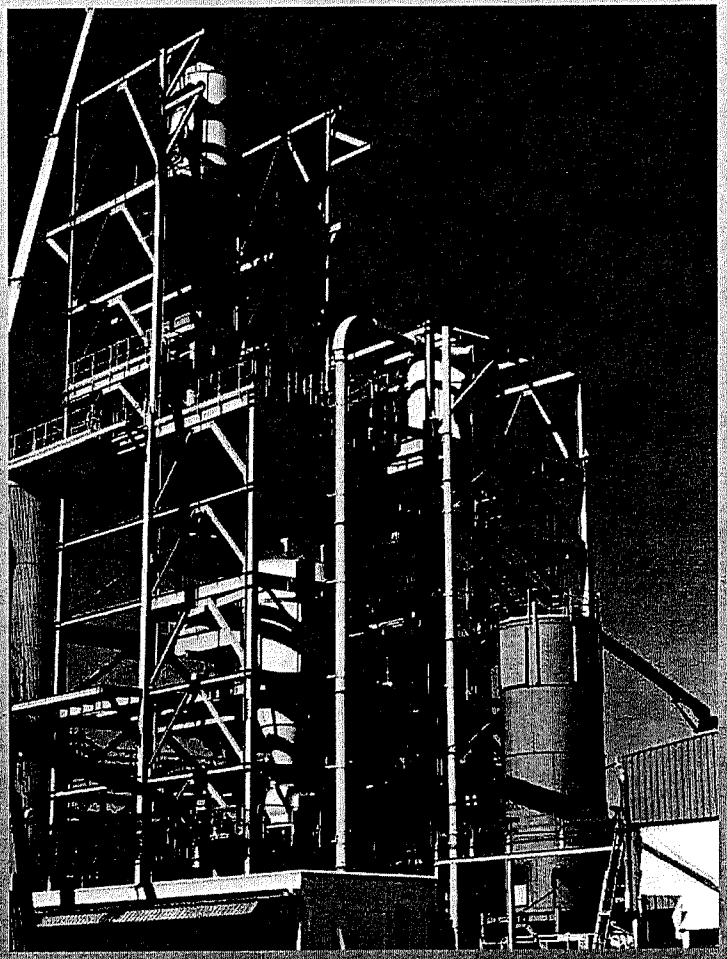
Biomass plant areas

- Feedstock Preparation
- Pre-treatment
- Enzymatic hydrolysis and fermentation
- Distillation
- Utilities

Preparation

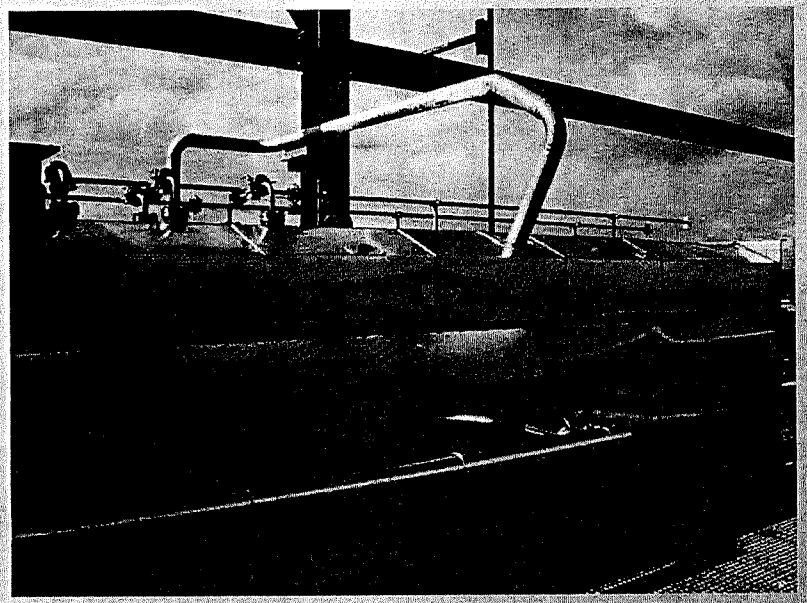
- Bale storage area
- Milling & cleaning

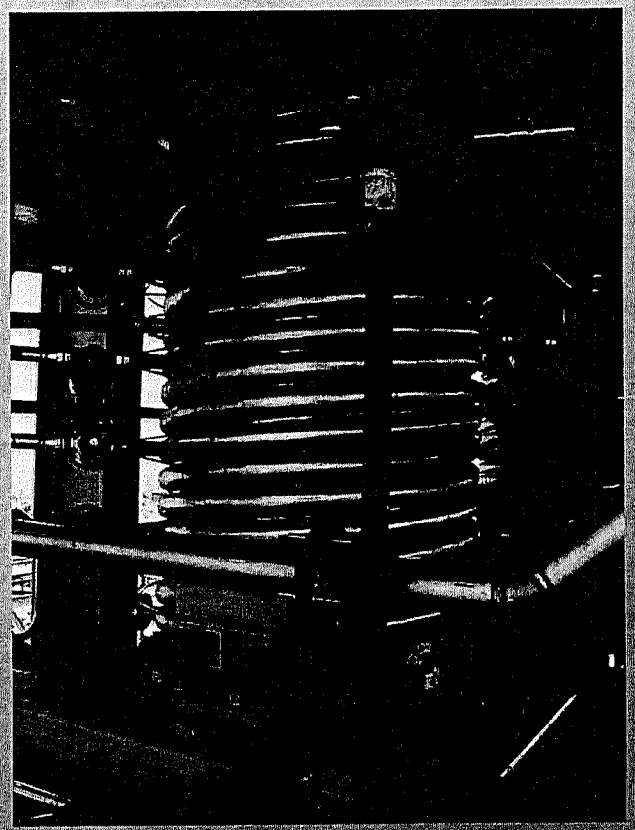




Pretreatment

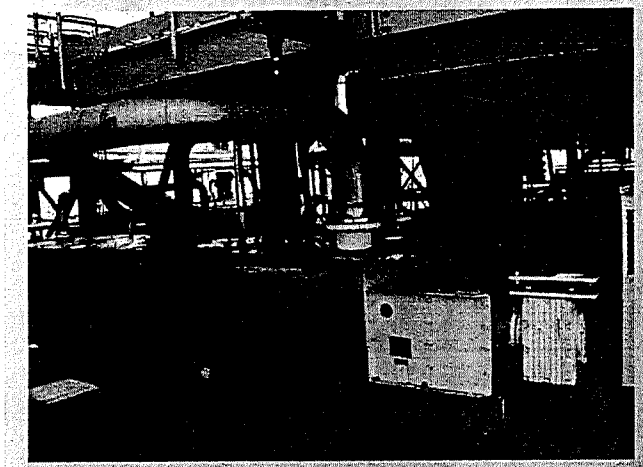
- Acid impregnation
- Steam explosion
- Neutralization

