

LIGNITE RESEARCH COUNCIL MEETING

Financial Summary for July 23, 2009 Meeting
2007-2009 Biennium

Program Funding Area	Available Funding Summary	
	as of 7/1/2007	as of 7/23/2009
Administration	\$400,000	\$40,793
Litigation	\$500,000	\$416,621
Non-matching Feasibility Studies	\$1,000,000	\$1,000,000
Small Projects	\$1,296,300	\$695,999
Demonstration Projects	\$9,732,850	\$7,830,801 *
Marketing Projects	\$1,600,000	0

* This amount does not include the commitment of \$16,053,807 over future biennia for the final phases of the CTL, Spirit Energy, and GNPD Projects and \$2,000,000 of the committed non-LV21 Projects.

Administration Budget Detail

Financial Summary as of July 23, 2009 Meeting

Cash Expenditures

Budget Items	Budget Amount	Amount Spent	Balance
Administration/Litigation	\$900,000	\$442,586	\$457,414
Non-match Feasibility Studies	\$1,760,000	\$550,000	\$1,210,000
Small Research Projects	\$2,159,465	\$1,008,636	\$1,150,829
Marketing Projects	\$2,000,000	\$1,870,000	\$130,000
Demonstration Projects	\$21,558,894	\$4,782,565	\$16,776,329
Total	\$28,378,359	\$8,653,787	\$19,724,572

Administration Budget

Budget Items	Budget Amount	Amount Spent	Balance
NDIC/LRC Expenses/Litigation	\$75,000	\$34,207	\$40,793
Litigation	\$500,000	\$83,379	\$416,621
Technical Advisor	\$325,000	\$325,000	\$0
Total	\$900,000	\$442,586	\$457,414

Non-matching Feasibility Studies Detail

Financial Summary as of July 23, 2009 Meeting

Budget Items	Budget Amount	Amount Spent	Balance
Vision 21 Projects (carryover)	\$760,000	\$550,000	\$210,000
Non-matching Projects	\$1,000,000		\$1,000,000
Total	\$1,760,000	\$550,000	\$1,210,000

Small Research Projects

Financial Summary as of July 23, 2009 Meeting

Budget Items	Estimated Amount
Carry Forward of Obligated Funds	\$863,000
Returned Funds & Commitments	\$19,699
Estimated 07-09 Production	\$1,296,300
Subtotal	\$2,178,999
Less Carry Forward of Obligated Funds	\$863,000
Less 2007-2009 Biennium Obligated Funds	\$620,000
Avail. Uncommitted 2007-2009 Funds	\$695,999

Demonstration Projects

Financial Summary as of July 23, 2009 meeting

2007-2009 Biennium Demonstration Projects Financial Summary

Demonstration Project Summary

<u>Item</u>	<u>Subtotals</u>	
Coal Conversion Tax Revenues	\$1,250,000	
Estimated 2007-2009 Production	\$3,158,800	
Estimated DGC & RT Payments	\$2,437,420	
Returned Funds	\$563,255	
Carryover of "unobligated" funding	\$6,676,326	
Anticipated Borrowing	\$0	
Carryover of Obligated Funds	\$1,473,768	
Subtotal		\$15,559,569
Committed Funds NonLV21	\$5,103,768	see Footnote 2
LV21 Estimated Payments (07-09)	\$2,625,000	see Footnote 1
Subtotal		\$7,728,768
Available Funding-Demonstration Projects		\$7,830,801 see Footnote 2

AVAILABLE FUND SUMMARY TABLE

2007-2009 BIENNIUM - Summary Date July 23, 2009 Meeting

<u>Project Funding Area</u>	<u>Amount</u>		
Adminstration	\$40,793		
Litigation	\$416,621		
Non-matching Feasibility Studies	\$1,000,000		
Small Projects	\$695,999		
Demonstration Projects	\$7,830,801		
Marketing	\$0		
Total			\$9,984,214
Footnote 1		Footnote 2	Future Biennia
Carryforward of Non-LV21			\$2,000,000
Spiritwood	\$1,275,000	Spiritwood	\$75,000
CTL	\$1,350,000 *	CTL	\$8,650,000 *
GNPD Phase 4	\$0	GNPD Phase 4	\$7,328,807
Total	<u>\$2,625,000</u>		<u>\$18,053,807</u>

*Estimated

LIGNITE RESEARCH FUND
Active Projects During 2007-2009 Biennium
Current Summary All Projects - July 23, 2009

	<u>Small Projects</u>	<u>All Projects</u>	<u>LV21 Projects</u>	<u>Non-LV21</u>	<u>Feasibility Studies</u>
Total LRC Funding	\$4,911,581	\$32,499,401	\$19,328,807	\$7,408,013	\$851,000
Total Project Funding	\$43,395,366	\$515,347,679	\$235,317,896	\$235,783,417	
Total Number of Projects	14	29	3	11	1
Funding Ratio Total Project\$ to LRF\$	8.8	15.9	12.2	31.8	

