

ENERGY RESOURCE MANAGEMENT STRATEGY

ENERGY RESOURCE MANAGEMENT STRATEGY

Introduction	1
Authorities and Responsibilities	1
Inventory of Energy Resources	2
General	2
Oil and Gas	2
Coal and Lignite	2
Underground Coal Gasification (UCG)	3
Coalbed Methane (CBM)	4
Hydropower	4
Geothermal	4
Wind	4
Development Issues	4
Land Use Conflicts	4
Environmental Conflicts	4
Location	4
Energy Management Strategy	4
Risk Management	5
Capital Risk	5
Partnering	5
Diversification	5
Royalty Type	5
Disposal of Trust Energy Resources	5
Oil and Gas	6
Coal	7
Underground Coal Gasification	7
Wind Energy	8
Hydroelectric Energy	8
Geothermal Energy	8
Goals and Objectives	9

Introduction

Energy resource development decisions made today will impact the Trust and its beneficiaries for generations to come. Accordingly, a profound energy resource management strategy and a sound resource policy are required to enable economic growth on Trust lands.

Energy revenue has potential to be a major source of financial contribution to the Trust. Trust lands have significant potential for traditional energy resources (oil & gas, coal). Some natural gas production has already been realized, principally from natural gas on the Kenai and in West Cook Inlet. The importance of that production is growing as more wells are drilled. New discoveries are essential for the continuing growth in Trust land oil & gas production. Such growth is critical to retain the Trust's capacity to generate revenue to fund Trust beneficiary programs. While extensions to existing projects will continue to support production volumes, exploration for new discoveries are urgently required to ensure that an ongoing pipeline of energy projects are available to meet future demands.

Authorities and Responsibilities

The Alaska Mental Health Enabling Act of 1956 provided the Trust with a land endowment of one million acres. Specific to that grant is the statement in Sec. 202(c) that "all grants made or confirmed under this section shall include mineral deposits" subject to prior existing rights. It is inherent in the enabling act that the minerals were to be conveyed with the land in order to be utilized by the Trust. Today, the Trust finds itself with a mixture of lands, some of which are owned fee simple (meaning the Trust owns both surface and subsurface rights), while other holdings are mineral rights only, hydrocarbon rights only, or surface rights only.

Management of Trust lands is guided by Title 11, Chapter 99 of the Alaska Administrative Code. These regulations outline mining rights on Trust land as follows:

11 AAC 99.100 Mining rights

- a. *Rights to locatable minerals on trust land are available only as provided in this section. To the extent that a statute or regulation applicable*

to other state land, including AS 38.05.185, 38.05.195, 38.05.205, and 38.05.245, contains a requirement that provides for or permits the acquisition of mineral rights, rights to prospect, or rights that open land to claim staking, mineral location, or leasehold location, that provision of law is considered inconsistent with 11 AAC 99.020, and does not apply to Trust land.

- b. *The executive director, in consultation with the trust authority, shall open areas of trust land under one or more of the following methods, or under (c) of this section, which the executive director determines to be consistent with 11 AAC 99.020: (1) competitive lease; (2) exploration license; (3) negotiated agreement; (4) prospecting permit; (5) mineral entry; or (6) by other methods that the executive director considered appropriate*
- c. *If an area is not opened for the disposal of rights to locatable minerals under (b) of this section, a person may apply under 11 AAC 99.030 for an authorization to explore and prospect for or lease locatable minerals in that area.*
- d. *Terms and conditions of an authorization under (b) of this section, applicable to mining rights on trust land, shall be developed in consultation with the trust authority.*
- e. *The rent, royalty, and assessment work credit provisions of law applicable to other state land, including AS 38.05.211 and 38.05.212, do not apply to trust land unless determined by the executive director, on a case-by-case basis, to be consistent with 11 AAC 99.020. The determination shall be stated in a written finding.*
- f. *Nothing in this chapter affects valid mineral rights on trust land that existed at the time the land was designated as trust land.*

Under this code, the normal methods of acquiring mining rights on state land do not apply to Trust land. Instead, the TLO executive director will open land for mineral development as dictated under (b) above. The development of minerals must be consistent with the overall general management of Trust lands as outlined in 11 AAC 99.020, which states that "management shall be conducted solely in the best interest of the Alaska mental health trust and its beneficiaries." Mineral exploration, development and production on Trust lands are additionally permitted through the state and federal regulatory agencies.