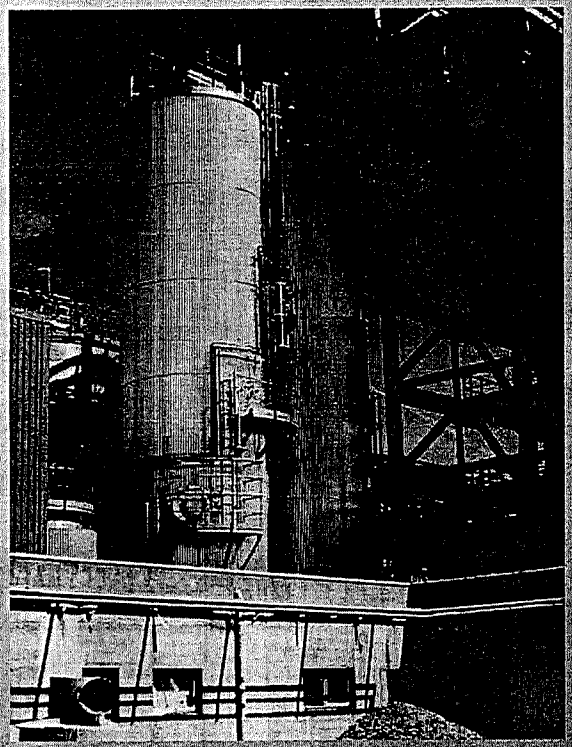


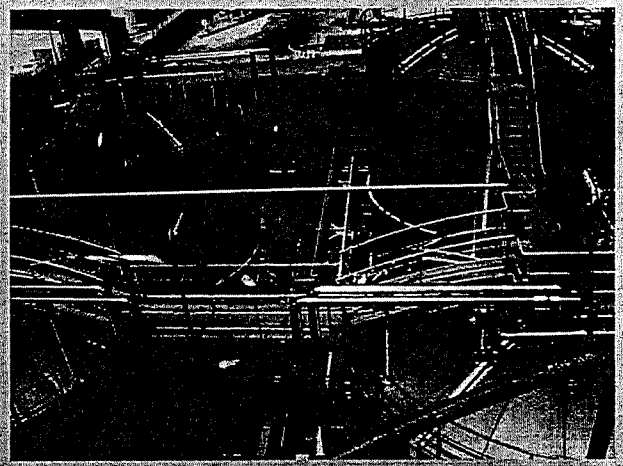


Enzymatic Hydrolysis and Fermentation

- Enzyme addiction
- Pre-Saccharification
- Yeast addition
- Fermentation

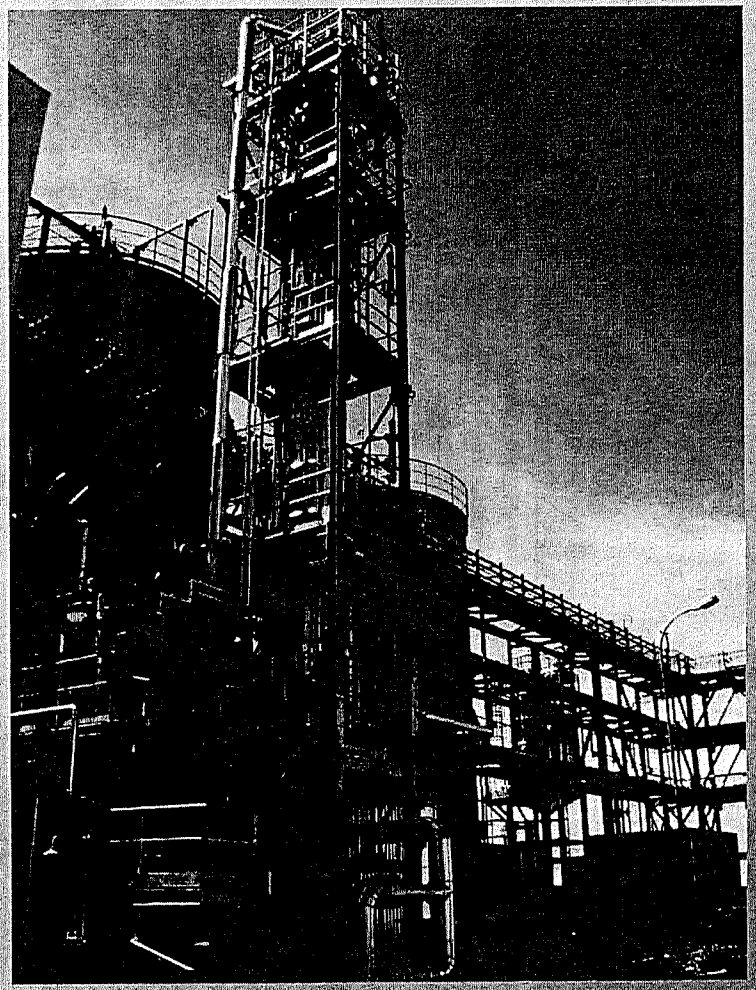






Distillation

- Ethanol 42%w
- Stillage



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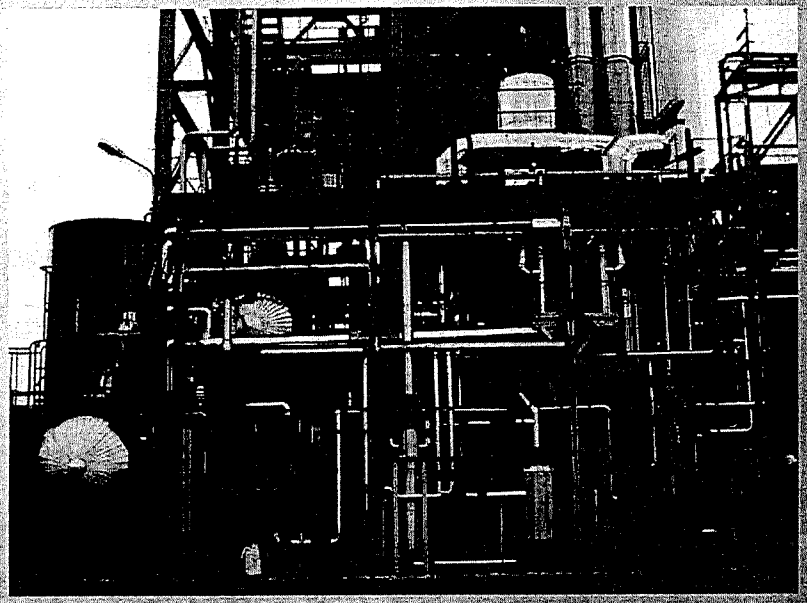
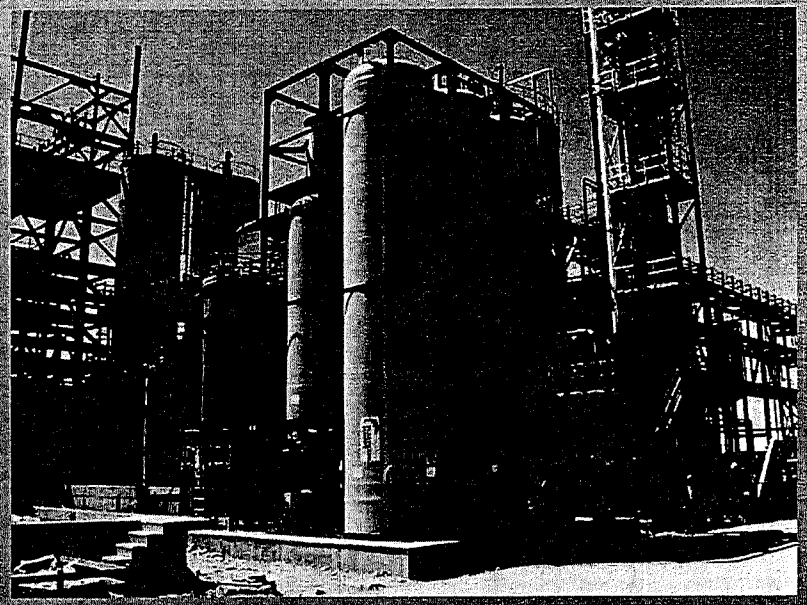
Utilities

- Chilled water
- High pressure boilers
- Anaerobic waste water treatment plant
- Compressed air





