



EIPHD – Regional Solid Waste Meeting
March 3, 2011

EIRSWD WASTE TO ENERGY PROJECT

WASTE TO ENERGY - SINCE LAST WE MET!

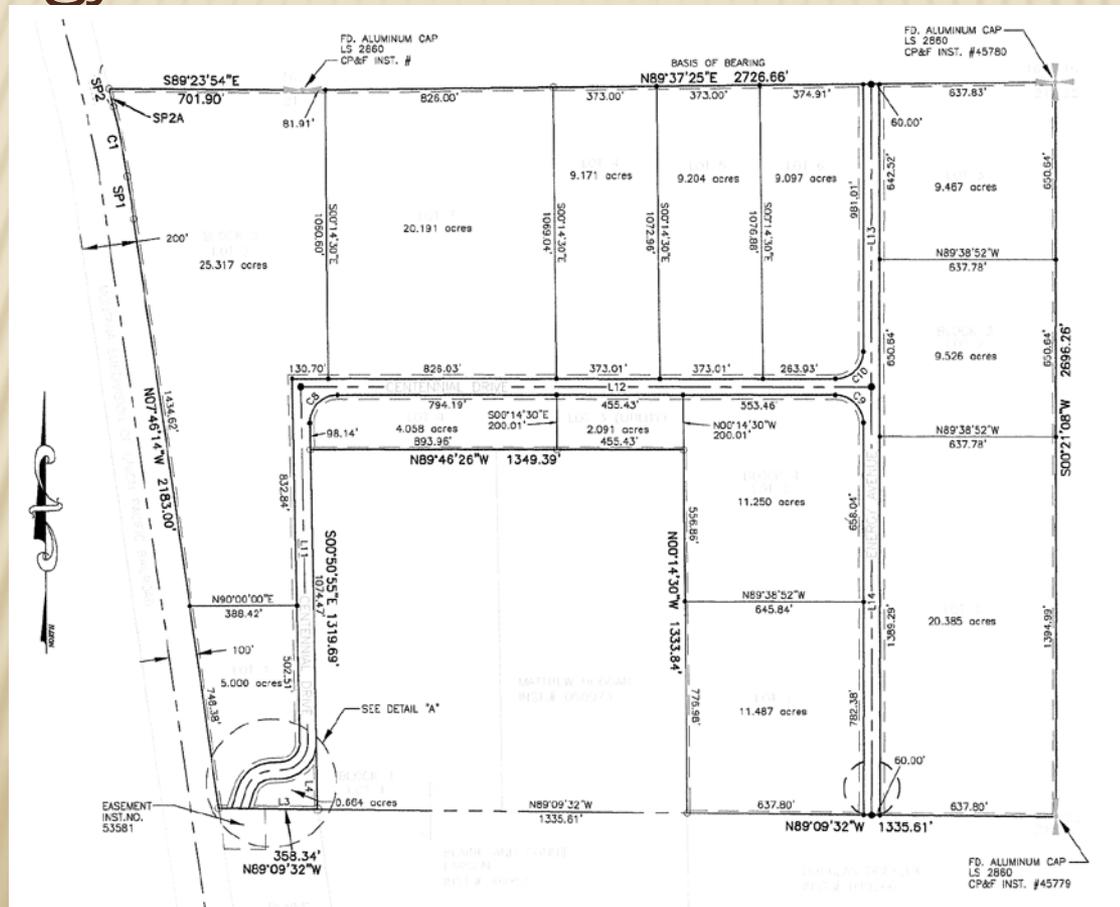
- × Eastern Idaho Regional Solid Waste District was formed on June 23, 2010.
 - + Includes: Clark, Bonneville, Madison, and Fremont
 - + Board Members:
 - × Bill Frederiksen – President, Clark County
 - × Lee Staker, Vice President, Bonneville County
 - × Jon Weber, Madison County
 - × Lee Miller, Fremont County
- × Precision Systems Engineering – Independent Technology Analysis
 - + Barrow Alaska Plant Visit – July 2010
 - + Draft Report – September 2010
 - + Final Report – October 2010
- × Clark County Waste to Energy Feasibility Study was completed October 2010.

WASTE TO ENERGY - SINCE LAST WE MET!

- × EIRSWD Counties have signed Waste Flow Ordinances (Madison in progress)
- × EIRSWD has signed Waste Acceptance Agreements with Counties
- × PacifiCorp (Rocky Mountain Power) and EIRSWD are in the interconnection process.
 - + Feasibility Study Complete
 - + Systems Impact Study Complete
 - + Facility Impact Study – In process

WASTE TO ENERGY - SINCE LAST WE MET!

