PRIME TECHNOLOGIES, LLC

A COMMERCIAL DEMONSTRATION OF NEW TECHNOLOGY IN CENTRAL SOUTH DAKOTA & THE NORTHERN GREAT PLAINS REGION

An Integrated Complex for the Production of Fuel Ethanol; Wet Distillers’ Byproducts; Specialty Beef Feeding Under Enclosed Conditions; & Environmentally Benign Conversion of Cattle Wastes to Bio-Gas & Bio-Fertilizers

JUSTIFICATION FOR FEDERAL SUPPORT OF FARMER-OWNED VALUE-ADDED PROCESSING COMPLEXES

April 2001
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PART I

PRIME TECHNOLOGIES, LLC

A COMMERCIAL DEMONSTRATION OF ADVANCED TECHNOLOGY FOR THE INTEGRATED PRODUCTION OF FUEL ETHANOL, WET DISTILLERS’ BYPRODUCTS, SPECIALTY BEEF, & BIO-GAS/BIO-FERTILIZERS

A. GENERAL INTRODUCTION & OVERVIEW. The PRIME project in Sully County, SD is now in its third year of development, and on schedule for financial closing in 3rd Q 2001. The PRIME project consortium has invested millions of dollars in the cattle feeding trials, site selection, preliminary design and engineering, and pre-permitting of the $50 - $55 million integrated complex. This commercial demonstration project will be the first of its kind ever built. It will combine a modified 15MM gpy ethanol unit (no protein stillage drying), an enclosed, 25,000-head slatted-floor cattle feedlot, and a state-of-the-art anaerobic digestion/cattle waste treatment system to convert animal wastes into fuels and fertilizers.

- One of the distinguishing features of the commercial demonstration is the fact that the cattle waste treatment system—which will reduce/eliminate odors and soil/water pollution and convert manure to bio-gas and bio-fertilizers—is the equivalent of treating the wastes of a city of more than 350,000 persons (approx. 65,000 head of cattle per year). This has never been done on this scale in the United States. Demonstrating the commercial viability of this technology, on this scale, could offer the cattle feeding, and dairy, industries an economically competitive pathway to compliance with pending environmental regulations.

- The Prime Technologies model proposed in this white paper is a model for independent producers to create both value-added agricultural commodities and open new markets for their value-added products. This proposed model allows the siting of a Prime Technologies unit in communities that do not have access to natural gas pipelines or rail.

- The proposed Prime Technologies model will demonstrate that rural communities can participate in both cattle feeding/finishing and ethanol production where local economies of scale will not allow high production per year ethanol plants to be built.

WHO: PRIME TECHNOLOGIES, LLC (Pierre Renewable Integrated Meat and Energy Technologies, LLC) is a South Dakota Limited Liability Corporation (LLC). Founders of PRIME are Dakota Ag Energy, Inc. (DAE), headquartered in Sioux Falls, SD, and J.E.S. Farms (JES), headquartered in Sully County, SD. PRIME consortium members have developed the project over the past three years, and will
design and engineer, oversee the construction, and startup/operate the complex. At financial closing, South Dakota’s Amendment E requires that the complex be majority owned by a farmer-rancher cooperative.

**WHAT:** PRIME plans to build and operate a commercial demonstration project in Sully County, SD. The integrated complex will include:

- a weather-protected 25,000 head custom feedlot;
- a grain handling and processing center for approximately 8 million bushels of local grain annually;
- a fifteen million gallon per year ethanol unit with wet feed recovery system (without conventional protein drying);
- an anaerobic digestion (AD) unit to treat all animal waste for odor control and bio-gas/bio-fertilizer production;
- a state-of-the art nutrient management and application system for efficient use of the bio-fertilizers, utilizing the on-site irrigation facilities to reduce fossil fuel-based fertilizers and restore soil organic matter; and
- a centralized energy system designed to optimize use of the bio-gas, and reduce fossil energy requirements.

The complex will create approximately 50 full-time, direct, skilled jobs and more than 300 indirect jobs. Employees will be hired locally and provided with the necessary training prior to plant startup.

The complex is expected to be the most environmentally-friendly and efficient cattle feedlot/ethanol unit ever built. By converting waste streams into useable products, substantially reducing energy and capital requirements, and capturing the full value of the wet protein feed from the ethanol unit, PRIME will be economically and environmentally efficient.

**WHERE:** PRIME has an option on 320 acres of land on the JES Farms property in Sully County, SD, located approximately 15 miles north of Pierre, SD. Additional locations are being explored at the present time in both South Dakota and Montana.

