U.S. Hydropower Resource Assessment
for
Kansas

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ABSTRACT

The Department of Energy is developing an estimate of the hydropower development potential in this country. The Hydropower Evaluation Software (HES) is a computer model that was developed by the Idaho National Engineering Laboratory for this purpose. The HES measures the potential hydropower resources available in the United States, using uniform criteria for measurement. The software was developed and tested using hydropower information and data provided by the Southwestern Power Administration. It is a dBASE menu-driven software application that allows the personal computer user to assign environmental attributes to potential hydropower sites, calculate development suitability factors for each site based on the environmental attributes present, and generate reports based on these suitability factors. This report details the resource assessment results for the state of Kansas.

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U.S. Hydropower Resource Assessment for Kansas

INTRODUCTION

In June 1989, the U.S. Department of Energy initiated the development of a National Energy Strategy to identify the energy resources available to support the expanding demand for energy in the United States. Public hearings conducted as part of the strategy development process indicated that potential hydropower resources were not well defined. As a result, the Department of Energy established an interagency Hydropower Resource Assessment Team to ascertain the hydropower potential. In connection with these efforts by the Department of Energy, the Idaho National Engineering Laboratory designed the Hydropower Evaluation Software (HES), which has been used to perform a resource assessment of the undeveloped hydropower potential in Kansas (as well as several other states). This report presents the results of the hydropower resource assessment for the state of Kansas. Pumped storage hydropower potential is not included.

The HES was developed as a tool to measure hydropower potential by regional power marketing administrations and state energy agencies, because they were the most likely to have and need accurate hydropower information. The HES was not intended to provide precise development factors for individual sites, but to provide regional or state capacity totals. Because the software was developed as a generic measurement tool encompassing national issues, regional and state totals must be considered judiciously; various local issues may skew hydropower potential totals. The information for the resource assessment was compiled from the Federal Energy Regulatory Commission's Hydropower Resource Assessment database and several other sources. Refer to DOE/ID-10338, the User's Manual (Francfort, Matthews, Rinehart, 1991) for the specifics of the software and to DOE/ID-10430, the Status Report (Francfort, Moore,

Rinehart, 1993) for an overview of all resource assessment activities to date.

Model Development

Hydropower Evaluation Software, both a probability-factor computer model and a data base, is a dBASE, menu-driven software application that is intended to be user-friendly. Computer screens and report generation capabilities were developed to meet the needs of users nationwide. The software uses environmental attribute data to generate an overall project environmental suitability factor (PESF) between 0.1 and 0.9, where 0.9 indicates the highest likelihood of development and 0.1 indicates the lowest likelihood of development. Suitability factors depend on environmental attributes of a potential site. They reflect the considerations that (a) environmental concerns can make a potential site unacceptable, prohibiting its development (for a suitability factor of 0.1), or (b) absence of environmental concern can have little or no effect on the likelihood of site development (for a suitability factor of 0.9). A combination of attributes results in a lower suitability factor because multiple environmental considerations reduce the likelihood that a site may be developed to its physical potential.

Model Goal

The goal of the HES is to assemble an accurate resource database of all potential hydropower sites in the United States for use as a planning tool to determine the viable national hydropower potential. Potential hydropower is not limited to the development of new sites; it also includes the development of additional hydropower at sites that currently have hydropower but are not developed to their full potential. This hydropower potential is a source of nonpolluting, renewable energy available to meet the growing power needs of the United States. The HES should make

this goal attainable and help assure a set of uniform criteria for national assessment.

bility nor a developed impoundment or diversion structure.

Dam Status

The effects of environmental attributes vary by dam status. The dam status classifications follow the Federal Energy Regulatory Commission (FERC) standard, which is

- W = Developed hydropower site with power. The total hydropower capacity has not been fully developed. Only the undeveloped capacity is discussed in this report.
- W/O = Developed site without power generation. The site has some type of developed impoundment or diversion structure but no hydropower generating capacity.
- U = Undeveloped site. The site does not have power generation capacity.