CURRENT SMALL RESEARCH PROJECTS FINANCIAL SUMMARY

Contract Number	Descriptive Title	Priority Area	Contractor	Contract Date	LRF Award	LRF Paid	LRF Balance	Total Project	Active Proj
Research Program Activities									
FY01-XXXVIII-105	Hg Oxidation Catalyst at Coal Creek	Environmental	GRE	3/12/2001	\$92,000	\$92,000	\$0	\$1,268,600	1
FY04-L(50)-124	Enhancing Carbon Sorbent Reactivity in Hg Cor	Environmental	EERC	2/3/2004	\$599,792	\$599,792	\$0	\$5,732,195	1
FY04-L(50)-126	Evaluate of MerCap for Hg Crt'l-Stanton Plant	Environmental	GRE	2/3/2004	\$150,000	\$150,000	\$0	\$843,858	1
FY05-LI(51)-130	Health Implications of Hg-Se Interactions	Environmental	EERC	7/1/2004	\$49,984	\$49,984	\$0	\$153,846	1
FY06-LV-(55)-143	Plains CO2 Reduction Partnership Phase II	Environmental	EERC	12/7/2005	\$720,000	\$680,000	\$40,000	\$21,487,892	1
FY06-LV-(55)-144	Gasification of Lignite F-T	Environmental	EERC	1/4/2006	\$100,000	\$100,000	\$0	\$2,140,380	1
FY06-LVI-(56)-147	Imp. Of Reg. Lignite Marketing Plan	Marketing	LEC	6/14/2007	\$2,400,000	\$1,870,000	\$530,000	\$4,800,000	1
FY07-LIX-150	Review of Regulations/Coal Combustion	Environmental	EERC	6/11/2007	\$11,871	\$11,871	\$0	\$36,000	1
FY07-LIX-151	Upgrade & Refurbishment Slagging Gasifier	Combustion	EERC	6/11/2007	\$127,934	\$127,934	\$0	\$354,000	1
FY07-LXI-152	Effects of Aging on Treated Activated Carbon	Combustion	EERC	6/19/2007	\$40,000	\$30,000	\$10,000	\$120,870	1
FY08-LXII-159	Dem Coal Com. Products-Green RoadBuilding	Byproducts	EERC	1/22/2008	\$125,000	\$100,000	\$25,000	\$377,725	1
FY08-LXII-160	Air Toxics Metals Pro. Affiliates	Environmental	EERC	1/22/2008	\$45,000	\$15,000	\$30,000	\$270,000	1
FY08-LXIV-163	Coal Ash Behavior in Reducing Env. (CABRE)	Environmental	EERC	5/22/2008	\$150,000	\$0	\$150,000	\$2,400,000	1
FY08-LXIV-164	Partnership for CO2 Capture	Environmental	EERC	5/22/2008	\$300,000	\$100,000	\$200,000	\$3,410,000	1
Total Current Small Projects					\$4,911,581	\$3,926,581	\$985,000	\$43,395,366	14

Current Lignite Non-matching Feasibility Study Projects

Total LRF Funding	\$851,000
Total Number of Projects	1

Title	Contractor	Project Amount	Amount Paid	LRF Balance
LMFS-06-39 Lignite Vision 2.1 Project - Phase V	LEC	\$851,000	\$641,000	\$210,000
Total Current LMFS Projects		\$851,000	\$641,000	\$210,000

Current Demonstration Projects

Total LRF Funding	\$26,736,820
Total Project Costs	\$471,101,313
Total Number of Projects	14
Funding Ratio Total Project\$ to LRF\$	17.6

Contract Number	Descriptive Title	Contractor	Contract Date	LRF Grant	LRF Investment	LRF Total	LRF Paid	LRF Balance	Total Project
FY05-LI(51)-133	Ethanol Plant Production	RTE	5/12/2006	\$350,000	\$0	\$350,000	\$275,000	\$75,000	\$78,570,000
FY06-LVII-(57)-148	LV21 Coal-to-Liquids	American Lignite En.	9/29/2006	\$10,000,000	\$0	\$10,000,000	\$1,350,000	\$8,650,000	\$50,000,000
FY06-LVIII-(58)-149	Spirit Energy Power Plant	GRE	2/21/2007	\$2,000,000	\$0	\$2,000,000	\$1,500,000	\$500,000	\$157,017,896
FY07-LXI-153	Phase III-Mercury Control Technologies	EERC	6/10/2007	\$300,000	\$0	\$300,000	\$250,000	\$50,000	\$5,000,000
FY07-LXI-154	Develop. of Biomimetic Membranes for Near-Zer	Carbozyme Inc	8/6/2007	\$260,000	\$0	\$260,000	\$240,000	\$20,000	\$6,311,118
FY07-LXI-155	Activated Carbon Production from ND Lignite	EERC	6/19/2007	\$290,335	\$0	\$290,335	\$290,335	\$0	\$858,517
FY07-LXI-156	Impacts of Lignite Properties on Powerspan's N	EERC	6/19/2007	\$259,678	\$0	\$259,678	\$259,678	\$0	\$610,985
FY07-LXI-157	ND Partnership Canadian Clean Coal Power	BEPC	8/15/2007	\$130,000	\$0	\$130,000	\$90,000	\$40,000	\$260,000
FY07-LXI-158	Demon. WRI Pre-Combustion Mercury Remova	MDU-WRI	9/14/2007	\$188,000	\$0	\$188,000	\$133,500	\$54,500	\$595,000
FY08-LXII-161	LV21 Feasibility project Phase IV	GNPD	1/22/2008	\$7,328,807	\$0	\$7,328,807	\$0	\$7,328,807	\$28,300,000
FY08-LXIII-162	Plains CO2 Reduction Partnership - Phase III	EERC	6/23/2008	\$2,400,000	\$0	\$2,400,000	\$1,632,000	\$768,000	\$136,231,052
FY09-LXV-165	CO2 Capture Demonstration Project	Basin		\$2,700,000	\$0	\$2,700,000	\$0	\$2,700,000	\$5,400,000
FY09-LXV-166	Long-Term Assessment of Catalytic Reduction	SaskPower		\$200,000	\$0	\$200,000	\$0	\$200,000	\$1,050,000
FY10-LXVI-167	App. Waste Heath Recovery Generation	Calnetix, Inc.		\$330,000	\$0	\$330,000	\$0	\$330,000	\$896,745
Total Current Demonstration Projects				\$26,736,820	\$0	\$26,736,820	\$6,020,513	\$20,716,307	\$471,101,313