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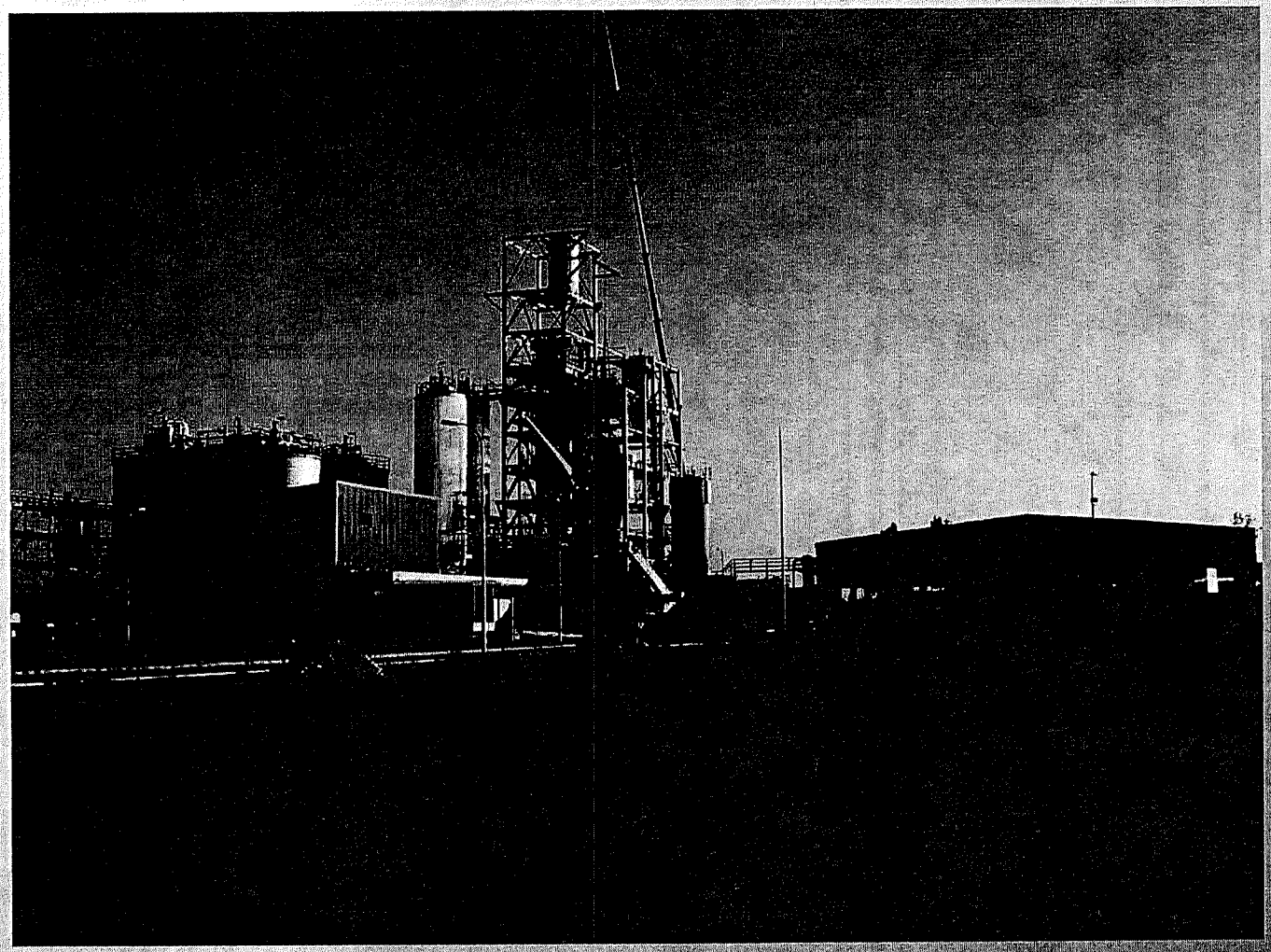


ABENGOA BIOENERGY

Abengoa Bioenergy Hybrid of Kansas (ABHK)

- First commercial facility of Abengoa Bioenergy's Cellulosic Ethanol technology
- A $550 million plus project, supported by a $76 million grant from the Department of Energy plus an equity commitment from Abengoa Bioenergy
- Proposed project start of construction, late 2010, start of operation by 2012
- Hugoton Kansas site selected for project based on local attributes:
  - Significant supply of biomass
  - Strong state and local support for the project
- Key first project in the successful growth of Abengoa Bioenergy's Cellulosic Ethanol Business and the US Cellulosic Ethanol Industry

Abengoa Bioenergy Hybrid of Kansas (ABHK)

Projected Local Economic Impact

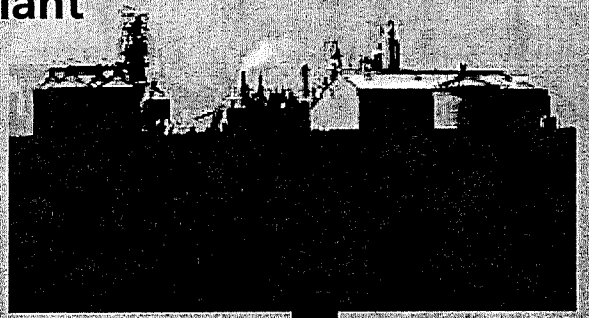
- 90 Full Time well paying jobs at the facility.
- 50 – 100 jobs in biomass procurement.
- 88 equivalent full time jobs during construction (18 months)
- $17M in added local income during construction, $4.5M after operation commences.
- $3-5M spent locally in materials and services.
- $13M for biomass feedstock from local producers, not including harvest or transport.
- The project will generate significant additional tax revenue at all levels, local, state, and federal.

ABENGOA BIOENERGY

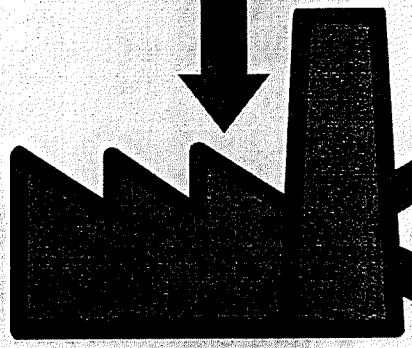
ABHK Operation

Biomass Feedstock
2,500 Dry Tons per day
875,000 Dry Tons per year
Corn Stove, Wheat Straw,
Switch Grass