ASSESSMENT RESULTS

Summary Results

A total of 18 sites have been identified and assessed for their hydropower potential. The Hydropower Evaluation Software results for site capacities range from 30 kilowatts to 18 megawatts. Most of the sites have potential capacities of under 5 megawatts (Figure 1).

The unadjusted hydropower potential for Kansas was identified as being 153 megawatts. The Hydropower Evaluation Software results lower this estimate 46% to 83 megawatts. The greatest reduction in undeveloped potential occurs at sites with no physical structures present. These undeveloped sites have a Hydropower Evaluation Software estimated capacity of 38 megawatts, a 62% reduction in capacity (Figure 2). The number of sites does not change, only the identified capacity is reassessed (Figure 3).

Figure 1. Number of sites with various capacity potentials.

Figure 2. The Hydropower Evaluation Software identified potential hydropower capacity and the unadjusted potential capacity.

Figure 3. The number of sites with potential hydropower capacity and the total megawatts of potential capacity.

The 18 identified sites are located within 4 river basins. The number of sites per river basin ranges from 1 each in both the Osage River Basin and the Upper Arkansas River Basin to 13 sites in the Kansas River Basin (Figure 4). The Kansas River Basin has the most undeveloped potential hydropower capacity of the river basins within Kansas (Figure 5).

Detailed Results

The appendices contain, in the form of Hydropower Evaluation Software generated reports, detailed information of the potential hydropower capacity in Kansas. The appendices contain the following information:

Appendix A The hydropower capacity summary for Kansas categorizes sites by dam status. The number of sites, unadjusted capacity, and Hydropower Evaluation Software adjusted capacity are provided based on the dam status.

Appendix B The hydropower resource assessment by river basin includes the FERC project number, project name, stream name, dam status, unadjusted capacity, and Hydropower Evaluation Software adjusted capacity for each of the individual sites. Subtotals are provided for each river basin.

Appendix C This is a listing of the project numbers, plant name, stream name, if a site is Federally owned, unadjusted capacity, and Hydropower Evaluation Software adjusted capacity. The sites are grouped by dam status.

Appendix D This section contains a resource database listing for each of the 18 sites in Kansas. Information includes plant, stream, state, county, river basin and owner

Figure 4. Number of sites with potential hydropower capacity in the Kansas river basins.

Figure 5. Potential hydropower capacity in the Kansas river basins.

names; project number; name plate and Hydropower Evaluation Software adjusted capacity ratings; the unit and plant types, dam status; latitude; longitude; and the environmental factors that the Hydropower Evaluation Software uses to determine the project environmental suitability factor.

OBTAINING INDIVIDUAL STATE INFORMATION

Additional copies of the hydropower resource assessment results for individual states are available and can be obtained by writing or calling the National Technical Information Service (NTIS).

Telephone Orders – (703) 487-4650. NTIS sales desk and customer services are available between 8:30 a.m. and 5:00 p.m., Eastern Standard Time.

Fax – (703) 321-8547. Customers may fax their orders to NTIS. These orders may be charged to a

NTIS deposit account, American Express, VISA, or MasterCard.

Mail Orders – Mail orders should be sent to National Technical Information Service, Document Sales, 5285 Port Royal Road, Springfield, VA 22161. Call the sales desk for prices before placing an order.

Method of Payment – Customers may pay for reports (and other NTIS products and services) by (a) credit card (American Express, Visa, or MasterCard); (b) check or money order on a United States bank payable to NTIS; (c) a NTIS deposit account; or (d) by asking to be billed (add \$7.50 per order, United States, Canada, and Mexico, only).

Handling Fee – A \$3.00 handling fee per total order applies to orders from the United States, Canada, and Mexico. Handling charges do not apply to rush order service or pick-up orders.

Postage and Shipping – Orders are shipped first class mail, or equivalent, to addresses in the United States, Canada, and Mexico.

Order Turnaround Time – Orders for technical reports generally are shipped within 2 to

8 days of receipt. For faster service, NTIS offers rush order service.