Current Joint Programs

Total LRF Funding	\$0
Total Project Costs	\$0
Total Number of Projects	0
Funding Ratio Total Project\$ to LRF\$	0.0

Contract Number	Descriptive Title	Priority Area	Contractor	Grant Date	LRF Amount	LRF Paid	LRF Balance	Total Project	Count
Total Current Joint Programs					\$0	\$0	\$0	\$0	0

LIGNITE RESEARCH FUND
SMALL RESEARCH PROJECTS FINANCIAL SUMMARY
 July 1, 1987 - July 23, 2009 Meeting

Total LRF Funding \$16,833,492
 Total Project Funding \$104,176,768
 Total Number of Projects 128
 Funding Ratio LRF to Total Project 6.2

Contract Number	Descriptive Title	Priority Area	Contractor	Contract Date	LRF Award	LRF Paid	LRF Balance	Total Project
Research Program Activities								
LRC-I-2	SynOps '88	Marketing	BDA	8/2/1988	\$10,000	\$10,000	\$0	\$72,750
LRC-I-3	Project CFB	Combustion	EERC	4/9/1989	\$25,000	\$25,000	\$0	\$110,000
LRC-I-4	Coal Drying	Beneficiation	Carbontec	9/12/1988	\$25,000	\$25,000	\$0	\$50,000
LRC-I-5	European Markets	Marketing	UND/EMF	9/20/1988	\$5,000	\$5,000	\$0	\$12,777
LRC-I-6	National Energy Consensus	Marketing	AEAC	8/12/1988	\$10,000	\$10,000	\$0	\$250,000
LRC-I-7	Soil Depth/Rangelands	Reclamation	NDSU/AES	8/2/1988	\$20,730	\$20,730	\$0	\$65,175
LRC-I-8	Underground Coal Gasification	Combustion	EERC	1/13/1988	\$30,000	\$30,000	\$0	\$393,501
LRC-II-9	Project CFB	Combustion	EERC	4/9/1989	\$25,000	\$25,000	\$0	\$110,000
LRC-II-11	Project Sodium	Combustion	EERC	4/9/1989	\$25,000	\$25,000	\$0	\$240,000
LRC-II-12	European Markets	Marketing	UND/EMF	3/6/1989	\$17,500	\$17,500	\$0	\$44,723
LRC-II-13	Economic Analysis	Marketing	NDSU/AES	3/6/1989	\$2,500	\$2,500	\$0	\$5,000
LRC-III-14	Soil Depth/Rangelands	Reclamation	NDSU/AES	6/22/1989	\$14,730	\$14,730	\$0	\$54,175
LRC-III-15	Hot Water Drying	Beneficiation	BNI/MN PWR	6/22/1989	\$70,000	\$70,000	\$0	\$670,000
LRC-III-16	Coal Drying	Beneficiation	Carbontec	6/22/1989	\$10,000	\$10,000	\$0	\$20,000
LRC-III-17	Underground Coal Gasification	Combustion	EERC	8/21/1989	\$34,861	\$34,861	\$0	\$393,362
LRC-IV-18	Hot Water Drying	Beneficiation	BNI	1/26/1989	\$70,000	\$70,000	\$0	\$281,000
LRC-IV-19	Fractionation System	Byproducts	DGC	1/26/1990	\$75,000	\$75,000	\$0	\$1,468,000
LRC-IV-20	Economic Analysis	Marketing	NDSU/AES	1/26/1990	\$4,000	\$4,000	\$0	\$8,572
LRC-V-21	Cresols & Xylenols	Byproducts	DGC	7/6/1990	\$28,000	\$28,000	\$0	\$90,000
LRC-V-22	Soil Depth Requirement	Reclamation	NDSU/AES	7/6/1990	\$14,430	\$14,430	\$0	\$47,505
LRC-VI-25	Project CFB	Combustion	EERC	12/19/1990	\$50,000	\$50,000	\$0	\$1,000,000
LRC-VI-26	Economic Analysis	Marketing	NDSU/AES	12/19/1990	\$4,500	\$4,500	\$0	\$9,422
LRC-VI-27	Marketing of North Dakota Lignite	Marketing	Lignite Coalition	12/19/1990	\$14,297	\$14,297	\$0	\$29,297
LRC-VII-28	Soil Depth/Rangelands	Reclamation	NDSU/AES	6/26/1991	\$16,160	\$16,160	\$0	\$45,571
LRC-VII-29	Mitre/Hybrid Coal	Beneficiation	DGC	6/26/1991	\$60,000	\$60,000	\$0	\$120,000
LRC-VIII-30	Economic Analysis	Marketing	NDSU/AES	12/19/1991	\$5,060	\$5,060	\$0	\$10,282
LRC-VIII-31	Soil Productivity	Reclamation	NDSU/AES	12/4/1991	\$49,483	\$49,483	\$0	\$110,241
LRC-VIII-32	Advanced Processing of Lignite	Beneficiation	MN PWR	12/12/1991	\$25,000	\$25,000	\$0	\$55,000
LRC-VIII-33	SynOps '92	Marketing	LEC	12/18/1991	\$17,500	\$17,500	\$0	\$133,806
LRC-IX-34	Agglomeration and Deposition	Combustion	EERC	8/19/1992	\$200,000	\$200,000	\$0	\$1,200,000
LRC-IX-35	K-Fuel Processing	Beneficiation	BNI/MN PWR	7/8/1992	\$14,750	\$14,750	\$0	\$29,500
LRC-IX-36	Reburning for NOx Control	Combustion	Cyclone Users	7/18/1992	\$205,115	\$205,115	\$0	\$410,230
LRC-X-37	Evaluating Reclaimed Grassland	Reclamation	NDSU/ARS	9/21/1992	\$13,500	\$13,500	\$0	\$51,000
LRC-X-38	Externality Study	Marketing	OTP	9/17/1992	\$15,000	\$15,000	\$0	\$30,000
LRC-X-40	Reclaimed Grassland (climatic)	Reclamation	NDSU/A&RS	12/4/1992	\$5,000	\$5,000	\$0	\$20,000
LRC-XII-43	Multiple-Use Marketing	Byproducts	EERC	12/15/1992	\$10,000	\$10,000	\$0	\$40,000
LRC-XII-44	Soil Productivity	Reclamation	NDSU/LRRC	12/4/1992	\$21,698	\$21,698	\$0	\$88,000
LRC-XIII-46	Additive for Emissions Control	Environmental	NACCO	7/20/1993	\$27,000	\$27,000	\$0	\$54,729
FY94-XIV-47	Air Toxics Emissions Study	Environmental	Batelle	11/11/1993	\$55,000	\$55,000	\$0	\$1,000,919
FY94-XIV-48	Naphthols	Byproducts	DGC	9/14/1993	\$200,000	\$200,000	\$0	\$465,000
FY94-XV-49	Soil Productivity	Reclamation	NDSU/LRRC	1/5/1994	\$21,698	\$21,698	\$0	\$88,000
FY94-XV-50	Soil Depth Requirement	Reclamation	NDSU/LRRC	1/14/1994	\$33,960	\$33,960	\$0	\$67,920
FY94-XV-51	Mitigation of Air Toxics	Environmental	EERC	1/15/1994	\$99,924	\$99,924	\$0	\$380,000
FY94-XV-52	Reburning NOx Engineering Study	Combustion	Cyclone Users	12/30/1993	\$170,985	\$170,985	\$0	\$341,970
FY94-XV-53	Physically Cleaned Lignite	Beneficiation	EERC	1/12/1994	\$14,958	\$14,958	\$0	\$29,958
FY94-XVI-54	ND Lignite Flyash Utilization	Byproducts	EERC	7/6/1994	\$80,000	\$80,000	\$0	\$230,000
FY94-XVI-55	Externalities	Environmental	LEC	7/13/1994	\$250,000	\$250,000	\$0	\$550,000
FY94-XVII-56	IFGT for Air Toxics Control	Environmental	B&W	10/20/1994	\$54,534	\$54,534	\$0	\$109,068
Subtotal Small Projects 2 thru 56					\$2,251,873	\$2,251,873	\$0	\$11,086,453