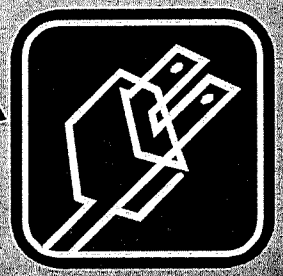
Enzymatic Hydrolysis Plant



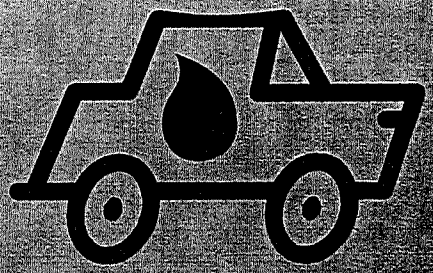
Electricity and Steam



Energy Plant

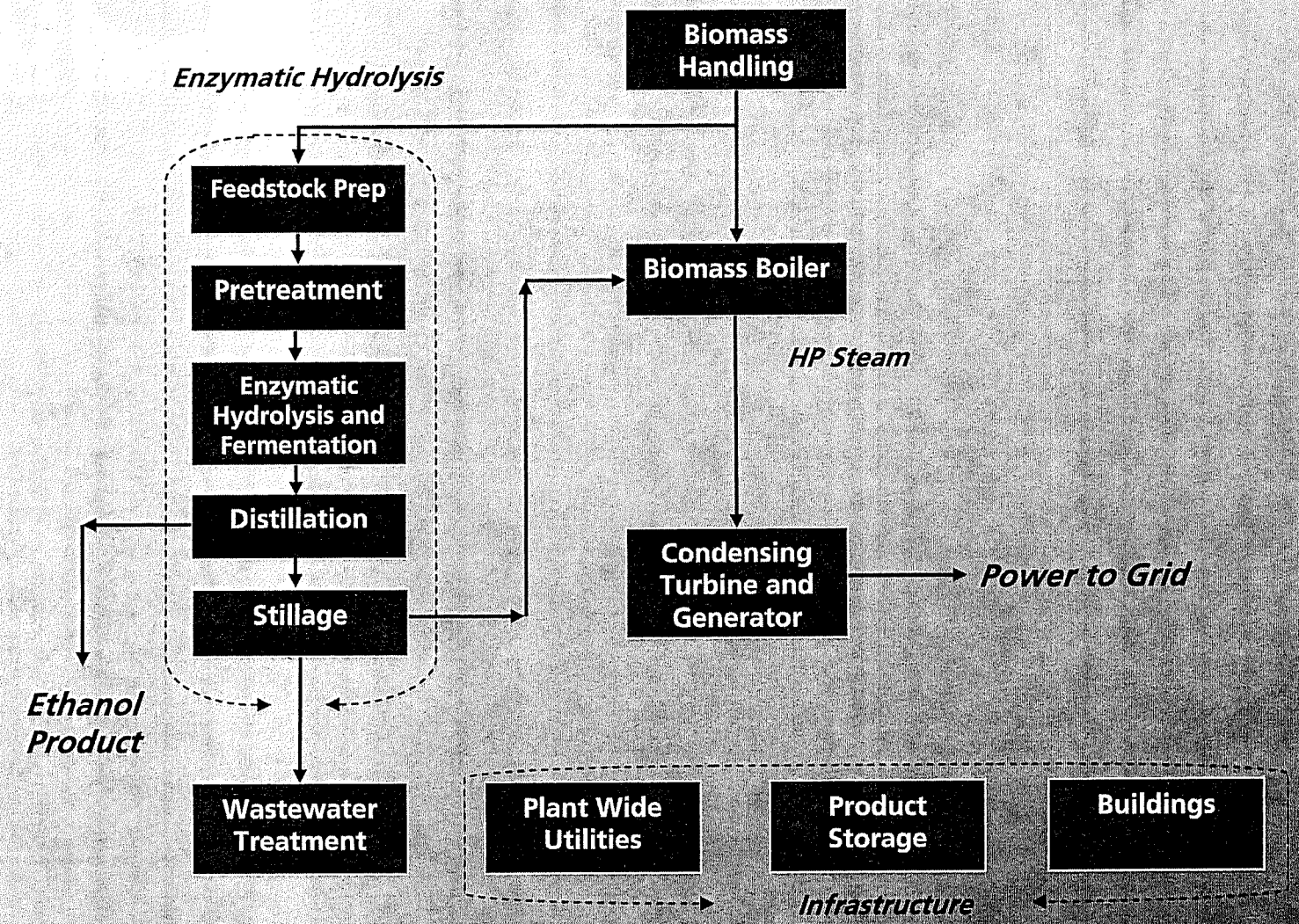


Renewable Electricity
75 MW



Cellulosic Ethanol
15 M gallon / year

ABHK Block Flow Diagram



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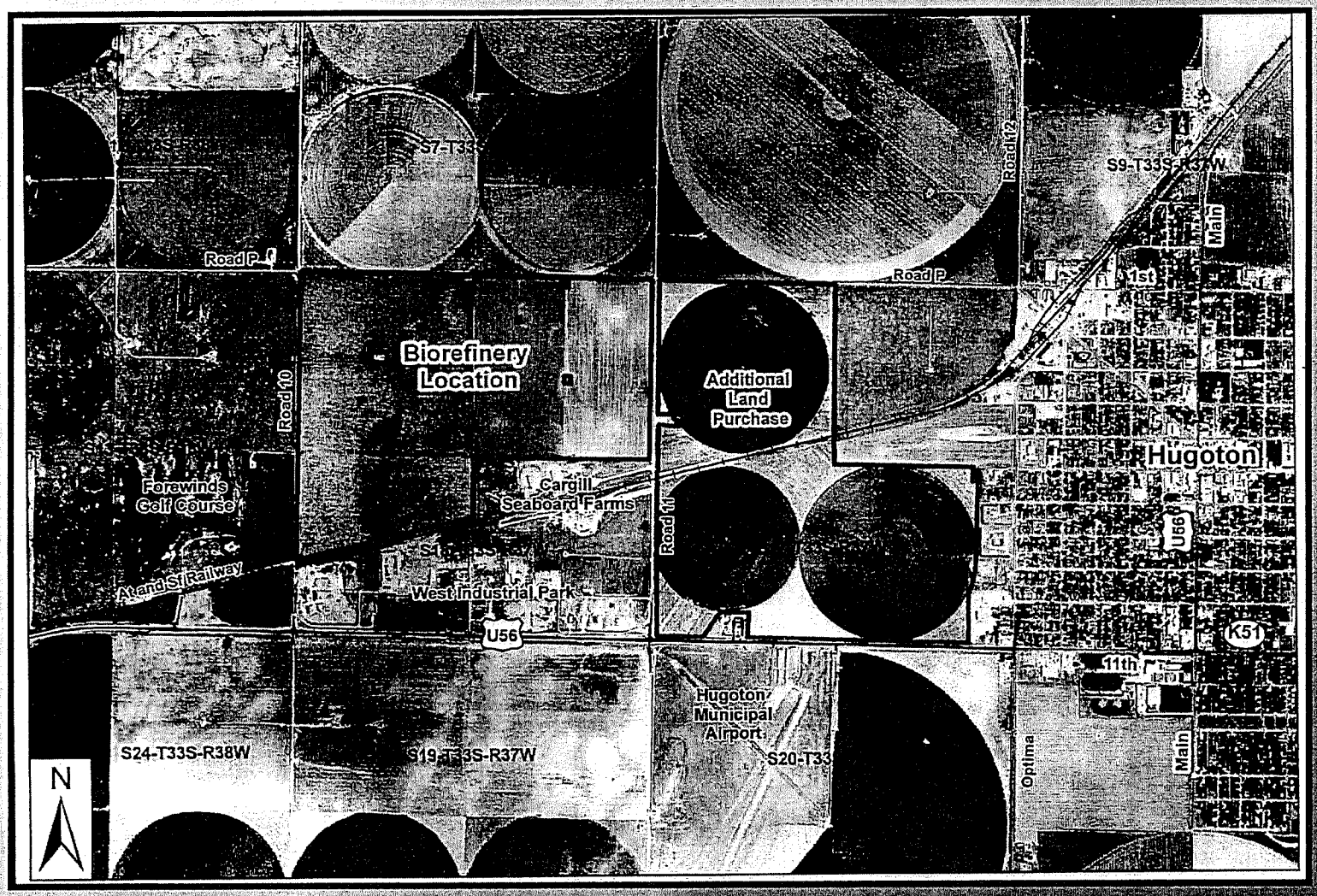
ABHK Site