ENERGY RESOURCE MANAGEMENT STRATEGY

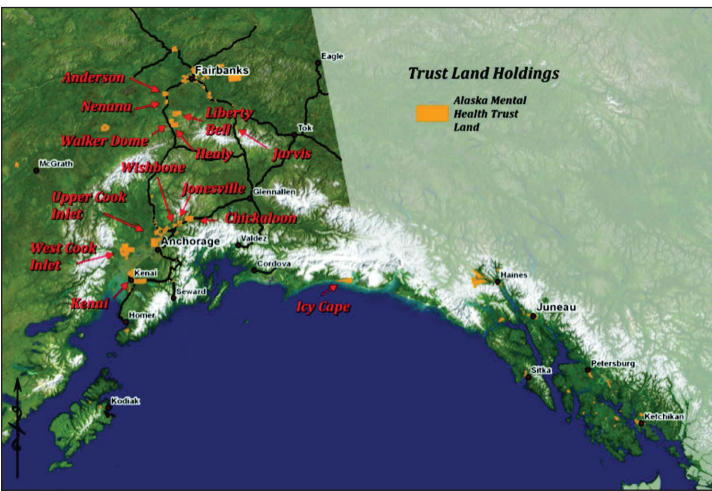
2016 RESOURCE MANAGEMENT STRATEGY

Inventory of Energy Resources

General

The TLO maintains a portfolio of multiple energy resource projects and creates partnerships with companies that fund major exploration work and resource development on Trust land.

Proper inventory of Trust lands is critical; therefore, the TLO is in the process of developing a systematic Energy Resource Information System utilizing Geographic Information System (GIS) technology. The comprehensive GIS databases are comprised of geological, structural geological, geophysical exploration datasets and subsurface exploration data accommodating spatial and non-spatial information.



percent, which means a future net income value of approximately \$8.75 million

The Trust holds leases with production from a small part of the Nicolai Creek field in west Cook Inlet through an agreement with Aurora Power. Nicolai Creek still actively produces new gas from other reservoirs in the field. The Nicolai Creek field is estimated to contain approximately 1 BCF of gas. It is a small field with little upside potential. The Trust's current allocation from this field varies but overall is about 2.3 percent (28 percent of 12.5 percent) of approximately one-half of the field. Given the known reserves, the Trust's portion is thus 2.3 percent of 0.5 billion cubic feet of gas with a value of approximately \$740,000 (based on a gas price of \$6.40 per thousand cubic feet).

Field/Area	Volume	Gas Value (\$/MCF)	Certitude	Resource Value to Trust (millions)
Kenai Loop		\$6.40	Proven	\$8.75
Nicolai Creek		\$6.40	Probable	\$0.7
Cook Inlet undiscovered gas	475 BCF	\$6.40	Highly speculative	\$3,800
Cook Inlet undiscovered oil	14.5 MMBO	\$100.00/bbl	Highly speculative	\$181

Oil and Gas

Trust oil and gas resources are largely restricted to the Railbelt. As of the publication of this document, the Kenai Loop field is producing 10 million cubic feet of gas per day (MMCFD). In March 2013, Ralph E. Davis Associates issued a reserve estimate report for the proved developed producing (PDP) and proved developed non-producing (PDNP) components of the Kenai Loop reserves. The PDP reserve estimate was 19.9 billion cubic feet (BCF) of gas, which is equivalent to 3.3 million barrels of oil (BOE); the PDNP reserves were estimated at 2.4 BCF or 400,000 BOE.