LIGNITE RESEARCH FUND
SMALL RESEARCH PROJECTS FINANCIAL SUMMARY - Continued
(Continued)

Contract Number	Descriptive Title	Priority Area	Contractor	Contract Date	LRF Award	LRF Paid	LRF Balance	Total Project
Research Program Activities								
FY95-XVIII-57	Physically Cleaned Lignite	Beneficiation	GFAT	1/5/1995	\$85,000	\$85,000	\$0	\$170,000
FY95-XVIII-58	Prime & Nonprime Farmlands	Reclamation	NDSU/LRRC	2/27/1995	\$21,116	\$21,116	\$0	\$42,332
FY95-XIX-59	EEE Evaluation of Lignite Cleaning	Beneficiation	GFAT	6/13/1995	\$51,149	\$51,149	\$0	\$102,649
FY95-XIX-60	Coal Quality Management System	Combustion	MTI	7/5/1995	\$250,000	\$250,000	\$0	\$810,565
FY95-XIX-61	Resource Eval. & Ash Deposition	Combustion	EERC	6/12/1995	\$113,984	\$113,984	\$0	\$379,984
FY95-XX-62	Center for Air Toxics Metals	Environmental	EERC	12/4/1995	\$80,000	\$80,000	\$0	\$3,580,000
FY95-XX-63	Soil & Gypsum use of Flyash	Byproducts	EERC	9/21/1995	\$40,000	\$40,000	\$0	\$120,000
FY96-XXI-64	Metal Adsorbents from Lignite	Beneficiation	GFAT	11/13/1995	\$27,000	\$27,000	\$0	\$54,000
FY96-XXI-65	Resins from DGC's Catechols	Byproducts	DGC	11/15/1995	\$75,000	\$75,000	\$0	\$185,614
FY96-XXIII-66	Asphalt Materials from DGC's Tar Oil	Byproducts	DGC	3/21/1996	\$60,000	\$60,000	\$0	\$150,250
FY96-XXIII-67	Low-NOx Cyclone Barrel	Combustion	Cyclone Users	4/4/1996	\$88,938	\$88,938	\$0	\$177,870
FY97-XXIV-68	Reducing Management Variable	Reclamation	NDSU/LRRC	7/24/1996	\$16,118	\$16,118	\$0	\$32,236
FY97-XXIV-69	Bottom Ash Utilization	Byproducts	Tri-Star, Inc	8/22/1996	\$10,000	\$10,000	\$0	\$20,000
FY96-XXIV-70	Coal Combustion Workshop	Byproducts	EERC	10/2/1996	\$10,000	\$10,000	\$0	\$32,250
FY97-XXV-71	Coal Sampling System	Combustion	BN/MTI	12/3/1996	\$49,720	\$49,720	\$0	\$104,271
FY97-XXV-72	Regional Lignite Energy Marketing Plan	Marketing	LEC	5/6/1997	\$825,000	\$825,000	\$0	\$1,650,000
FY97-XXVI-73	Lignite FBC Ash Flowable Fill	Byproducts	MDU/WRI	12/31/1996	\$37,319	\$37,319	\$0	\$152,632
FY97-XXVII-74	Grassland Management for Diversity	Reclamation	NDSU	5/30/1997	\$46,410	\$46,410	\$0	\$156,060
FY97-XXVII-75	Concrete Admixtures from DGC's Catechol	Byproducts	DGC	3/24/1997	\$28,000	\$28,000	\$0	\$144,000
FY97-XXVII-76	Optimizing Performance of the Heskett C	Combustion	MDU/EERC	5/21/1997	\$55,000	\$55,000	\$0	\$183,000
FY98-XXVIII-77	Gypsum from FGD	Byproducts	En-Rock	9/30/1997	\$23,500	\$23,500	\$0	\$47,000
FY98-XXX-79	Mercury Formation and Fate	Environmental	EERC	4/29/1998	\$120,000	\$120,000	\$0	\$400,000
FY98-XXX-83	Matching Coal Quality & Boiler Operatio	Env/Recla	MTI	4/13/1998	\$260,050	\$260,050	\$0	\$1,227,415
FY99-XXXI-85	Fluid-bed/Asphalt Paving	Combustion	EERC	9/29/1998	\$0	\$0	\$0	\$0
FY99-XXXI-86	Bottom Ash in Road Construction	Byproducts	En-Rock	8/10/1998	\$32,000	\$32,000	\$0	\$69,516
FY99-XXXI-87	Bench-Scale Hg Flyash Interactions	Environmental	EERC	10/16/1998	\$40,000	\$40,000	\$0	\$2,425,641
FY99-XXXI-88	Fish Consumption Survey	Environmental	EERC	11/24/1998	\$39,000	\$39,000	\$0	\$130,000