- Site Selection Lot 3 of Block 2 in the Centennial Energy Park in Dubois Idaho



WASTE TO ENERGY - SINCE LAST WE MET!

- × Power Purchase Agreement between PacifiCorp and EIRSWD in final stages
 - + 10 average MW per hour
 - + Shaped Power output
 - × 13,5 MWH during High Load Hours
 - × 3 MWH during Low Load Hours
 - × Average price per MWH over 20 years \$102.38

WASTE TO ENERGY - SINCE LAST WE MET!

- × Air Permit - Being Prepared for Submittal
 - + Lot Identified
 - + Topography Survey
 - + Site Plan
 - + Air Model
 - × Air Model Process approved by IDEQ as part of the Ada County Air Permit Submittal
 - + Definition of Homogenous Waste
 - × Final Definition issued last week by EPA
 - × Decision to decide who will make the decision
 - + Emission Amounts –
 - × 100 Tons Per Year Limit for Small Quantity
 - × 16 Tons per year – good news
 - + Public Hearing

WASTE TO ENERGY - SINCE LAST WE MET!

- × Contract to Design and Build a 330 Ton Per Day Waste to Energy Plant between the EIRSWD and Dynamis Energy, LLC was signed in Boise on Wednesday, February 9, 2011.
- × Contract Price - \$58,875,806
- × Additional Budget Items –
 - + Project Development and Lot Purchase ~\$1,000,000
 - + Fremont County Transfer Station ~\$1,000,000

WASTE TO ENERGY - SINCE LAST WE MET!

× Funding

- + Zion's Bank chosen as Finance Advisor
- + Stephanie Bonney Bond Attorney
- + Two Options
 - × EIRSWD Revenue Bonds 100 % Financing 25 Yr Term
 - × Third Party Ownership – at least 5 years
 - * IRS 1603 Grant 30% of Price
 - * Sale of Tax Credits ~ 15-20% of the Price
 - * Bonds remain 50%
- + Zion's Bank is developing decision points on financing for EIRSWD
- + RFPs for Financing to be issued

BARROW ALASKA VISIT – JULY 2010



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PSE INDEPENDENT ANALYSIS FINDINGS

× Barrow Plant

- + “In PSE’s opinion, the Barrow, Alaska TOS Plant incorporates much of the basic Dynamis technology that will be used in the EIRSWD Waste to Energy Facility. The Barrow, Alaska TOS Plant began operation in 1996 and has processed a wide variety of municipal waste almost continuously since that time. It is PSE’s opinion that such an operating record is indicative of a robust and flexible technology that is likely to be equally operable when applied to the EIRSWD Facility.”

PSE INDEPENDENT ANALYSIS FINDINGS

- × “Dynamis has stated that they believe they have incorporated improvements in the Dynamis Energy 3.0 thermal oxidation system (TOS) technology compared to the technology used at the Barrow TOS Plant that the new design is patentable. Of the modifications that PSE is aware of, we believe the most critical to the operation of the EIRSWD Facility is the redesign of the PGC ash removal system.”

PSE INDEPENDENT ANALYSIS FINDINGS

- × “The Barrow TOS Plant does not produce electricity. The hot flue gases from the SCS exit directly to the stack at 2,000+ °F. This is an uncomplicated design from an operational perspective. The EIRSWD Plant will use the energy contained in the hot flue gas from the SCS to produce steam that will drive a turbine-generator sets. Fluctuations in the energy content of the MSW loaded into the PGCs are to be expected. These fluctuations are addressed by the control system and by the addition of additional heat injected into the SCS as needed by propane fired units; this design controls the temperature of the flue gas to the boilers which reduces fluctuations in the steam rate going to the turbine-generator to stabilize power production.”

PSE INDEPENDENT ANALYSIS FINDINGS

- × “The Barrow TOS Plant was designed to process 30 tons per day of MSW. The EIRSWD Facility will be designed to process 250 tons per day of MSW. [*The Barrow Plant uses two 15 ton PGCs; the 330 ton capacity plants use 16 15 ton PGCs.*] Much of the capacity scale-up will be handled by the use of multiple PGCs arranged in two parallel and independent processing trains. While the PGCs are essentially the same size the SCS will be scaled up from 30 tons per day to 165 tons per day. From an engineering perspective, scale-up is a non-linear process and is therefore an area where unanticipated problems may develop.”