Rush Order Service – Call 1-800-533-NTIS. In Virginia, Canada, and Mexico call (703) 487-4700. For NTIS rush order service add \$15.00 per item. This guarantees that an order will be processed through NTIS within 24 hours of its receipt. These orders receive immediate, individual attention. The items ordered are delivered by first call mail. Call NTIS for information on rush order service for computer products.

For Help in Tracing an Order – Call (703) 487-4650 and request the customer service option.

ADDITIONAL HYDROPOWER EVALUATION SOFTWARE INFORMATION

Additional information concerning the Hydropower Evaluation Software can be obtained by contacting Ben Rinehart or Jim Francfort at the addresses provided below. Copies of the software

and the User's Manual may also be obtained from these individuals.

Ben Rinehart
Idaho National Engineering Laboratory
P.O. Box 1625
Idaho Falls, ID 83415-3830
(208) 526-1002

Jim Francfort
Idaho National Engineering Laboratory
P.O. Box 1625
Idaho Falls, ID 83415-3875
(208) 526-6787

Information concerning the state of Kansas involvement with the resource assessment or about the identified sites may be obtained by contacting:

Thomas Stiles
Kansas Water Office
Suite 200
109 SW Ninth Street
Topeka, KS 66612-1215
(913) 296-3185

REFERENCES

- Francfort, J. E., S. D. Matthews, and B. N. Rinehart, 1991, *Hydropower Evaluation Software User's Manual*, DOE/ID-10338, Idaho National Engineering Laboratory, Idaho Falls, Idaho.
- Francfort, J. E., K. M. Moore, and B. N. Rinehart, 1993, *Uniform Criteria for U.S. Hydropower Resource Assessment, Hydropower Evaluation Software Status Report*, DOE/ID-10430, Idaho National Engineering Laboratory, Idaho Falls, Idaho.

Appendix A

Hydropower Capacity Summary

DATE: 12/21/93

HYDROPOWER CAPACITY SUMMARY

<u>State</u>	<u>Category</u>	<u>Number of Projects</u>	<u>Name Plate Capacity (KW)</u>	<u>HES Adjusted Capacity (KW)</u>
KS	With Power	1	60	30
	W/O Power	12	52520	45028
	Undeveloped	5	100000	38000
	STATE TOTAL	18	152580	83058
TOTALS	With Power	1	60	30
	W/O Power	12	52520	45028
	Undeveloped	5	100000	38000
GRAND TOTAL		18	152580	83058

Appendix B

Hydropower Resource Assessment by River Basin

HYDROPOWER RESOURCE ASSESSMENT BY RIVER BASIN

FERC Number	Plant Name/ Stream	Dam Stat	Name Plate Rating (KW)	PESF	PESF * KW
** River Basin GRAND-NEOSHO RIVER BASIN					
05191X	ELK CITY DAM ELK R	WO	2000.00	0.90	1800.00
06973X	JOHN REDMOND NEOSHO R	WO	7200.00	0.90	6480.00
09419A	RIVERTON (LOWELL) SPRING R	WO	3600.00	0.50	1800.00
** Subtotal **			12800.00		10080.00
** River Basin KANSAS RIVER BASIN					
KS001	EDWARDSVILLE KANSAS R	U	25000.00	0.10	2500.00
KS002	EUDORA KANSAS R	U	25000.00	0.10	2500.00
KS003	LECOMPTON KANSAS R	U	15000.00	0.10	1500.00
KS004	TECUMSEH KANSAS R	U	15000.00	0.90	13500.00
KS005	TOPEKA KANSAS R	U	20000.00	0.90	18000.00
02644A	KANSAS RIVER (LAWRENCE) KANSAS R	W	60.00	0.50	30.00
05148X	CLINTON DAM WAKARUSA R	WO	2000.00	0.90	1800.00
05189X	WILSON DAM SALINE R	WO	2000.00	0.50	1000.00
06326X	KANOPOLIS SMOKY HILL R	WO	1300.00	0.90	1170.00
08362X	GLEN ELDER SOLOMON R	WO	3500.00	0.90	3150.00
10255X	PERRY DELAWARE R	WO	5000.00	0.90	4500.00
10578X	MILFORD REPUBLICAN R	WO	9120.00	0.90	8208.00