FY99-XXXII-89	Center for Air Toxics Metals	Environmental	EERC	6/22/1999	\$75,000	\$75,000	\$0	\$3,892,400
FY99-XXXIII-90	MDU Controlled Density Fill	Byproducts	MDU	3/17/1999	\$97,115	\$97,115	\$0	\$358,375
FY99-XXXIII-91	Paste Technology	Byproducts	En-Rock	5/13/1999	\$100,000	\$100,000	\$0	\$400,000
FY99-XXXIII-93	Hg Speciation - Stanton Station	Environmental	EERC	9/23/1999	\$44,000	\$44,000	\$0	\$135,998
FY00-XXXIV-94	Lignite Testing in Hi-Temp Trans. Reacto	Combustion	EERC	7/30/1999	\$249,970	\$249,970	\$0	\$709,970
FY00-XXXIV-95	Pow. Act. C from ND Lignite	Byproducts	EERC	9/8/1999	\$30,000	\$30,000	\$0	\$160,000
FY00-XXXIV-96	Lignite Flyash in Feedlot Surfaces	Byproducts	EERC	7/30/1999	\$116,160	\$116,160	\$0	\$531,360
FY00-XXXIV-97	Lignite in Haulroad Construction	Byproducts	Falkirk	9/9/1999	\$59,426	\$59,426	\$0	\$118,852
FY00-XXXIV-98	Imp. Regional Lignite Marketing Plan	Marketing	LEC	9/10/1999	\$975,000	\$975,000	\$0	\$1,950,000
FY00-XXXV-99	ND Children's Health Study	Environmental	LEC	5/24/2000	\$83,333	\$83,333	\$0	\$250,000
FY00-XXXVI-100	Evaluation of SCR Catalyst Blinding	Environmental	EERC	3/17/2000	\$199,951	\$199,951	\$0	\$733,333
FY00-XXXVI-101	Incremental Moisture Reduction	Beneficiation	GRE	5/9/2000	\$161,000	\$161,000	\$0	\$322,666
FY01-XXXVII-102	Reclaimed Grassland Part 2	Reclamation	NDSU	10/17/2000	\$32,250	\$32,250	\$0	\$111,720
FY01-XXXVII-103	Hg Options at Coal Creek	Environmental	GRE	10/17/2000	\$95,000	\$95,000	\$0	\$190,000
FY01-XXXVII-104	LV 21 Phase II Transmission	Marketing	LEC	10/17/2000	\$140,000	\$140,000	\$0	\$300,000
FY01-XXXVIII-105	Hg Oxidation Catalyst Study at Coal Cre	Environmental	GRE	1/2/2001	\$92,000	\$92,000	\$0	\$1,268,600
FY02-XLII-108	Low- Temperature NOx Reduction	Environmental	EERC	3/14/2002	\$200,000	\$200,000	\$0	\$1,020,000
FY02-XLIV-110	Biomass Impacts on SCR	Environmental	EERC	3/14/2002	\$120,000	\$120,000	\$0	\$400,000
FY02-XLIV-111	Center for Air Toxics Metals-Affiliates Pr	Environmental	EERC	5/9/2002	\$75,000	\$75,000	\$0	\$3,750,000
FY02-XLIV-112	Hg Control Options Phase II at Stanton	Environmental	GRE	3/18/2002	\$80,000	\$80,000	\$0	\$220,000
FY02-XLV -113	Anaerobic Treatment of DGL Stripped G	Environmental	EERC	4/30/2002	\$130,000	\$130,000	\$0	\$380,000
FY02-XLV-114	Mercury Control Tech for Utilities Buring	Environmental	EERC	4/30/2002	\$150,000	\$150,000	\$0	\$833,000
FY02-XLVI(46)-115	Implementation of Regional Lig.Marketin	Marketing	LEC	9/19/2002	\$1,800,000	\$1,800,000	\$0	\$3,600,000
FY03-XLVII(47)-116	Long-Term Monitoring At N.D. Power Pl	Environmental	EERC	9/18/2002	\$129,000	\$129,000	\$0	\$430,000
FY03-XLVIII(48)-117	Hg&Air Toxic Impacts on CCB Disposal	Environmental	EERC	5/30/2003	\$37,500	\$37,500	\$0	\$1,600,000
FY03-XLIX(49)-118	Hg Control At Sask-Power-Field Test	Environmental	EERC	6/24/2003	\$200,000	\$200,000	\$0	\$1,100,000
FY03-XLIX(49)-119	Impact of SCR Catalyst on Hg Oxid in Li	Environmental	EERC	6/24/2003	\$30,000	\$30,000	\$0	\$100,000
FY03-XLIX(49)-120	Pilot-&Full-Scale Demo of Adv Tech for	Environmental	EERC	6/24/2003	\$150,000	\$150,000	\$0	\$1,300,000