PSE INDEPENDENT ANALYSIS FINDINGS

- × “PSE considers the EISWD facility to be the first installation using the Dynamis Energy 3.0 thermal oxidation system technology. Dynamis may have one or two plants in operation before the start-up of the EISWD’s facility, but the time between start-ups is likely to be short enough that there will be no opportunity to incorporate the experiences of one plant into the design of another. There are many factors in the operation of a plant this complex that cannot be foreseen. For this reason, PSE believes the EIRSWD will be exposed to some risk.”

PSE INDEPENDENT ANALYSIS FINDINGS

× Design Heat and Material Balances

- + PSE and Dynamis Agree BTU Values = 14-15 MWH

× Ash

- + “PSE suggests that Dynamis provide the EIRSWD with analytical analyses of ash that support the assumption of complete combustion.”

- + TCLP Analysis was conducted on the Ash in support of the Independent Analysis all samples were below limits except 2 – slightly high chromium .6 – 1.7 mg/l

PSE INDEPENDENT ANALYSIS FINDINGS

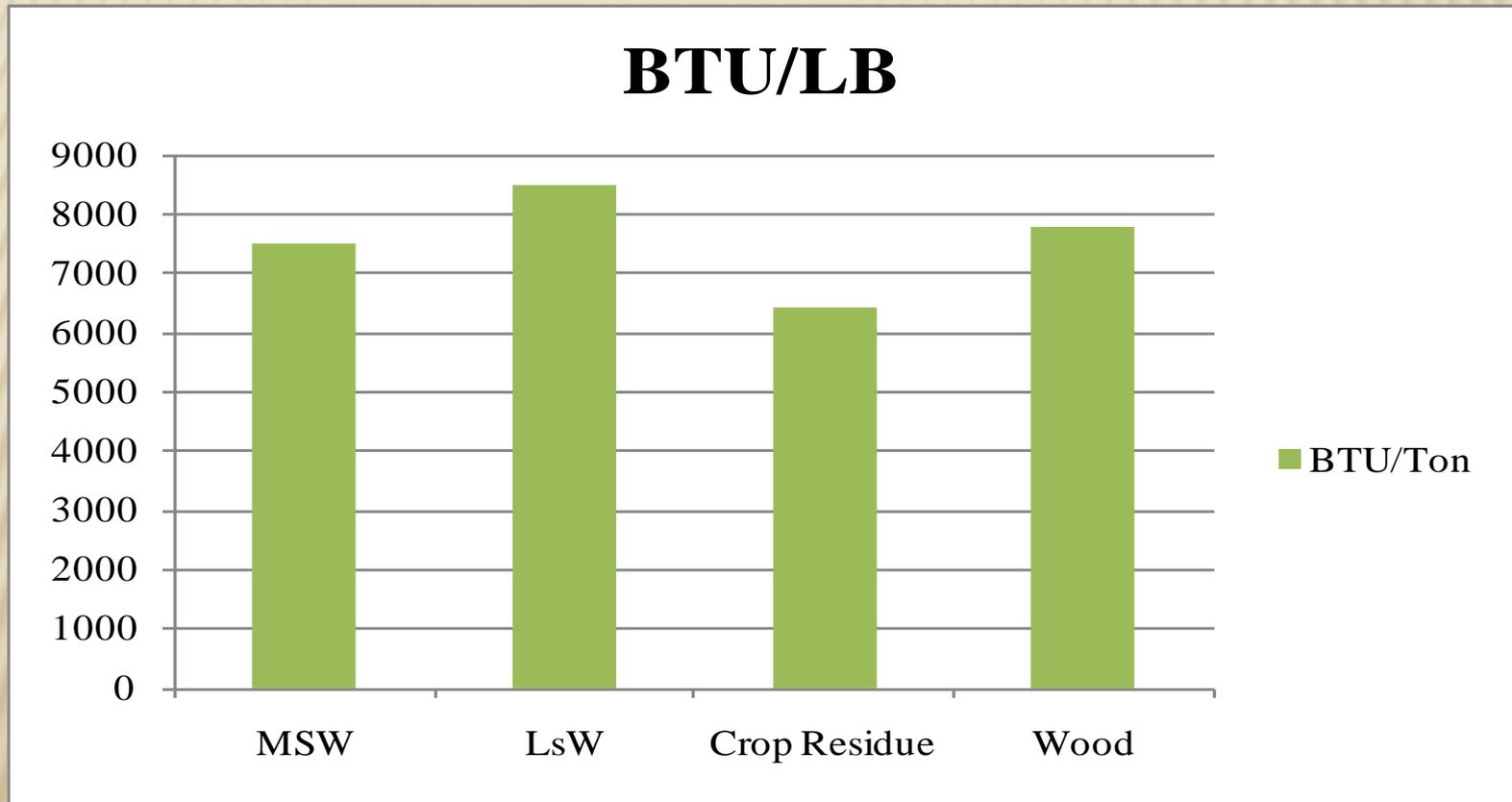
× Summary Statement:

- + “Subject to these areas of uncertainty and further subject to the detail of the information provided to PSE by Dynamis, PSE believes that the Dynamis technology, is feasible and has a reasonable likelihood of being operable.”