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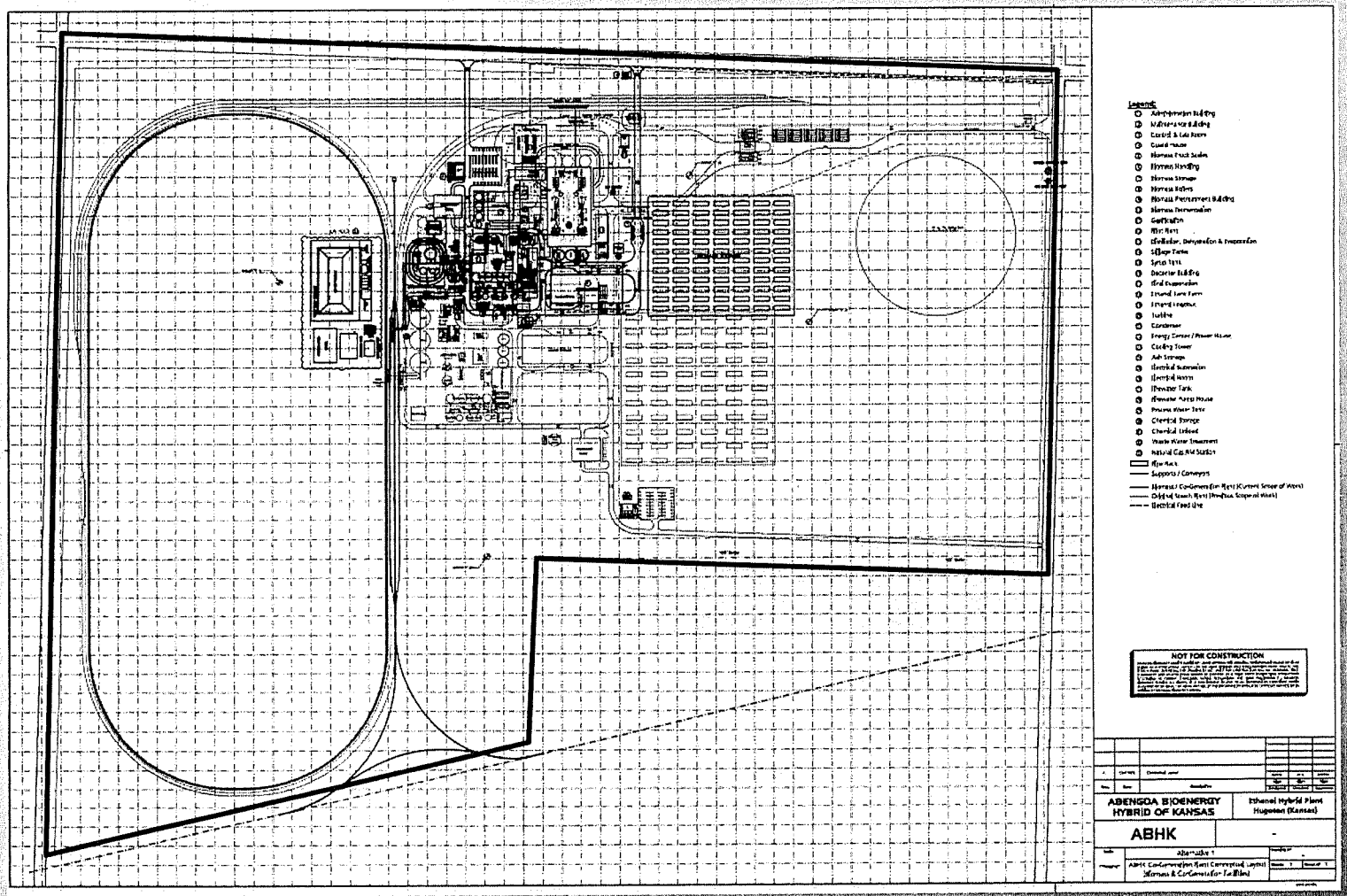
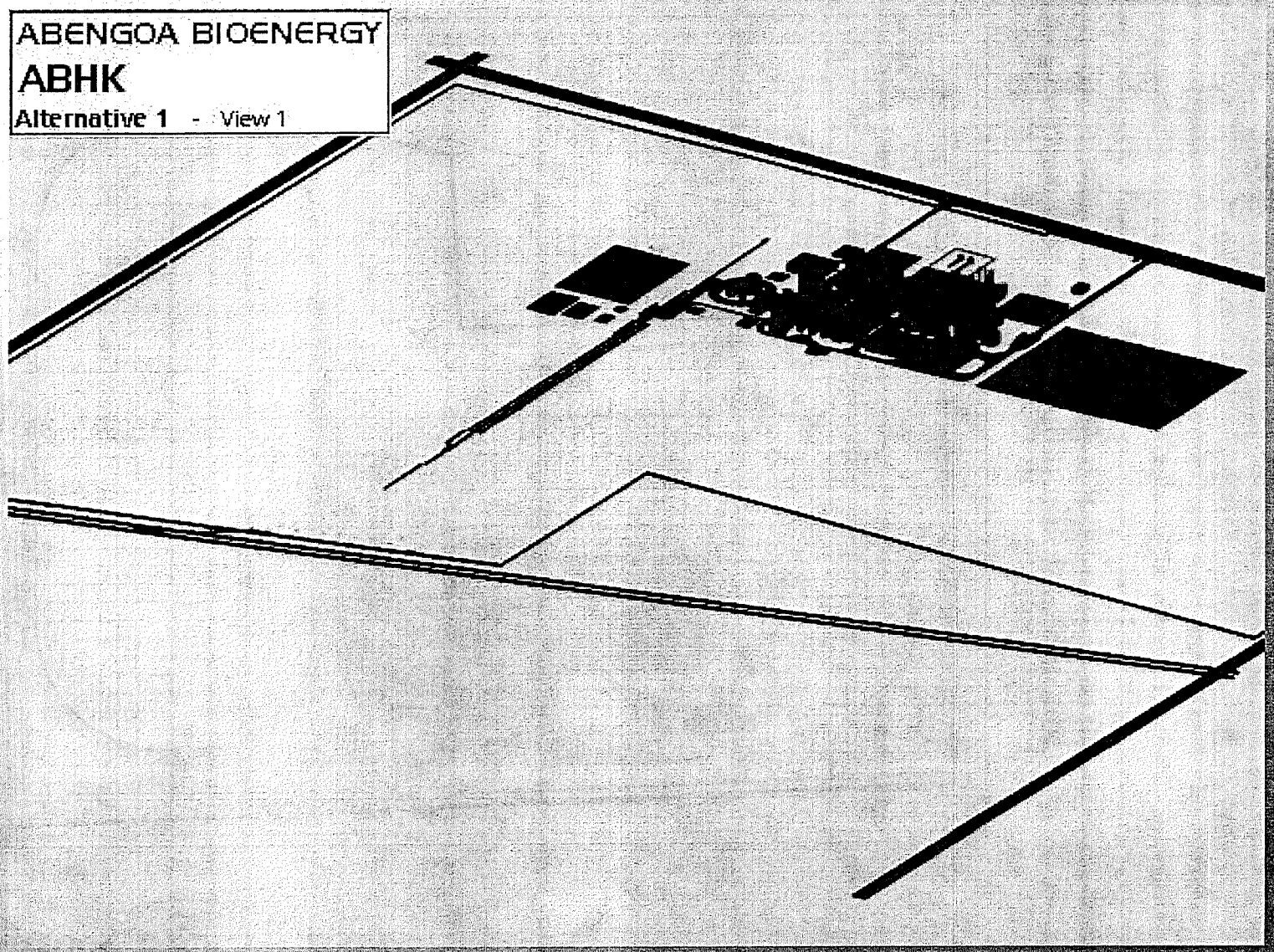
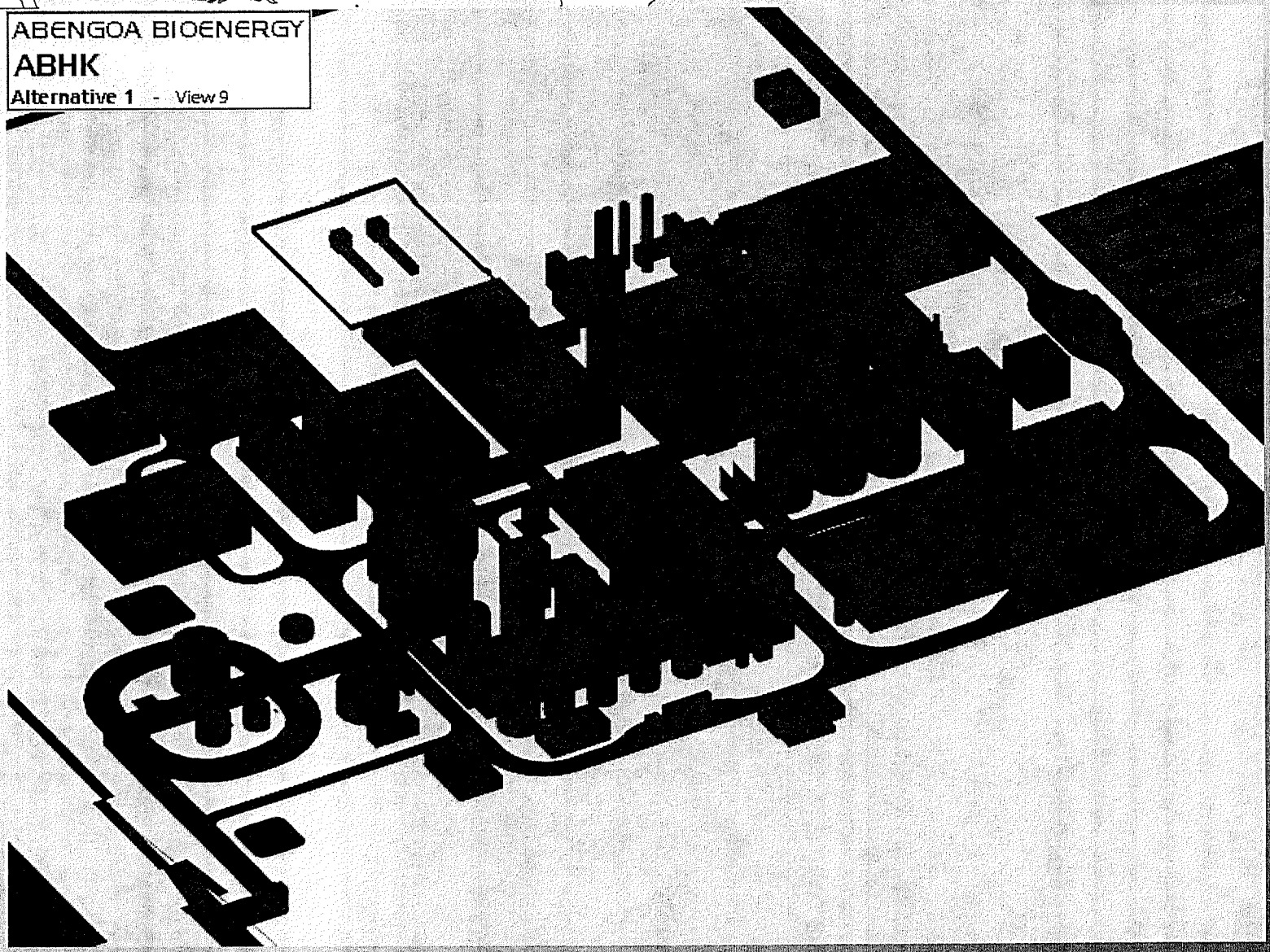
ABHK Site Layout