FY03-XLIX(49)-121	Lignite Fuel Enhancement: Incremental I	Environmental	GRE	9/11/2003	\$235,626	\$235,626	\$0	\$471,252
FY03-XLIX(49)-122	Thermal Pre-Combustion Hg Removal f	Environmental	MDU	8/7/2003	\$139,403	\$139,403	\$0	\$956,962
FY03-L(50)-124	Enhancing Carbon Sorbent Reactivity in	Environmental	EERC	2/3/2004	\$599,792	\$599,792	\$0	\$5,732,195
FY03-L(50)-125	Lg-Scale Hg Ctrl Field Tests - Oxid Sys	Environmental	EERC	2/3/2004	\$172,500	\$172,500	\$0	\$2,152,767
FY03-L(50)-126	Evaluate of MerCap for Hg Ctrl-Stanton	Environmental	GRE	2/3/2004	\$150,000	\$150,000	\$0	\$843,858
FY03-L(50)-127	Alternative Cover Demo Project at CCS	Environmental	GRE	2/3/2004	\$250,000	\$250,000	\$0	\$500,000
FY03-L(50)-128	Plains CO2 Reduction Partnership (PCC	Environmental	EERC	2/3/2004	\$240,000	\$240,000	\$0	\$2,748,139
FY05-LI(51)-129	Lignite Coal Test - TRIG @ Wilsonville	Combustion	BEP	7/1/2004	\$125,000	\$125,000	\$0	\$250,000
F%05-LI(51)-130	Health Implications of Hg-Se Interaction:	Environmental	EERC	7/1/2004	\$49,984	\$49,984	\$0	\$153,846
FY05-LI(51)-131	Investigation of Hg-Carbon Sorbent Rea	Environmental	EERC	7/1/2004	\$54,000	\$54,000	\$0	\$240,870
FY05-LII(52)-134	Canadian Clean Power Coalition	Combustion	BEP	2/11/2005	\$75,000	\$75,000	\$0	\$150,000
FY05-LII(52)-135	Hg Behavior in CFBC	Environmental	EERC	2/11/2005	\$200,000	\$200,000	\$0	\$1,000,000
FY05-LII(52)-136	CATM	Environmental	EERC	2/11/2005	\$45,000	\$45,000	\$0	\$3,090,000
FY05-LII(52)-137	Hg-Barrier Filter Oxidation	Environmental	UND CHE	3/23/2005	\$15,000	\$15,000	\$0	\$245,000
FY05-LIII(53)-139	Hg-Carbon Interactions	Environmental	EERC	6/10/2005	\$19,500	\$19,500	\$0	\$60,000
FY05-LIV(54)-142	Importance of Hg-Se Interactions	Environmental	EERC	12/9/2005	\$55,000	\$55,000	\$0	\$385,000
FY06-LV(55)-143	Plains CO2 Reduction Partnership Phas	Environmental	EERC	12/7/2005	\$720,000	\$680,000	\$40,000	\$21,487,892
FY06-LV(55)-144	Gasification of Lignite F-T	Environmental	EERC	1/4/2006	\$100,000	\$100,000	\$0	\$2,140,380
FY06-LVI(56)-147	Imp. Reg. Lignite Marketing Plan	Marketing	LEC	6/14/2007	\$2,400,000	\$1,870,000	\$530,000	\$4,800,000
FY07-LIX-150	Review of Regulations/Coal Combustion	Environmental	EERC	6/11/2007	\$11,871	\$11,871	\$0	\$36,000
FY07-LIX-151	Upgrade & Refurbishment Slagging Gas	Combustion	EERC	6/11/2007	\$127,934	\$127,934	\$0	\$354,000
FY07-LXI-152	Effects of Aging on Treated Activated C	Combustion	EERC	6/19/2007	\$40,000	\$30,000	\$10,000	\$120,870
FY08-LXII-159	Dem. Coal Com. Products - Green Road	Byproducts	EERC	1/22/2008	\$125,000	\$100,000	\$25,000	\$377,725
FY08-LXII-160	Air Toxics Metals Pro. Affiliates	Environmental	EERC	1/22/2008	\$45,000	\$15,000	\$30,000	\$270,000
FY08-LXIV-163	Coal Ash Behavior in Reducing Env. (C/F	Environmental	EERC	5/22/2008	\$150,000	\$0	\$150,000	\$2,400,000
FY08-LXIV-164	Partnership for CO2 Capture	Environmental	EERC	5/22/2008	\$300,000	\$100,000	\$200,000	\$3,410,000
Subtotal Projects 57 thru 164					\$14,581,619	\$13,596,619	\$985,000	\$93,090,315