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HYDROPOWER RESOURCE ASSESSMENT BY RIVER BASIN

FERC Number	Plant Name/ Stream	Dam Stat	Name Plate Rating (KW)	PESF	PESF * KW
10673X	TUTTLE CREEK BIG BLUE R	WO	14500.00	0.90	13050.00
** Subtotal **			137480.00		70908.00
** River Basin OSAGE RIVER BASIN					
05186X	MELVERN DAM MARAIS DES CYGNES R	WO	2000.00	0.90	1800.00
** Subtotal **			2000.00		1800.00
** River Basin UPPER ARKANSAS RIVER BASIN					
03412X	OXFORD MILL ARKANSAS R	WO	300.00	0.90	270.00
** Subtotal **			300.00		270.00
*** Total ***			152580.00		83058.00

Appendix C
Kansas (KS) Sites

HYDROPOWER RESOURCE ASSESSMENT BY STATE

FERC Number	Plant Name/ Stream	Fed. Proj	Name Plate Rating (KW)	PESF	KW * PESF
** State Name KS					
** Dam Status: W					
02644A	KANSAS RIVER(LAWRENCE)		60.00	0.50	30.00
	KANSAS R				
* Subsubtotal *					
			60.00		30.00
** Subtotal **					
			60.00		30.00
*** Total ***					
			60.00		30.00

HYDROPOWER RESOURCE ASSESSMENT BY STATE

FERC Number	Plant Name/ Stream	Fed. Proj	Name Plate Rating (KW)	PESF	KW * PESF
** State Name KS					
** Dam Status: WO					
06973X	JOHN REDMOND NEOSHO R		7200.00	0.90	6480.00
03412X	OXFORD MILL ARKANSAS R		300.00	0.90	270.00
05148X	CLINTON DAM WAKARUSA R		2000.00	0.90	1800.00
05186X	MELVERN DAM MARAIS DES CYGNES R		2000.00	0.90	1800.00
05189X	WILSON DAM SALINE R		2000.00	0.50	1000.00
05191X	ELK CITY DAM ELK R		2000.00	0.90	1800.00
06326X	KANOPOLIS SMOKY HILL R		1300.00	0.90	1170.00
08362X	GLEN ELDER SOLOMON R		3500.00	0.90	3150.00
09419A	RIVERTON(LOWELL) SPRING R		3600.00	0.50	1800.00
10255X	PERRY DELAWARE R		5000.00	0.90	4500.00
10578X	MILFORD REPUBLICAN R		9120.00	0.90	8208.00
10673X	TUTTLE CREEK BIG BLUE R		14500.00	0.90	13050.00
* Subsubtotal *			52520.00		45028.00
** Subtotal **			52520.00		45028.00
*** Total ***			52520.00		45028.00

HYDROPOWER RESOURCE ASSESSMENT BY STATE

FERC Number	Plant Name/ Stream	Fed. Proj	Name Plate Rating (KW)	PESF	KW * PESF
** State Name KS					
** Dam Status: U					
KS001	EDWARDSVILLE KANSAS R		25000.00	0.10	2500.00
KS002	EUDORA KANSAS R		25000.00	0.10	2500.00
KS003	LECOMPTON KANSAS R		15000.00	0.10	1500.00
KS004	TECUMSEH KANSAS R		15000.00	0.90	13500.00
KS005	TOPEKA KANSAS R		20000.00	0.90	18000.00
* Subsubtotal *			100000.00		38000.00
** Subtotal **			100000.00		38000.00
*** Total ***			100000.00		38000.00

DATE: 12/21/93

H Y D R O P O W E R   C A P A C I T Y   S U M M A R Y

<u>State</u>	<u>Category</u>	<u>Number of Projects</u>	<u>Name Plate Capacity (KW)</u>	<u>HES Adjusted Capacity (KW)</u>
KS	With Power	1	60	30
	W/O Power	12	52520	45028
	Undeveloped	5	100000	38000
	STATE TOTAL	18	152580	83058
TOTALS	With Power	1	60	30
	W/O Power	12	52520	45028
	Undeveloped	5	100000	38000
GRAND TOTAL		18	152580	83058