The total proved developed reserve category is therefore 22.3 BCF or 3.7 MMBOE. The reserve estimate calculated the PDP and PDNP reserves to have a future net income of approximately \$100 million. The Trust's share of this reserve is roughly 8.75

Coal and Lignite

Chuitna Proposed Mine Reserves

The coal-bearing sediments in the proposed mine area are part of the Tertiary Tyonek Formation of the Kenai Group. Although at least 18 coal seams (including stringers) are known to occur within the proposed mine area, four are of adequate areal extent and thickness to be significant to mining: Red 1, Red 2, Red 3 and Blue seams. A fifth seam, the Green Seam, is present in isolated areas and is potentially significant to mining only at several locations in the northwest area. The Chuitna Project's estimated minable reserve is approximately 300 million tons. Given a conservative coal price of \$30 per ton, the Trust's 5 percent royalty has a value of \$450 million.

Coal Resources on Trust Lands

Coal Project or Area	Resource (Million Tons)	Coal Value per Ton	Resource Category	Resource Value to Trust (Millions)
Chuitna Mine	300	\$30.00	Minable	\$450
Wishbone Hill	0.3	\$35.00	Minable	\$0.5
Jonesville	103.7	\$35.00	Measured, Indicated, Inferred	\$229
Chickaloon	24.3	\$150.00	Indicated, Inferred	\$225
Rosalie	6.7	\$35.00	Minable	\$12
Greater Chuitna Area	700	\$30.00	Inferred	
Healy Creek Area (all)	2,000		Hypothetical	
Jarvis	18.4		Hypothetical	

Wishbone Hill Reserves:

Usibelli Coal Mine Inc. estimates the surface minable reserves at Wishbone Hill at 14.4 million tons; approximately 300,000 tons is located on Trust land.

Jonesville Reserves:

The Jonesville coal project hosts the Joint Ore Reserve Committee-compliant measured, indicated and inferred resources of 130.7 million tons of coal (17 measured, 17.3 indicated, and 96.4 inferred). Coal at the Jonesville coal project is a quality high volatile B bituminous rank. It has excellent steam or thermal combustion qualities and has been used in the past for power generation. Its heat content averages 10,400 to 13,400 Btu/lb. One of the coal's key attributes is its low sulfur content (0.3 to 0.4 percent), making it valuable as a compliance coal. At a coal price of \$35 per ton, the Trust's 5 percent royalty has a value of approximately \$229 million.

Chickaloon Resource:

In the Chickaloon-Castle Mountain coal district, Barnes (1967) reported total coal resources of 25 million short tons (23 million metric tons) based on apparent rank

of bituminous coal, with thicknesses greater than 14 inches (35 cm) and between 0 and 2,000 feet (0 to 610 m) of overburden. Total resources were divided into 0.0 measured coal resources, 0.7 million short tons (0.6 million metric tons) indicated coal resources and 24.3 million short tons (22 million metric tons) inferred coal resources. At a coking coal price of \$150 per ton, the Trust's 5 percent royalty would have a value of approximately \$225 million.

Rosalie:

The Trust has considerable land holdings north and south of the Usibelli Coal Mine's (UCM) operations. UCM has leased approximately 3,400 acres of Trust land, mostly in the Healy Creek area, including the historic Rosalie mining area. UCM estimates 6.7 million tons of minable tons of coal at Rosalie.

Jarvis Creek:

The Trust owns the subsurface estate of two contiguous sections in the central portion of the Jarvis Creek coalfield, or about 10 percent of the known field. This field is the easternmost extent of the Central Alaska-Nenana coal province. The unnamed coal-bearing rocks are Tertiary in age and they unconformably overlie Birch Creek Schist. The field is estimated to contain a measured resource of 17.3 million tons, an indicated resource of 37.0 million tons, an inferred resource of 227.4 million tons and a hypothetical resource of 533.5 million tons. Data indicate that the Trust's acreage is underlain by 4 feet of coal and thus contains approximately 18.4 million tons of coal.

Underground Coal Gasification (UCG)

In May of 2011 the Trust entered into three exploration agreements with Linc Energy Alaska Inc. to explore approximately 167,917 acres of Trust land in three separate areas of the state (Kenai, Tyonek, and Interior) to determine the potential for UCG production. The Tyonek license has expired, but the other agreements extend to May of 2018. The lands under license have good potential of hosting coal-bearing strata at depths of 600 to 3,000 feet below the surface where UCG could take place. For instance, nine square miles of land with a 25-foot coal seam is capable of producing sufficient synthesis gas, or syngas, for a gas-to-liquids plant to produce 20,000 barrels of diesel fuel per day for 40 years.