(page 3)

Abbreviation

Name

L/E Coal
DAE
LRRC
MN PWR
MTI
LEC
BNI

Lignite/Electric Coalition
Department of Agriculture Economics
Land Reclamation Research Center
Minnesota Power
Microbeam Technologies Inc.
Lignite Energy Council
BNI Coal, Ltd

Cyc. Users
A&RS
OTP
GRAT
LRF
WRI
GRE

Cyclone Users Group
Animal & Range Sciences Department
Otter Tail Power
Grand Forks Activation Technologies
Lignite Research Fund
Western Research Institute
Great River Energy

Non-Matching Feasibility Studies Summary
LMFS Projects Summary
July 1, 1987 - July 23, 2009 Meeting

Total Funding = \$5,528,949
Grant Awards = 35

	Proposal #	Title	Project Amou	Contractor
LMFS-1	RFP-91-1	Lignite Marketing Feasibility Study	\$180,605	J.E. Sinor Consultants, Inc.
LMFS-3	RFP-92-1	Lignite Upgrading Feasibility Study	\$100,000	Bechtel Corporation
LMFS-4	RFP-92-2	Lignite Transportation Study	\$51,459	Corporate Strategies, Inc.
LMFS-5	RFP-92-3	Upgraded Lignite Market Assessment Study	\$35,000	Bechtel Corporation
LMFS-6	RFP-92-6	Lignite Energy Conversion Technology Study	\$90,000	Bechtel Corporation
LMFS-7	RFP-92-4	Lignite Generation Transportation Study	\$32,000	ABB Power T&D Company
LMFS-8	RFP-92-7	Lignite Niche Market Study	\$89,900	Charles River Associates
LMFS-9	RFP-92-5	Business Incentives for Lignite Generation	\$17,328	J.E. Sinor Consultants, Inc.
LMFS-10	RFP-94-2	Development of Lignite Niche Market Opportunities	\$45,000	J.E. Sinor Consultants, Inc.
LMFS-11	RFP-94-3	Byproduct Marketing Study - Catechols & Naphthols	\$40,000	SRI International
LMFS-12	RFP-94-1	Upgraded Lignite Performance Testing	\$74,951	Babcock & Wilcox
LMFS-13	RFP-94-5	Activated Carbonaceous Adsorbents	\$32,725	Coal Corp. of Victoria
LMFS-14	RFP-94-6	Activated Carbon Production & Testing	\$39,700	Energy & Environmental Research Corp.
LMFS-15	RFP-94-7	Upgraded North Dakota Lignite	\$30,000	EERC
LMFS-16	RFP-94-9	MN Interim Externality Values	\$75,000	Lignite Energy Council
LMFS-17	proj. canceled	SynCoal Combustion Testing	\$0	Center SynCoal Partnership
LMFS-18	RFP-94-11	Commercial Uses for Catechol Derivatives	\$12,000	Dakota Gasification Company
LMFS-19	proj. canceled	SynCoal Combustion Testing	\$0	Center SynCoal Partnership
LMFS-20	RFP-96-1	Marketing RFP Development	\$5,110	Simmons
LMFS-21	RFP-96-1	Regional Marketing Plan	\$190,000	Simmons/Himle Horner
LMFS-22	RFP-96-2	Mercury Emissions	\$44,940	ENSR
LMFS-23	RFP--96-3	Mercury Health Effects	\$90,231	Roth
LMFS-24	RFP-96-4	Mercury Brochure	\$10,000	Simmons
LMFS-25	RFP-97-1	Intermediates and Derivatives from Phenol	\$30,000	Chemical Market Resources
LMFS 98-26		Kyoto Impact on Agriculture in ND, SD, MN	\$27,200	NDSU/ U of MN
LMFS-98-27	proj. canceled	Hg Fish Consumption Study	\$0	UND School of Medicine
LMFS 98-28		Marketing Feasibility Study Update	\$50,000	Sinor Consultants
LMFS 99-29		Evaluation of Rammed-Earth Abode	\$35,800	EERC
LMFS-99-30		Alt. Lignite Extraction Technologies	\$30,000	Dakota Gasification Company
LMFS-99-31		Lignite Vision 21 Project - Phase I	\$132,000	LEC
LMFS-99-32		Env. Enhancements Vision 21 Project	\$50,000	RDI
LMFS-99-33		Vision 21 Transmission Study	\$75,000	ABB Power T&D Company
LMFS-00-34		LV 21 Phase II	\$500,000	LEC
LMFS-02-35		LV 21 Phase III	\$1,300,000	LEC
LMFS-04-36	RFP-04-1	Lignite-Fired Ethanol Plant Feasibility Study	\$50,000	BBI International
LMFS-04-37	LV21 Ph IV	LV21 Phase IV	\$982,000	LEC
LMFS-06-38		Future Gen	\$130,000	EERC
LFS-07-39		LV21 Phase V	\$851,000	LEC

Total All Projects \$5,528,949

**DEMONSTRATION PROJECTS FUNDING
Funding Summary - As of July 23, 2009 Meeting**

	<u>All Projects</u>	<u>LV 21 Projects</u>	<u>Non-LV 21 Projects</u>
Total LRF Funding	\$39,789,082	\$22,211,409	\$21,777,673
Total Project Funding	\$603,903,642	\$240,841,371	\$363,062,271
Total Number of Projects	30	8	22
Funding Ratio LRF to Total Project	15.2	10.8	16.7