Appendix D
Resource Database Listing

R E S O U R C E   D A T A B A S E   L I S T I N G

DATE: 10/05/93

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FERC Number	Plant Name	Stream	State Name
02644A	KANSAS RIVER(LAWRENCE)	KANSAS R	KS

County Name	River Basin
DOUGLAS	KANSAS RIVER BASIN

Class	Owner Name
R	BOWERSOCK MLS AND PWR CO

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
60.00	0.50	30.00	0.00	0

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	3855.00 9512.00
C	ROR	LE	W		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value	Y	0.75
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value	Y	0.75	Federal Land Code 103		0.90
Fish Presence Value	Y	0.75	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.75	Federal Land Code 108		0.90
Scenic Value	Y	0.90	Federal Land Code 198	Y	0.90

RESOURCE DATABASE LISTING

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FERC Number	Plant Name	Stream	State Name
03412X	OXFORD MILL	ARKANSAS R	KS

County Name	River Basin
SUMNER	UPPER ARKANSAS RIVER BASIN

Class	Owner Name
M	OXFORD, CITY OF

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
300.00	0.90	270.00	2010.00	1809

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	0.00 0.00
C	ROR	XX	WO		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or			Threatened/Endangered Fish		0.90
Upstream/Downstream			Threatened/Endangered Wildlife		0.90
Wild/Scenic Location		0.90	Federal Land Code 103		0.90
Cultural Value		0.90	Federal Land Code 104		0.90
Fish Presence Value		0.90	Federal Land Code 105		0.90
Geologic Value		0.90	Federal Land Code 106		0.90
Historic Value		0.90	Federal Land Code 107		0.90
Other Value		0.90	Federal Land Code 108		0.90
Recreation Value		0.90	Federal Land Code 198		0.90
Scenic Value		0.90			

RESOURCE DATABASE LISTING

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FERC Number	Plant Name	Stream	State Name
05148X	CLINTON DAM	WAKARUSA R	KS

County Name	River Basin
DOUGLAS	KANSAS RIVER BASIN

Class	Owner Name
R	SAN JUAN HYDRO INC

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
2000.00	0.90	1800.00	3000.00	2700

Unit Type	Plant Type	Project Status	Dam Status	Latitude	3855.00
C	ROR	XX	WO	Longitude	9520.00

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or			Threatened/Endangered Fish		0.90
Upstream/Downstream			Threatened/Endangered Wildlife		0.90
Wild/Scenic Location	0.90		Federal Land Code 103		0.90
Cultural Value	0.90		Federal Land Code 104		0.90
Fish Presence Value	0.90		Federal Land Code 105		0.90
Geologic Value	0.90		Federal Land Code 106		0.90
Historic Value	0.90		Federal Land Code 107		0.90
Other Value	0.90		Federal Land Code 108		0.90
Recreation Value	0.90		Federal Land Code 198	Y	0.90
Scenic Value	0.90				

RESOURCE DATABASE LISTING

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FERC Number	Plant Name	Stream	State Name
05186X	MELVERN DAM	MARAIS DES CYGNES R	KS
County Name	River Basin		
OSAGE	OSAGE RIVER BASIN		
Class	Owner Name		
R	SAN JUAN HYDRO INC		
Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)
2000.00	0.90	1800.00	3600
Unit Type	Plant Type	Project Status	Dam Status
C	ROR	XX	WO
Latitude	3831.00	Longitude	9542.00
Factor	Exist	Prob	Factor
Wild/Scenic Protection	0.90		Wildlife Value
Wild/Scenic Tributary or			Threatened/Endangered Fish
Upstream/Downstream			Threatened/Endangered Wildlife
Wild/Scenic Location	0.90		Federal Land Code 103
Cultural Value	0.90		Federal Land Code 104
Fish Presence Value	0.90		Federal Land Code 105
Geologic Value	0.90		Federal Land Code 106
Historic Value	0.90		Federal Land Code 107
Other Value	0.90		Federal Land Code 108
Recreation Value	0.90		Federal Land Code 198
Scenic Value	0.90		