ENERGY RESOURCE MANAGEMENT STRATEGY

2016 RESOURCE MANAGEMENT STRATEGY

Coalbed Methane (CBM)

The coal resources of Alaska contain significant potential CBM resources. The gas currently produced in Cook Inlet is methane derived from coal that has migrated and is stored in sandstone reservoirs; CBM is gas stored in the coal itself.

A 2011 USGS estimate for Cook Inlet placed undiscovered CBM at 4,674 BCFG, or approximately 4.7 trillion cubic feet of gas. Given the Trust's land holdings in this area (3.1 percent), it can be estimated that these holdings may possess 145 BCFG of undiscovered CBM.

Hydropower

Potential may exist on some Trust lands for sites suitable for development of run-of-river hydro projects. Plans exist to assess and evaluate this potential.

Geothermal

The TLO has plans to evaluate the potential for geothermal energy sites on Trust lands.

Wind

Trust land parcels have not yet been assessed for wind power potential. The National Renewable Energy Laboratory has mapped wind potential for Alaska which can be cross referenced with Trust parcels, however more parcel-specific information is needed to better evaluate potential.

Development Issues

Land Use Conflicts

Resource conflicts on fee simple Trust lands are rare, largely because the marketplace usually quickly resolves the relative value of resources on a merit basis. For instance, most parcels in an urban or suburban setting have high real estate values and little chance of being developed for mineable resources due to their location in densely populated areas — and thus the mineral resources are not pursued. For those areas where resource conflicts do occur, such as timber and mineral resources at Icy Bay, active management is required by TLO to ensure both resources' value can be realized without sacrificing either.

More common are conflicts on lands with a split estate — where the Trust owns the subsurface mineral estate and another entity, like the State of Alaska, owns the surface estate. In such cases, the public has become habituated to using the land as if it were typical state-owned land and is not aware that the Trust has a right to develop the subsurface resources. In addition, in some instances the state has contributed to conflicts by selling the surface estate for residential use and thus has severely compromised the Trust's ability to develop its resources. In these instances, the Trust should aggressively seek to return these lands to the state and receive replacement lands that have a reasonable chance to be developed, thus meeting the original intent of Congress in granting minerals to the Trust.

Environmental Conflicts

In recent years, coal energy has become increasingly controversial, and new and ongoing development projects are routinely met with objection, particularly from environmental groups. However, the world continues to consume approximately seven billion tons of coal per year. Much of the energy resource value of Trust lands is contained in coal resources. And on much of its land, the Trust possesses only subsurface estates. As the Trust is mandated to manage the economic development of its resources for the best interest of its beneficiaries, it will continue to foster and support the responsible development of these resources.

Location

Wind and hydrokinetic projects are dependent on proximity to population centers that will use the power produced. Because of the smaller scale of energy produced by these projects, greater transmission distances reduce the profitability of the projects and can make them unfeasible. Therefore identifying locations where resources and proximity to end market coincide is critical.

Energy Management Strategy

Energy resource development projects are guided by the following management principles:

1. Must be accomplished while protecting and enhancing the non-cash asset value and productivity of Trust land.

2. Maximize revenues from Trust lands over time.
3. Maximize return at prudent risk levels, embrace a diversity of resource projects, provide ancillary values such as enhanced access to Trust lands, and prevent liability risks.
4. Competitive lease offerings are preferred, but non-competitive leases can be used where competitive lease sales have failed or where a non-competitive lease agreement benefits the Trust in other ways.

Risk Management

Natural resource projects are subject to many risks: future commodity prices; uncertainties about the quality and quantity of the resource base; developing technology; input prices; and external or domestic political developments. Such risks must be assessed and classified. Typically, investors bear operational or market risk since they can better manage or control it. The Trust shares in bearing certain political risks since natural resource development projects often have some measure of controversy.