ABHK 3D Rendering



ABHK 3D Rendering

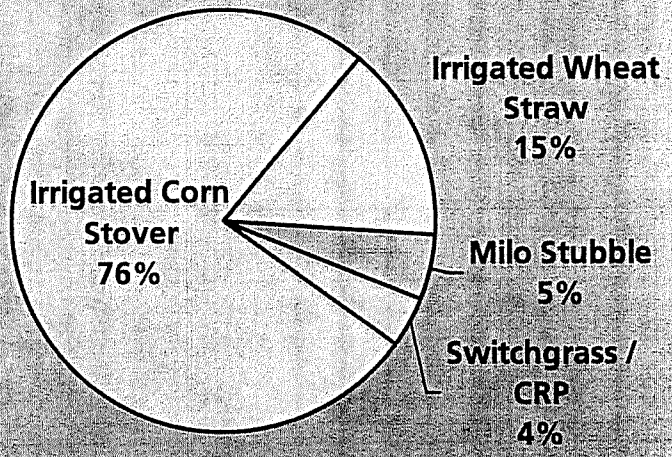


ABENGOA BIOENERGY

Biomass Feedstock

ABHK Biomass Feedstock Needs

- 1,030,000 "as is" tons of biomass per year
- Estimated 500,000 – 525,000 acres of land

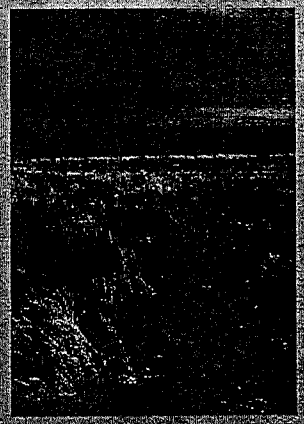


Irrigated Wheat Straw

Milo Stubble

Switchgrass

Irrigated Corn Stover

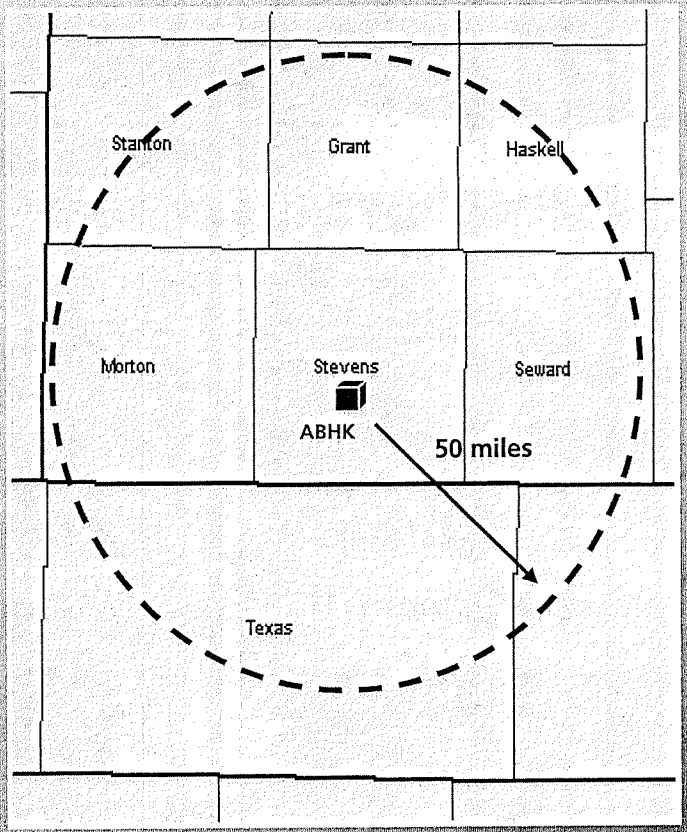


CRP Grassland

Biomass Feedstock

Target Draw Area

- Stevens County, KS
- Seward County, KS
- Morton County, KS
- Haskell County, KS
- Grant County, KS
- Stanton County, KS
- Texas County, OK



10% - 12% of available biomass is required within 50 mile radius

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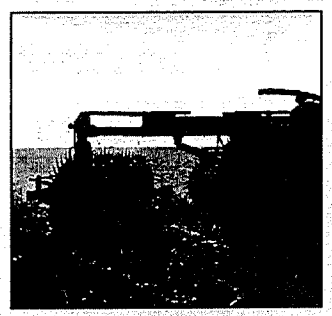
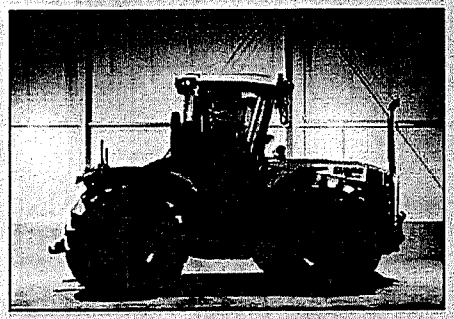
Biomass Harvesting and Transport