**B. PRIMARY BENEFITS AND POTENTIAL FOR REPLICATION.**

**WHY:** Conventional cattle feeding methods are not conducive to the climate conditions of the Northern Great Plains region. The wet, cool spring and fall weather creates adverse mud conditions, and the harsh winters can seriously damage unconfined cattle herds. With this new technology, the cattle are protected from adverse weather conditions. The enclosed, slatted-floor feedlot also allows for efficient collection of the manure; and prevents its contamination by dirt, sand, and water to ensure efficient conversion into energy and fertilizers. This enables control of objectionable odors and prevents soil and water contamination due to manure runoff and buildup.
Both cattle feeding and ethanol production utilize corn as the primary raw material. For economic reasons, they both should be as close to the corn (or equivalent grain) supply as possible. The Wet Distillers’ Byproducts (WDB) remaining from ethanol production is ideal for feeding cattle, and in fact has been shown to be more efficient than conventional ruminant animal rations.

Extensive cattle feeding trials have confirmed that cattle fed a “high saturation” (40% to 50% by volume or higher) WDB diet are approximately 15 percent more efficient than beef fed a conventional diet. External protein supplements can be eliminated and the net cost of gain substantially reduced.

Conventional ethanol plants incur substantial capital and operating expense to dry the protein co-products in order to ship them relatively long distances (primarily to cattle feeders). This is necessary because the wet distillers’ grains will spoil if they are not used right away, and because it is economically prohibitive to ship the high moisture-content feed (90% moisture) long distances. Co-locating a cattle feedlot next to the ethanol unit solves this problem by eliminating the considerable capital, operating, and transportation expense associated with drying the protein co-products.

Since 1996, the basis level on corn (the difference between Chicago Board of Trade and the local cash price) in South Dakota has more than doubled (quadrupled since 1990). It is imperative that South Dakota and the Northern Great Plains Region farmers be able to process raw grains locally as the economic penalties for shipping them to distant markets have become unacceptable.

POTENTIAL FOR REPLICATION. PRIME’s developers have entered into an agreement with the Lower Brule Sioux Tribe, approximately 40 miles south of the Sully site, to explore the feasibility of an identical complex on their lands. They are also meeting with interested persons in Montana, including State government departments, and agricultural officials, to explore the potential for multiple complexes in Montana. PRIME “clusters” (defined as two or three complexes) integrated with a dedicated, state-of-the-art “mini-processing” plant for specialty beef cuts, are envisioned for taking beef from “embryo to end cut”. The goal is to brand a natural beef product of guaranteed quality for national and international markets. In summary, by making possible the first commercial demonstration of this closed-loop process, the PRIME project will make it possible for other similar economic units to be built throughout the region.

C. PROJECT STATUS & TIMETABLE:

CURRENT STATUS: PRIME sponsors have raised the $1.4 million required to complete the Phase II site-specific feasibility studies (October 2000 - April 2001). The PRIME consortium has initiated its work program, and final study results are expected to be complete by May 2001. Included in the Phase II budget is a $402,500
non-recourse loan from the Governor’s Office of Economic Development’s Value-Added Ag Subfund, which was approved by the Board of Economic Development on September 26, 2000. As a result of Senate Democratic Leader Tom Daschle’s efforts, the 106th Congress approved an $800,000 grant to support the final engineering and development of Phase IIIVA of the project, from May - September 2001.

Total farmer-owned cooperative equity of $10 - $15 million will be needed to complete financing in conformance with Amendment E rules. The farmer and rancher-owned cooperative is being organized, and a steering committee/initial board of directors is being formed. Cooperative shares will be offered state- and region-wide in the June – August time frame. Prospective lenders will be competed on a parallel track. Current plans calls for completing negotiations and documentation necessary to allow financial closing of the $50 to $55 million complex by 4th Quarter 2001.

TIMETABLE: Depending upon the actual date of financial closing, initial site preparation can begin prior to winter of 2001. Final engineering, orders of long lead-time equipment, and other preparations will be conducted during the winter months. Actual construction requires approximately 12 months, with startup projected for the end of 2002, or early 2003.