Capital Risk

Without a doubt, the Trust has the potential to make much more profit on a large-scale resource extraction operation if it were to successfully explore its land, discover a deposit or reservoir, prove the resource is capable of being profitably extracted, successfully permit the facility, construct the facility, operate it until exhaustion of the resource, and conduct reclamation. However, each step is fraught with risk and requires expertise and personnel that would have to be acquired on a large scale. A commitment to explore Trust lands would reasonably require millions of dollars per year with no assurance of successful development. Thus risk is reduced by not investing Trust capital in resource exploration and development but rather by marketing the properties to attract others to invest in this high-risk segment of the energy business.

Partnering

The characteristics of major natural resource projects — longevity, scale, capital requirements, social and environmental impacts, specialized and demanding technology, and exposure to commodity market risks — mean that development of large projects is most efficiently achieved in cooperation with partners

that possess both significant financial capacity and the necessary technical and managerial skills. Attracting such partners while still securing full value for the Trust's resources requires carefully designed leasing policies and contractual terms. TLO follows well established procedures for leasing and seeks to establish financial terms that are competitive with the private marketplace (while recognizing that each property has its own set of merits dependent upon location, access, geology, available information and commodities). Additionally, where leasing is employed, eligibility is restricted to those entities that have demonstrated possession of, or access to, sufficient capital resources as well as appropriate management and technological capabilities.

Diversification

Another method for reducing risk is to diversify the commodity portfolio as much as possible. Most commodities have price cycles that are difficult to predict but nonetheless are cyclical with established trading ranges. Commodity prices seldom rise and fall together, so it is advantageous and reduces risk to be involved with a wide selection of resources including non-energy ones. Since some commodity prices fall as others rise, the TLO seeks to be involved with as many commodities as are available on Trust land — oil, gas, coal, UCG, CBM, wind energy, etc.

Royalty Type

There are a number of options regarding financial return to the Trust in resource extraction. These are usually in the form of royalties, typically either a net-type royalty or a gross-type royalty.

For leases of Trust land that originate from the TLO, a gross-type royalty is preferred so a steady revenue stream is available from the outset of production and continues whether the operator's profits are high or non-existent. This minimizes risk to the Trust's income stream.

The Trust receives revenue in the form of rents and royalties according to the terms and conditions of the agreements.

Disposal of Trust Energy Resources

"Disposal" here means the issuance of a lease that grants the lessee the right to explore for, develop,

ENERGY RESOURCE MANAGEMENT STRATEGY

2016 RESOURCE MANAGEMENT STRATEGY

remove and market a particular Trust resource that might be located on Trust land.

11 AAC 99.020 describes the management responsibilities that are consistent with Trust principles accepted by the Territory and State of Alaska under the Alaska Mental Health Enabling Act. When taking land management actions, including disposals of resources, the executive director must make a number of considerations to be consistent with these principles. These considerations are:¹

1. *Maximization of long-term revenue from trust land;*
2. *Protection of the corpus of the trust;*
3. *Protection and enhancement of the long-term productivity of the land;*
4. *Encouragement of a diversity of revenue-producing uses of trust land; and*
5. *Management of trust land prudently, efficiently and with accountability to the trust and its beneficiaries.*

11 AAC 99.020(d) reads:

The disposal of trust land shall be on a competitive basis unless

(1) the executive director, in consultation with the trust authority, determined in a written decision required by 11 AAC 99.040 that a non-competitive disposal is in the best interest of the trust and its beneficiaries; or

(2) an existing law that is applicable to other state land and that is consistent with (a)-(b) of this section allows for a negotiated transaction.

This is the key regulation that determines how an interest in Trust land may be disposed. Disposal of resources on Trust land can be initiated in several ways, such as the expression of interest from a prospective purchaser, the acceptance of an application, or the opening of an area by the executive director for leasing, but the actual disposal is conducted based on 11 AAC 99.020(d).

Oil and Gas

The Trust owns approximately 300,000 acres that are

considered to be prospective for oil and gas resources. Most of this acreage is located in the Cook Inlet Basin, but some acreage exists in the Nenana Basin.

In January of 2001, the TLO contracted with Petrotechnical Resources of Alaska (PRA) to define leasable tracts of Trust land in the Cook Inlet area with oil and gas potential that the TLO could offer for lease in its own offerings. Fifty-seven tracts were delineated by PRA, including tracts on the Kenai Peninsula, the west side of Cook Inlet near Tyonek and Beluga, Point MacKenzie, and an area north of Big Lake. These tracts do not include the Nenana acreage. The TLO conducted its first lease sale in the fall of 2001, and continues to conduct sales on a semi-regular basis as previously leased tracts become available due to lease expiration or termination.