Harvest

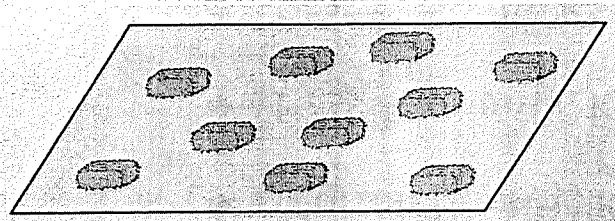


Wheel Rake

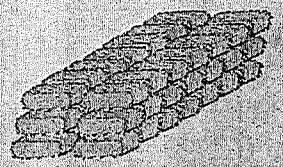


Bi directional Tractor

Large Square Baler



3′ x 4′ x 8′ Bales in Field



2 wide x 3 tall x 6 long
on 53′ flat bed trailer

Bale weight = 1200 – 1400 lbs

Bale Density = 12 – 13.5 lbs / ft3

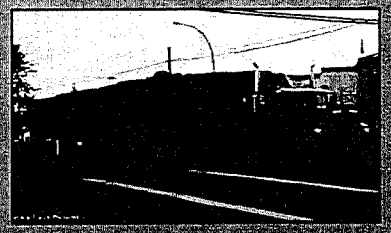
36 bales / truck = 21 - 25 wet tons

These are conservative inputs

Transport

Bale Accumulator

Bale Squeeze Loads Truck



Flat Bed Trailer Transport

ABENGOA BIOENERGY

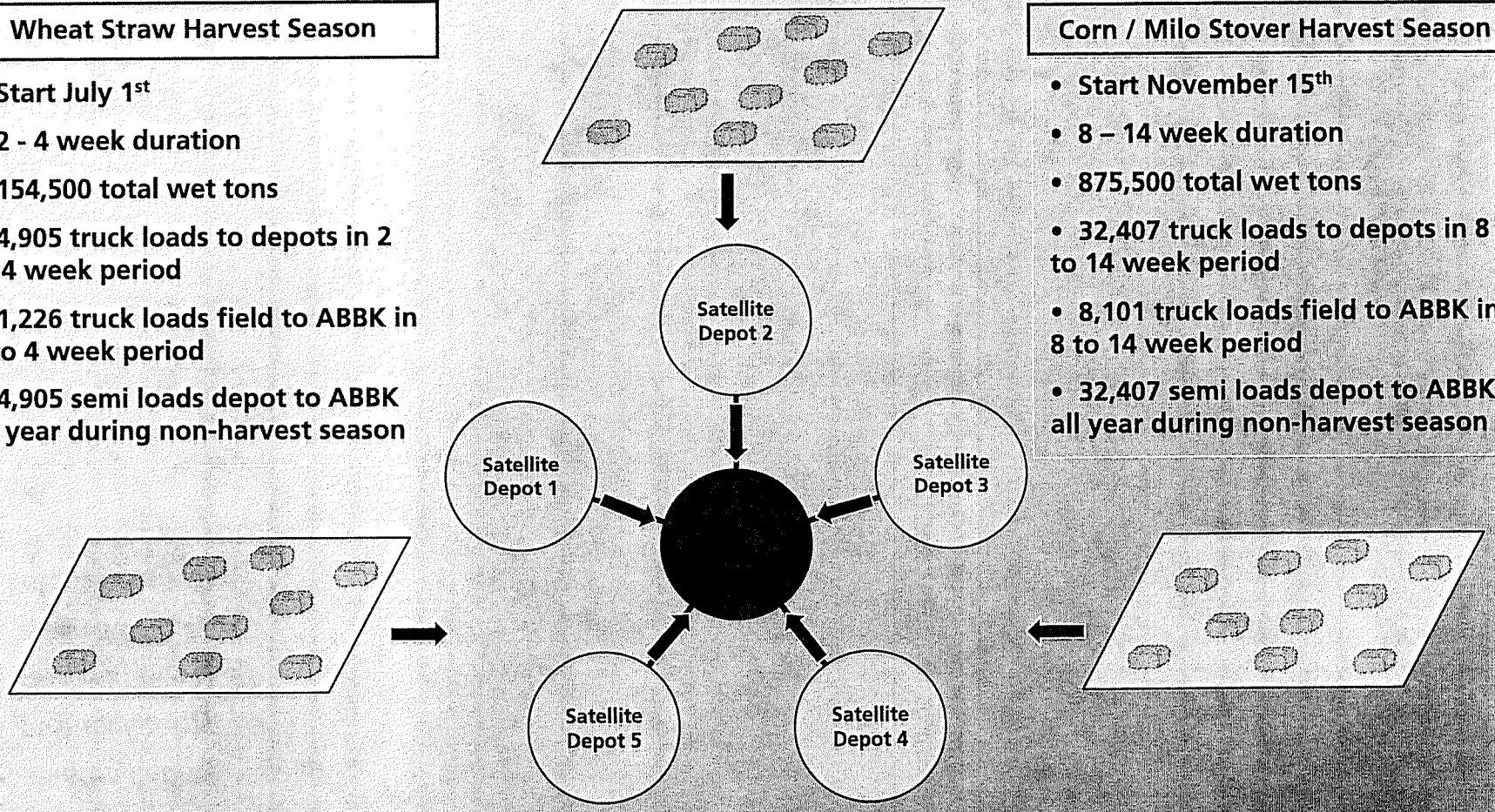
Truck Transport – Off Site Storage Logistics

Wheat Straw Harvest Season

- Start July 1st
- 2 - 4 week duration
- 154,500 total wet tons
- 4,905 truck loads to depots in 2 to 4 week period
- 1,226 truck loads field to ABBK in 2 to 4 week period
- 4,905 semi loads depot to ABBK all year during non-harvest season

Corn / Milo Stover Harvest Season

- Start November 15th
- 8 – 14 week duration
- 875,500 total wet tons
- 32,407 truck loads to depots in 8 to 14 week period
- 8,101 truck loads field to ABBK in 8 to 14 week period
- 32,407 semi loads depot to ABBK all year during non-harvest season



Overall Logistical Scheme

- After biomass is harvested into package form, it is transported via flat bed trailer to nearest satellite depots
- Estimated that 80% of biomass packages will go from field to satellite depot for storage then to ABBK

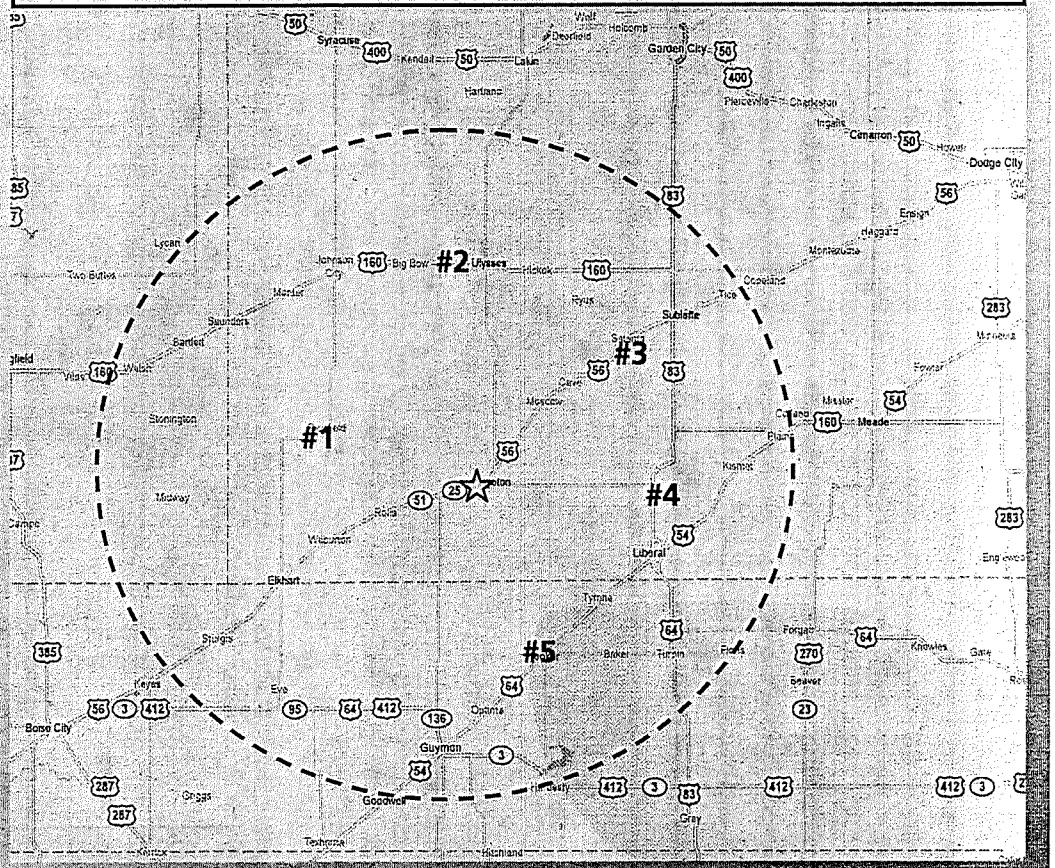
ABENGOA BIOENERGY

Region of Influence

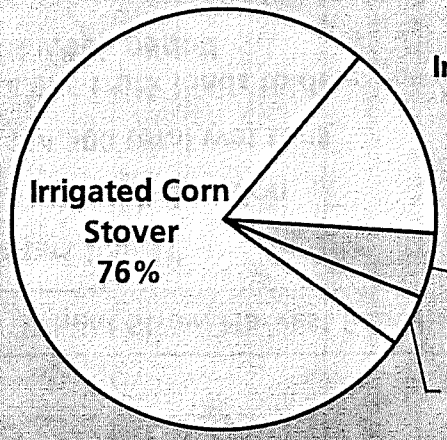
Counties in Draw Area

- Stevens County, KS
- Stanton County, KS
- Morton County, KS
- Seward County, KS
- Haskell County, KS
- Grant County, KS
- Texas County, OK