RESOURCE DATABASE LISTING

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FERC Number	Plant Name	Stream	State Name
05189X	WILSON DAM	SALINE R	KS

County Name	River Basin
RUSSELL	KANSAS RIVER BASIN

Class	Owner Name
R	SAN JUAN HYDRO INC

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
2000.00	0.50	1000.00	5000.00	2500

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	3858.00 9830.00
C	ROR	XX	WO		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value	Y	0.75
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value	Y	0.75	Federal Land Code 104		0.90
Geologic Value	Y	0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.75	Federal Land Code 108		0.90
Scenic Value	Y	0.90	Federal Land Code 198	Y	0.90

RESOURCE DATABASE LISTING

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FERC Number	Plant Name	Stream	State Name
05191X	ELK CITY DAM	ELK R	KS
County Name		River Basin	
MONTGOMERY		GRAND-NEOSHO RIVER BASIN	
Class		Owner Name	
R		SAN JUAN HYDRO INC	
Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)
2000.00	0.90	1800.00	5000.00
		PESF Annual Energy Rating (MWh)	
		4500	
Unit Type	Plant Type	Project Status	Dam Status
C	ROR	XX	WO
		Latitude	3717.00
		Longitude	9547.00
Factor		Exist Prob	
Wild/Scenic Protection		0.90	
Wild/Scenic Tributary or		Wildlife Value	
Upstream/Downstream		Threatened/Endangered Fish	
Wild/Scenic Location		Threatened/Endangered Wildlife	
Cultural Value		0.90	
Fish Presence Value		0.90	
Geologic Value		0.90	
Historic Value		0.90	
Other Value		0.90	
Recreation Value		0.90	
Scenic Value		0.90	
		Federal Land Code 103	
		Federal Land Code 104	
		Federal Land Code 105	
		Federal Land Code 106	
		Federal Land Code 107	
		Federal Land Code 108	
		Federal Land Code 198	
		Y	
		0.90	

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FERC Number	Plant Name	Stream	State Name
06326X	KANOPOLIS	SMOKY HILL R	KS

County Name	River Basin
ELLSWORTH	KANSAS RIVER BASIN

Class	Owner Name
R	ENERGENICS SYSTEMS INC

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
1300.00	0.90	1170.00	5400.00	4860

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	3837.00 9758.00
C	ROR	XX	WO		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value		0.90	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198	Y	0.90

R E S O U R C E   D A T A B A S E   L I S T I N G

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FERC Number	Plant Name	Stream	State Name
06973X	JOHN REDMOND	NEOSHO R	KS

County Name	River Basin
COFFEY	GRAND-NEOSHO RIVER BASIN

Class	Owner Name
C	KANSAS ELEC PWR COOP, INC

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
7200.00	0.90	6480.00	21600.00	19440

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	3814.00 9545.00
C	ROR	XX	WO		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or			Threatened/Endangered Fish		0.90
Upstream/Downstream			Threatened/Endangered Wildlife		0.90
Wild/Scenic Location		0.90	Federal Land Code 103		0.90
Cultural Value		0.90	Federal Land Code 104		0.90
Fish Presence Value		0.90	Federal Land Code 105		0.90
Geologic Value		0.90	Federal Land Code 106		0.90
Historic Value		0.90	Federal Land Code 107		0.90
Other Value		0.90	Federal Land Code 108		0.90
Recreation Value		0.90	Federal Land Code 198	Y	0.90
Scenic Value		0.90			

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FERC Number	Plant Name	Stream	State Name
08362X	GLEN ELDER	SOLOMON R	KS

County Name	River Basin
MITCHELL	KANSAS RIVER BASIN

Class	Owner Name
R	GLEN ELDER ASSOC

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
3500.00	0.90	3150.00	4800.00	4320