D. PROJECTED FINANCING REQUIREMENTS, REQUEST FOR ASSISTANCE, & PRECEDENTS

OWNERSHIP STRUCTURE - SOURCES & USES OF FUNDS

<table>
<thead>
<tr>
<th>SOURCE OF FUNDS</th>
<th>FUNDS AMOUNT</th>
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<tbody>
<tr>
<td>Farmer-owned cooperative equity[^1]</td>
<td>$13,500,000</td>
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<tr>
<td>PRIME development costs[^2]</td>
<td>$7,500,000</td>
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<tr>
<td>Bank of Cooperatives debt</td>
<td>$23,000,000</td>
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<tr>
<td>Rural Community Innovations[^3]</td>
<td>$10,000,000</td>
</tr>
<tr>
<td>SD State training &amp; startup</td>
<td>$1,000,000</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$55,000,000</strong></td>
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[^1]: 870 cooperative shares @ $15,000/share – farmers/ranchers own 100% of complex
[^2]: To be subordinated to Bank of Cooperatives debt, with principal deferment for one year after startup
[^3]: Subordinated to Bank of Cooperatives debt, P & I repayment starts in Year 5, with five year payout, & fee at closing (to cover RCI development costs for additional projects)
<table>
<thead>
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<th>USE OF FUNDS</th>
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<tr>
<td>Development Costs</td>
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<td>Feedlot system</td>
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<td>Anaerobic digestion system</td>
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<tr>
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<td>$5,000,000</td>
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<tr>
<td>TOTAL</td>
<td>$55,000,000</td>
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**Proposed Vehicle For Federal “Pump Priming” Support.**

Rural Community Innovations (RCI) Grant Proposal

- RCI is a not-for-profit organization headquartered in Huron, SD. Founded in 1996 to support community-based rural economic development.

- RCI is dedicated to improving the quality of life in rural communities by attracting capital to technologically advanced, cost competitive, environmentally sound, and farmer-owned value-added processing activities.

- RCI proposes a multi-year (two to three year), $20 million earmark appropriation from the US Department of Agriculture Supplemental FY2001, or FY 2002, budget to be used to facilitate financing of integrated feedlot/unit unit/anaerobic digestion complexes in the Northern Great Plains region.

- RCI investments would be subordinated debenture instruments, and would be “last money in” to projects that have met strict financial criteria, and have already received their equity and primary debt commitments.

- RCI’s experienced staff would perform independent due diligence of candidate projects. To be eligible for RCI support, all projects must be farmer-owned, and community-based, and must adhere to stringent financial and environmental performance criteria.

- In return for accepting a subordinated position on its loan, RCI would receive a pre-agreed fee at closing. This fee would be sufficient to cover RCI’s due diligence and market development expenses for the placement of additional projects.
It is expected that the $20 million grant will be sufficient to make possible the financing of as many as three to four, $40 – 50 million complexes over the next two to three years. Revenue streams from these projects, beginning in the next five years, should make RCI’s development activities and investments self-sustaining.

**FINANCIAL PROJECTIONS.** Economic analyses to date, based upon 60-month moving average input costs and output prices, indicate a robust and well-insulated financial performance. Current projections show returns ranging from 25 - 30%, or more.

**E. REFERENCES & CONTACTS FOR FURTHER INFORMATION:**

1) **PRIME TECHNOLOGIES Development Group:**
   - David E. Hallberg, CEO, Dakota Ag Energy, Inc., 402.492.9657 (Omaha, NE)
   - Vic Schlesinger, PRIME Project Mgr., 402.572.5649 (Omaha, NE)

2) **PRIME Site Owners:**
   - Pat Tracy, Manager, JES Farms, 605.264.5401

3) **Rural Community Innovations (RCI) Principals:**
   - Dennis Wiese, President/CEO, Huron, SD, 605.530.3471
   - Michael Utter, Advantage One Marketing, LLC, Bozeman, MT, 406.587.5779

4) **State of South Dakota/Governor Bill Janklow:**
   - SD Secretary of Agriculture Larry Gabriel, (Staff— Jon Farris), 605.773.5425
   - Larry Stearns, SD Department of Economic Development, 605.773.5032

5) **Lower Brule Sioux Tribe:**
   - Cy Maus, Infrastructure Development Manager, 605.473.0396

6) **U.S. Senate:**
   - Eric Washburn, Minority Staff Director, Environment & Public Works Committee, 202.224.7842
   - Peter Hanson, Zabrae Valentine, Senator Tom Daschle, 202.224.2321
   - Brian Jennings, Senator Tim Johnson, 202.224.5842
   - Sarah Hagedorn, Senator Conrad Burns, 202.224.2644

7) **U.S. House of Representatives:**
   - Eric Iverson, Congressman Rehberg, 202.225.3211

8) **South Dakota Corn Utilization Council:**
   - Lisa Richardson, Executive Director, 605.334.0100