Procurement Draw Area (~50 mile radius)



Feedstock Breakdown



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ABHK Project Schedule

Done

- Site secured, water rights secured, all major permits in process
- Financing efforts started, financial advisor engaged
- DOE Loan Guarantee Part 1 application submitted
- Power Purchase Agreement Term Sheet Executed
- Pilot Plant and Demo Plant data for design completed

H1-2010

- Substantial Completion Detailed Engineering
- Secure Power Purchase Agreement
- Secure Biomass supply commitments
- Complete NEPA Environmental Impact Statement
- Secure Air and Water Permits

H2-2010

- Close Loan Guarantee and Financing
- Construction Begins

2012

- Construction Complete
- Plant Start Up

Conclusions

- Commercial cellulosic ethanol is a strategic Abengoa Bioenergy goal.
- Pilot and Demonstration plants have provided information for:
  - Technology optimization.
  - Investment reduction in future construction plants.
  - Operational cost reduction.
  - Improve the enzymes used in the process.
- The energy crops development is critical for new process.
- New Integrated Biorefinery with renewable power commercially viable, with policy support for cellulosic biofuels and renewable biomass based power.

Green House Gas Policy, US

- 2007, Supreme Court decides EPA has authority and responsibility to regulate GHG emissions.
- 2009, EPA study concludes GHG emissions threaten public health and intends to regulate these emissions.
- Current US Senate climate bill includes 20% reduction of GHG's by 2020 and 80% reduction by 2050. Bill likely will not be enacted in 2010.
- Current US House climate bill includes RPS of 20% by 2020, with $25 / MW alternative compliance payment. Bill likely not enacted in 2010.
- Energy bill by the end of 2010 will likely include some form of federal RPS with a mechanism to monetize value for Renewable Energy Credits.

ABENGOA BIOENERGY

ABHK's Renewable Power Generation

- Reduces CO2 addition to the environment by 1 ton / MW, or 860,000 tons per year.
- Biomass based power is highly reliable with a capacity factor of at least 90%.
- Fuel purchased from all local suppliers.
- Establishes biomass as a viable stand alone source of power generation.
- Provides diversity to the Kansas Renewable Energy Portfolio and increases availability.

ABHK and Kansas Policy

- State RPS rules pending, including use of a REC system
- ABHK needs to see monetized value of REC's at $25 / MW
- ABHK hopes to close financing in mid 2010, having a quantified REC market will be critical to closing.

ABENGOA BIOENERGY

Mid-Kansas ELECTRIC COMPANY, LLC
neighbors serving neighbors

Abengoa Bioenergy and Mid-Kansas Electric Reach Agreement Concerning First Commercial-Scale Hybrid Cellulosic Ethanol and Power Plant in U.S.

Partnership to Diversify Kansas' Electric Generation and Promote Energy Independence

Hugoton, Kan. – Jan. 19, 2010 –Abengoa Bioenergy and Mid-Kansas Electric Company LLC (Mid-Kansas) announced plans today concerning the development of the nation's first commercial-scale hybrid cellulosic ethanol and power plant, Abengoa Bioenergy Hybrid of Kansas, LLC (ABHK). ABHK is a sustainable solution that will diversify electric generation in Kansas and help power the state's growing demand for energy using Abengoa Bioenergy's state-of-the-art, integrated bio-refinery technology and Mid-Kansas' service capabilities.

An agreement between Abengoa Bioenergy and Mid-Kansas has been signed identifying the terms of a power purchase agreement for 75 megawatts of base load electricity. The electricity will be generated at the electric generation and cellulosic ethanol plant to be constructed in Stevens County, Kan., and will use biomass from crop residue as a fuel source.

"As an international energy company, we believe this project is an important part of our continual growth in bioenergy," said Javier Salgado Leirado, president and CEO of Abengoa Bioenergy. "Advancing this project required the perfect match of agricultural resources, technology, and a utility partner—all present in our partnership with Mid-Kansas. The agreement terms allow us to move forward with the project and bring significant investment to Kansas."

The facility will be constructed at a cost of $550 million and have the capability to generate electricity and produce cellulosic ethanol. The cellulosic ethanol facility will produce 15 million gallons of ethanol per year and use corn stover, wheat straw and switchgrass as fuel inputs. The plant will use 2,500 tons of biomass daily to produce ethanol and electricity. Start-up operations are expected in 2012.

The construction project will require nearly 100 full-time jobs during the 24-month construction period, generating $17 million in construction wages.

Once constructed, the plant will require approximately 90 full-time employees and will purchase $13 million of biomass annually from area farmers and purchase more than $3 million of other goods and services locally. The plant will pay $4.5 million in wages annually when operational, and it is expected that more than 50 additional jobs will be needed for biomass procurement. The plant will consume 10 percent to 12 percent of biomass within a 50 mile radius of the plant.

"The Mid-Kansas board is continually looking for opportunities to develop base load resources to add to the Mid-Kansas generation portfolio," said L. Earl Watkins, Jr., president and chief executive officer of Mid-Kansas. "This power purchase agreement will generate base load while benefitting area farmers. We are pleased to support this effort and look forward to a successful relationship with Abengoa Bioenergy."

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The contract calls for Mid-Kansas to purchase all electricity from the facility for a 20-year contract period with rights to extend for additional years. Pioneer Electric Cooperative Inc. will provide retail electric service to the facility.

Abengoa Bioenergy
Abengoa Bioenergy (www.abengoabioenergy.com) is the largest European ethanol producer and one of the largest producers in the U.S.A. With two recently acquired production facilities in Brazil, Abengoa Bioenergy is the only worldwide bioethanol manufacturer with production and access to markets on three continents. Abengoa Bioenergy has recently completed construction and is in the process of starting up two new facilities in the U.S., one in Indiana and another in Illinois. When combined with the five operating facilities in Europe and a sixth facility in Rotterdam, which will be completed this year, our total production capacity will exceed 800 million gallons/year. Abengoa Bioenergy is one of five divisions of the Spanish public company Abengoa S.A., a technology company applying innovative solutions for sustainable development in the infrastructure, environment and energy sectors. Abengoa S.A. is present in more than seventy countries where it operates multiple companies within its five business units: solar, bioenergy, environmental services, information technologies, and industrial engineering and construction (www.abengoa.com).

Mid-Kansas Electric Company LLC
Mid-Kansas Electric Company LLC (www.midkansaselectric.net) is a coalition of six rural electric cooperatives serving in 34 western Kansas counties that organized for the purpose of acquiring the assets of Aquila's Kansas Electric Network. The owners of Mid-Kansas are Lane-Scott Electric Cooperative, Inc., Dighton; Prairie Land Electric Cooperative, Inc., Norton; Southern Pioneer Electric Company, Ulysses (a wholly-owned subsidiary of Pioneer Electric Cooperative, Inc.); The Victory Electric Cooperative Association, Inc., Dodge City; Western Cooperative Electric Association, Inc., WaKeeney; and Wheatland Electric Cooperative, Inc., Scott City. The cooperatives also own Sunflower Electric Power Corporation, a generation and transmission service provider, along with other businesses that provide a wide range of services including water supplies, satellite TV and Internet access, wireless broadband Internet access, cellular telephone service, commercial electrical services and propane delivery services.

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For additional information including video statements, photographs, and frequently asked questions please go to: http://pitch.pe/41636.

Contacts:

Chris Roach	Clare Gustin
Abengoa Bioenergy	Mid-Kansas Electric Company
636-728-0508 phone	785-635-3511 phone