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	3930.00 9819.00
C	ROR	XX	WO		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location	0.90		Threatened/Endangered Wildlife		0.90
Cultural Value	0.90		Federal Land Code 103		0.90
Fish Presence Value	0.90		Federal Land Code 104		0.90
Geologic Value	0.90		Federal Land Code 105		0.90
Historic Value	0.90		Federal Land Code 106		0.90
Other Value	0.90		Federal Land Code 107		0.90
Recreation Value	0.90		Federal Land Code 108		0.90
Scenic Value	0.90		Federal Land Code 198	Y	0.90

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FERC Number	Plant Name	Stream	State Name
09419A	RIVERTON (LOWELL)	SPRING R	KS

County Name	River Basin
CHEROKEE	GRAND-NEOSHO RIVER BASIN

Class	Owner Name			
R	JDJ ENERGY CO			
Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
3600.00	0.50	1800.00	13890.00	6945

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	3703.00 9442.00
C	ROR	MO	WO		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value	Y	0.75
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value	Y	0.75	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.75	Federal Land Code 108		0.90
Scenic Value	Y	0.90	Federal Land Code 198	Y	0.90

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FERC Number	Plant Name	Stream	State Name
10255X	PERRY	DELAWARE R	KS

County Name	River Basin
JEFFERSON	KANSAS RIVER BASIN

Class	Owner Name
R	ALTERNATIVE ENERGY MGMT INC

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
5000.00	0.90	4500.00	14500.00	13050

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	3907.00 9526.00
C	ROR	XX	WO		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value		0.90	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198	Y	0.90

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FERC Number	Plant Name	Stream	State Name
10578X	MILFORD	REPUBLICAN R	KS
County Name	River Basin		
GEARY	KANSAS RIVER BASIN		
Class	Owner Name		
R	PRODEK INC		
Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)
9120.00	0.90	8208.00	33000.00
			PESF Annual Energy Rating (MWh)
			29700
Unit Type	Plant Type	Project Status	Dam Status
C	ROR	XX	WO
Latitude	3905.00		
Longitude	9654.00		
Factor	Exist	Prob	Factor
Wild/Scenic Protection	0.90		Wildlife Value
Wild/Scenic Tributary or			Threatened/Endangered Fish
Upstream/Downstream			Threatened/Endangered Wildlife
Wild/Scenic Location	0.90		Federal Land Code 103
Cultural Value	0.90		Federal Land Code 104
Fish Presence Value	0.90		Federal Land Code 105
Geologic Value	0.90		Federal Land Code 106
Historic Value	0.90		Federal Land Code 107
Other Value	0.90		Federal Land Code 108
Recreation Value	0.90		Federal Land Code 198
Scenic Value	0.90		Y 0.90

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FERC Number	Plant Name	Stream	State Name
10673X	TUTTLE CREEK	BIG BLUE R	KS

County Name	River Basin
RILEY	KANSAS RIVER BASIN

Class	Owner Name
R	TRUTLE CREEK ASSOC

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
14500.00	0.90	13050.00	56690.00	51021

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	3915.00 9635.00
C	ROR	XX	WO		

Factor	Exist Prob	Factor	Exist Prob
Wild/Scenic Protection	0.90	Wildlife Value	0.90
Wild/Scenic Tributary or Upstream/Downstream		Threatened/Endangered Fish	0.90
Wild/Scenic Location	0.90	Threatened/Endangered Wildlife	0.90
Cultural Value	0.90	Federal Land Code 103	0.90
Fish Presence Value	0.90	Federal Land Code 104	0.90
Geologic Value	0.90	Federal Land Code 105	0.90
Historic Value	0.90	Federal Land Code 106	0.90
Other Value	0.90	Federal Land Code 107	0.90
Recreation Value	0.90	Federal Land Code 108	0.90
Scenic Value	0.90	Federal Land Code 198	Y 0.90

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FERC Number	Plant Name	Stream	State Name
KS001	EDWARDSVILLE	KANSAS R	KS

County Name	River Basin
WYANDOTTE	KANSAS RIVER BASIN

Class	Owner Name

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
25000.00	0.10	2500.00	85000.00	8500

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	3901.00 9546.00
C	ROR	ZZ	U		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value	Y	0.25
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value	Y	0.50	Federal Land Code 103		0.90
Fish Presence Value	Y	0.25	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.25	Federal Land Code 108		0.90
Scenic Value	Y	0.50	Federal Land Code 198	Y	0.90