Non-LV 21 Projects

Contract Number	Descriptive Title	Contractor	Contract Date	LRF Grant	LRF Investment	LRF Total	LRF Paid	LRF Balance	Total Project	Count
LRC-XI-41	Proposal Preparation MRY Unit 3	BNI Coal, Ltd.	12/9/1992	\$150,000	\$0	\$150,000	\$150,000	\$0	\$970,000	1
LRC-XII-42	Proposal Preparation Liquid Fuels	DGC	12/11/1992	\$150,000	\$0	\$150,000	\$150,000	\$0	\$355,000	1
LRC-D-96-2	Anhydrous Ammonia Production	DGC	11/1/1996	\$8,100,000	\$0	\$8,100,000	\$8,100,000	\$0	\$112,928,729	1
LRC-D-96-3	Anhydrous Ammonia Production	DGC	12/4/1996	\$0	\$4,200,000	\$4,200,000	\$4,200,000	\$0	\$0	0
FY98-XXIX-80	Forced Oxidation for Gypsum Production	GRE	6/11/1999	\$54,150	\$0	\$54,150	\$54,150	\$0	\$216,600	1
FY98-XXIX-82	Riverdale Haulroad	Falkirk	4/1/1998	\$298,000	\$0	\$298,000	\$298,000	\$0	\$1,189,230	1
FY98-XXX-84	Lignite Testing in HiTemp Adv. Furn	EERC	8/11/1998	\$262,510	\$0	\$262,510	\$262,510	\$0	\$7,000,000	1
FY99-XXXIII-92	Variable Speed Fans - LOS	LOS-Basin	5/13/1999	\$180,000	\$0	\$180,000	\$180,000	\$0	\$384,000	1
FY05-LI(51)-132	Lignite Enhancement-Dry Process Cleaning	Falkirk	7/1/2004	\$250,000	\$0	\$250,000	\$250,000	\$0	\$1,331,035	1
FY05-LI(51)-133	Ethanol Production -CFBC Process	Red Trail Energy	5/12/2006	\$350,000	\$0	\$350,000	\$275,000	\$75,000	\$78,570,000	1
FY05-LIII-(53)-138	Field Demo Sorbent Injection-Hg Control	ALSTOM	10/1/2005	\$200,000	\$0	\$200,000	\$200,000	\$0	\$1,584,260	1
FY05-LIII-(53)-140	Activated Char Production from ND Lignite	EERC	6/10/2005	\$250,000	\$0	\$250,000	\$250,000	\$0	\$770,000	1
FY05-LIV-(54)-141	Lignite Test at a CFBC	BEPC	12/5/2005	\$275,000	\$0	\$275,000	\$275,000	\$0	\$550,000	1
FY07-LXI-153	Phase III-Mercury Control Technologies	EERC	6/10/2007	\$300,000	\$0	\$300,000	\$250,000	\$50,000	\$5,000,000	1
FY07-LXI-154	Develop.of Biomimetic Membranes for Nea	Carbozyme Inc	8/6/2007	\$260,000	\$0	\$260,000	\$240,000	\$20,000	\$6,311,118	1
FY07-LXI-155	Activated Carbon Production from ND Lign	EERC	6/19/2007	\$290,335	\$0	\$290,335	\$290,335	\$0	\$858,517	1
FY07-LXI-156	Impacts of Lignite Properties on Powerspa	EERC	6/19/2007	\$259,678	\$0	\$259,678	\$259,678	\$0	\$610,985	1
FY07-LXI-157	ND Partnership Canadian Clean Coal Pow	BEPC	8/15/2007	\$130,000	\$0	\$130,000	\$90,000	\$40,000	\$260,000	1
FY07-LXI-158	Demon. WRI Pre-Combustion Mercury Rer	MDU-WRI	9/14/2007	\$188,000	\$0	\$188,000	\$133,500	\$54,500	\$595,000	1
FY08-LXIII-162	Plains CO2 Reduction Partner. - Phase III	EERC	6/23/2008	\$2,400,000	\$0	\$2,400,000	\$1,632,000	\$768,000	\$136,231,052	1
FY09-LXV-165	CO2 Capture Demonstration Project	Basin		\$2,700,000	\$0	\$2,700,000	\$0	\$2,700,000	\$5,400,000	1
FY09-LxV-166	Long-term Assessment of Selective Cataly	SaskPower		\$200,000	\$0	\$200,000	\$0	\$200,000	\$1,050,000	1
FY10-LXVI-167	App. Of Waste Heat Recovery Generation	Calnetix		\$330,000	\$0	\$330,000	\$0	\$330,000	\$896,745	1
SubTotal				\$17,577,673	\$4,200,000	\$21,777,673	\$17,540,173	\$4,237,500	\$363,062,271	22

LV 21 Projects

Contract Number	Descriptive Title	Contractor	Contract Date	LRF Grant	LRF Investment	LRF Total	LRF Paid	LRF Balance	Total Project	Count
FY01-XL-106	GRE Lignite Vision 21 Project	Great River Energy	7/13/2001	\$211,409	\$0	\$211,409	\$211,409	\$0	\$211,409	1
FY01-XLI-107	Gascoyne Project	MDU/Westmoreland	9/17/2001	\$0	\$0	\$0	\$0	\$0	\$0	1
FY01-XLIII-109	Great Northern Properties LV 21 Ph I	GNPD	11/1/2001	\$673,250	\$0	\$673,250	\$673,250	\$0	\$1,345,600	1
FY01-XLIII-123	Great Northern Properties LV 21 Ph II	GNPD	2/10/2005	\$687,500	\$0	\$687,500	\$687,500	\$0	\$1,345,600	1
FY06-LV-(55)-146	LV21 Project Phase III South Heart	GNPD	6/12/2006	\$1,310,443	\$0	\$1,310,443	\$1,310,443	\$0	\$2,620,866	1
FY06-LVII-(57)-148	LV21 Coal-to-Liquids	American Lignite Energy	9/29/2006	\$10,000,000	\$0	\$10,000,000	\$1,350,000	\$8,650,000	\$50,000,000	1
FY06-LIII-(58)-149	Spirit Energy Power Plant	GRE	2/21/2007	\$2,000,000	\$0	\$2,000,000	\$1,500,000	\$500,000	\$157,017,896	1
FY08-LXII-161	LV 21 Feasibility Project Phase IV - EBDD	GNPD	1/22/2008	\$7,328,807	\$0	\$7,328,807	\$0	\$7,328,807	\$28,300,000	1
SubTotal				\$22,211,409	\$0	\$22,211,409	\$5,732,602	\$16,478,807	\$240,841,371	8

Total				\$39,789,082	\$4,200,000	\$43,989,082	\$23,272,775	\$20,716,307	\$603,903,642	30
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