Most TLO oil and gas leases are competitive as required by 11 AAC 99.020(d). The leasing process used by the TLO closely resembles the process followed by the Division of Oil and Gas, except that the TLO does not operate according to a five-year schedule nor does it conduct an annual sale, simply because the Trust does not have enough acreage to warrant an annual offering, especially if most of the more prospective tracts are already leased.

Typical lease terms for a Trust oil and gas lease include the following:

1. Primary term:

Leases may be issued for a primary term of five to ten years. The lease is extended automatically if and for so long as oil or gas is produced in paying quantities from the leased area. It can also be extended if the lease is committed to an approved unit.

2. Annual rental:

Annual payments starting at \$1 per acre and ranging to \$10 per acre with annual incremental increases are required to maintain the lease. Payment rates may be increased at TLO's discretion if the lease is extended beyond the primary term. Annual rental paid in advance is a credit against royalty due for that year.

3. Royalty on production:

Except for oil, gas, and associated substances used on the lease area for development and production, or unavoidably lost, lessee shall pay to lessor as royalty

1 11 AAC 99.020 (c)

12.5 percent in amount or value of the oil, gas, and associated substances saved, removed, or sold from the lease area. The TLO, in an attempt to incentivize production, has used a production royalty rate of 10.5 percent for production in the primary term only. Beyond that, the rate increased to 12.5 percent.

Terms are subject to change based on specific opportunities or current industry practices.

A TLO oil and gas lease provides for the development of coalbed methane (shallow gas) as well as conventional oil or gas deposits.

It reserves for the TLO the right to lease oil, gas, and associated substances if the lease is extended beyond the primary term based solely on the development and production of CBM.

TLO can also issue oil and gas leases on a negotiated basis as allowed by 11 AAC 99.020(d)(1). In these instances, all the terms of the lease, including payment of cash bonuses, may be subject to negotiation, depending on the circumstances.

Also in the Trust portfolio are leases, or portions of leases, issued by the Division of Oil and Gas that were in place when land was conveyed to the Trust. The leases, termed "legacy leases," are very limited in number and include a portion of a lease in the Beluga River Unit, portions of leases in the Nicolai Creek Unit, and leases at Three Mile Creek. The Trust receives rent and royalty revenue according to the terms of these state leases.

Coal

As of this publication, there are 18 coal leases on Trust land that cover approximately 38,000 acres. These leases consist of a competitive lease issued to Riversdale Alaska for land at Chickaloon, two negotiated leases with UCM at Healy, two legacy leases with UCM at Healy, six legacy leases (or portions of leases) with UCM at Wishbone Hill (Sutton), one legacy lease with Ranger Alaska at Jonesville (Sutton), and six legacy leases with PacRim Coal at Chuitna.

Similar to the oil and gas leases, the legacy coal leases were in place when the land was conveyed to the Trust. The Trust is subject to the terms of these existing leases, which include an indefinite term, rentals of \$3 per acre per year (which may be subject to adjustment, depending on the effective date of the lease), and a

production royalty of 5 percent, adjusted by limited deductions for beneficiation and transportation, as defined in 11 AAC 85.225.

Underground Coal Gasification

In May of 2011, the TLO entered into several exploration licenses for UCG development. The licenses are issued to Linc Energy (Linc), and they allow Linc to conduct various exploration activities on Trust land in order to locate specific areas that would be suitable for UCG development. If such areas are located, the licenses allow Linc to convert that specific acreage to a lease, which would grant it the right to develop the coal to produce products through the UCG process.

The authorization process used for this resource involves the initial issuance of an exploration license rather than a lease because of the large amount of acreage involved and the significant expenditures required to explore that acreage. Such large acreage is needed because development of coal in place, and in particular the gasification of coal in place, requires that the coal possess certain characteristics, such as proper depth, acceptable moisture content, and a location that has particular geologic parameters. While these characteristics are thought to exist in the Cook Inlet area, the location of specific areas will require extensive exploration. The exploration licensing process is a competitive process, and the successful applicant is selected based not on a bonus bid per acre but on the quality and value of the exploration program the applicant proposes. Factors used to determine the successful licensee include the nature of the exploration program proposed, the expenditures associated with that program, and the schedule in carrying out the program.