WASTE TO ENERGY FEASIBILITY STUDY

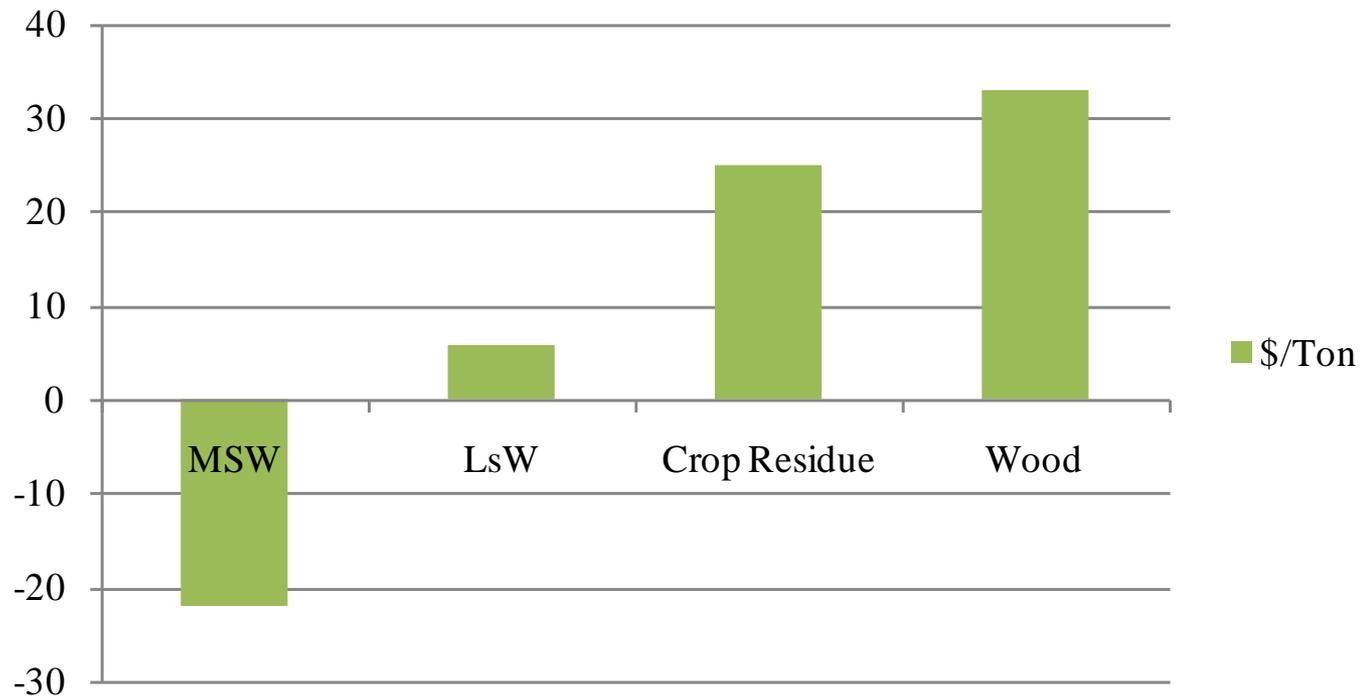
- × An assessment of the volume of municipal solid waste (MSW) available in the region.
- × An assessment of the volume and types of potential agricultural waste available in the region.
- × An assessment of the woody biomass feedstock availability in the region.
- × The conceptual design of a thermo-chemical technology facility that can process approximately 250 tons per day of MSW.
- × A discussion of the market(s) for the electricity.
- × A discussion of the facility site location considerations, permitting requirements, and utility issues.
- × Conclusions and subcontractor recommendations including cost effectiveness, barriers, risks, and financing options.