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FERC Number	Plant Name	Stream	State Name
KS002	EUDORA	KANSAS R	KS

County Name	River Basin
DOUGLAS	KANSAS RIVER BASIN

Class	Owner Name

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
25000.00	0.10	2500.00	90000.00	9000

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	3852.00 9517.00
C	ROR	ZZ	U		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value	Y	0.25
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value	Y	0.50	Federal Land Code 103		0.90
Fish Presence Value	Y	0.25	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value	Y	0.25	Federal Land Code 108		0.90
Scenic Value	Y	0.50	Federal Land Code 198	Y	0.90

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FERC Number	Plant Name	Stream	State Name
KS003	LECOMPTON	KANSAS R	KS

County Name	River Basin
JEFFERSON	KANSAS RIVER BASIN

Class	Owner Name

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
15000.00	0.10	1500.00	60000.00	6000

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	3857.00 6512.00
C	ROR	ZZ	U		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value	Y	0.25
Wild/Scenic Tributary or			Threatened/Endangered Fish		0.90
Upstream/Downstream			Threatened/Endangered Wildlife		0.90
Wild/Scenic Location		0.90	Federal Land Code 103		0.90
Cultural Value	Y	0.50	Federal Land Code 104		0.90
Fish Presence Value	Y	0.25	Federal Land Code 105		0.90
Geologic Value		0.90	Federal Land Code 106		0.90
Historic Value		0.90	Federal Land Code 107		0.90
Other Value		0.90	Federal Land Code 108		0.90
Recreation Value	Y	0.25	Federal Land Code 198		0.90
Scenic Value	Y	0.50			

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FERC Number	Plant Name	Stream	State Name
KS004	TECUMSEH	KANSAS R	KS

County Name	River Basin
SHAWNEE	KANSAS RIVER BASIN

Class	Owner Name

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
15000.00	0.90	13500.00	54000.00	48600

Unit Type	Plant Type	Project Status	Dam Status	Latitude Longitude	3904.00 9531.00
C	ROR	ZZ	U		

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or Upstream/Downstream			Threatened/Endangered Fish		0.90
Wild/Scenic Location		0.90	Threatened/Endangered Wildlife		0.90
Cultural Value		0.90	Federal Land Code 103		0.90
Fish Presence Value		0.90	Federal Land Code 104		0.90
Geologic Value		0.90	Federal Land Code 105		0.90
Historic Value		0.90	Federal Land Code 106		0.90
Other Value		0.90	Federal Land Code 107		0.90
Recreation Value		0.90	Federal Land Code 108		0.90
Scenic Value		0.90	Federal Land Code 198	Y	0.90

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FERC Number	Plant Name	Stream	State Name
KS005	TOPEKA	KANSAS R	KS

County Name	River Basin
SHAWNEE	KANSAS RIVER BASIN

Class	Owner Name

Name Plate Rating (KW)	PESF	PESF*KW	Annual Energy Rating (MWh)	PESF Annual Energy Rating (MWh)
20000.00	0.90	18000.00	78000.00	70200

Unit Type	Plant Type	Project Status	Dam Status	Latitude	3904.00
C	ROR	ZZ	U	Longitude	9549.00

Factor	Exist	Prob	Factor	Exist	Prob
Wild/Scenic Protection		0.90	Wildlife Value		0.90
Wild/Scenic Tributary or			Threatened/Endangered Fish		0.90
Upstream/Downstream			Threatened/Endangered Wildlife		0.90
Wild/Scenic Location		0.90	Federal Land Code 103		0.90
Cultural Value		0.90	Federal Land Code 104		0.90
Fish Presence Value		0.90	Federal Land Code 105		0.90
Geologic Value		0.90	Federal Land Code 106		0.90
Historic Value		0.90	Federal Land Code 107		0.90
Other Value		0.90	Federal Land Code 108		0.90
Recreation Value		0.90	Federal Land Code 198	Y	0.90
Scenic Value		0.90			

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