WASTE TO ENERGY FEASIBILITY STUDY



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Biomass Price Comparison



WASTE TO ENERGY FEASIBILITY STUDY

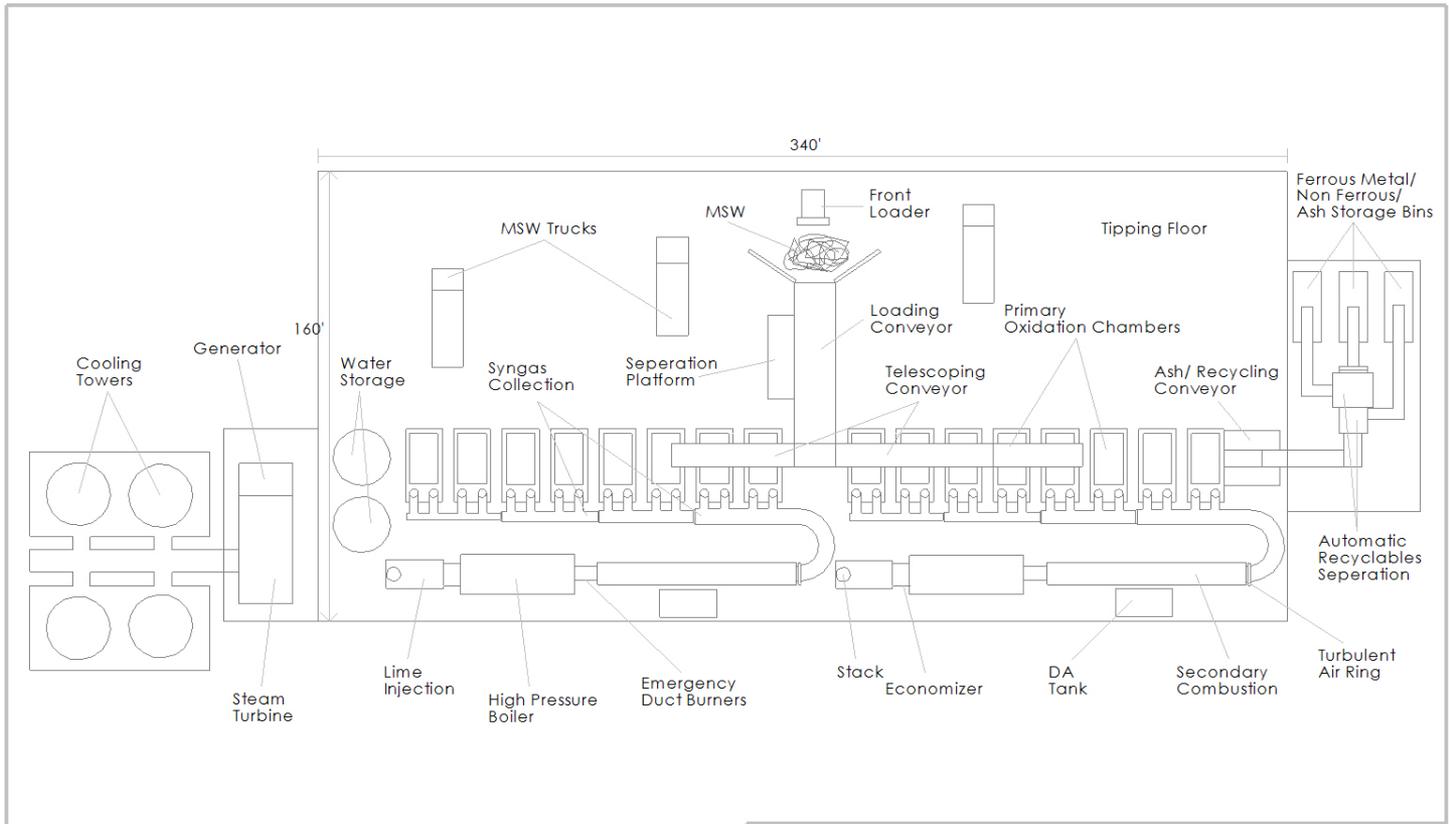
× Conclusion

- + There is sufficient Biomass in the region to support a waste to energy facility.
- + The price of electrical power in the region is low in comparison to other areas of the nation.
- + Waste to Energy facilities are only feasible for Municipal Solid Waste as a biomass fuel.
- + The keys to successful funding of a Waste to Energy Facility is fuel supply (20 yr) and power purchase agreements (20 yr).

WASTE TO ENERGY PLANT



WASTE TO ENERGY PLANT



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UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN MILLIMETERS SURFACE FINISH: TOLERANCES: LINEAR: ANGULAR:		FINISH:	DRILL AND BREAK SHARP EDGES	DO NOT SCALE DRAWING	REVISION
DRAWN: SMT	SIGNATURE:	DATE: 1/27		TITLE: Clark County Layout	
CHKD:				DRAWING: Clark 2011 R20 Rev A3	
APP'D:				SCALE: 1"	SHEET 1 OF 1
MFG:			MATERIAL:		
D.A.:			WEIGHT:		

WASTE TO ENERGY PLANT