Other terms of the license issued for this program include a license term of seven years; a minimum one-time, non-refundable license fee of \$1 per acre; and compliance with the work program submitted as part of the application process. The licensee is required to relinquish acreage at various points during the license term so that the entire license area does not remain encumbered, preventing other potential land uses. It is anticipated that the exploration program, if successful, will lead to a reduced, more focused land package that the licensee will lease for coal gasification development without the need for an additional leasing process. If a lease is executed, it will be on a standard Trust coal lease form, with a finite lease term.

ENERGY RESOURCE MANAGEMENT STRATEGY

2016 RESOURCE MANAGEMENT STRATEGY

Rental will start at \$4 per acre per year, and royalty will be negotiated based on a mutually agreed upon method of determining coal consumption and value.

Wind Energy

To date the TLO has not authorized the development of wind energy on Trust land, although the office has received inquiries regarding the potential development of this resource and has issued licenses authorizing the installation of towers and equipment to capture data on wind speed and direction in several areas.

It is anticipated that if and when an authorization is issued to allow for the development of this resource on Trust land that the terms of the lease agreement would resemble those that the state has with Golden Valley Electric Association (GVEA) for the Eva Creek project. These include a 25-year extendable lease term with annual lease payments based on appraised value of the land plus \$3,000 per megawatt installed capacity, adjusted every five years by the Consumer Price Index. There is also a one-time installation fee of \$1,500 per megawatt. Questions exist as to the actual leasing process since 11 AAC 99.020(d) requires the disposal of Trust land to be on a competitive basis. DNR is working on new wind regulations and the TLO will have to determine if the new regulations are compatible with 11 AAC 99.020.

Hydroelectric Energy

No hydroelectric energy-generating projects are currently authorized on Trust land. It is anticipated that a prospective project would be authorized through a competitive leasing process with lease terms including annual land payments based on appraised value plus a fee for power produced, similar to that of a wind project lease.

Geothermal Energy

Like wind energy, leases for geothermal energy would involve fees related to surface access, surface uses, and annual rental based upon an acreage basis commensurate with other typical energy and mineral lease rates. The royalty would be based on a percentage of the gross revenues derived from the production, sale or use of the geothermal resources under the lease. There are specific state regulations that pertain to the permitting and leasing of geothermal resources, and it is anticipated that any leasing program on Trust land would follow these regulations to the extent that they are not in conflict with Trust management principles. An example of terms of an existing geothermal lease on state land include a primary lease term of 10 years; rental of \$3 per acre per year; and a royalty of 10 percent of the gross revenue derived from the project.

Goals and Objectives

Trust lands have a significant but undetermined amount of valuable energy resources, predominantly in the form of oil, gas, and coal. The current program of aggressively leasing land for oil and gas development is already returning good revenues. The goal is to manage these resources to provide a relatively steady and increasing stream of revenue until such time as they are exhausted.

Goal 1: Develop a diversified portfolio of energy products that can contribute significant revenue to the Trust.

Objective: Conduct leasing programs utilizing the plan guidelines for resource development on lands permissive of coal, oil, gas, underground coal gasification, coalbed methane, geothermal, wind, peat and other energy resources.

Goal 2: Continue with the current program of managing oil and gas leases to encourage exploration and development.

Objective: Conduct lease sales as parcels become available for leasing.

Goal 3: Continue with the current coal program of managing leases to encourage exploration and development in the near term.

Objective 1: Support PacRim's permitting efforts for the development of the Chuitna coal project.

Objective 2: Specify conditions in the Chuitna ASCMCRA² permits regarding reclamation and post-mining land use that allow for retention of roads and a reclamation plan that will support a commercial forest products industry or other suitable use to be developed on reclaimed Trust land.

Goal 4: Dispose of mineral- or coal-only portions of the land estate that have little chance of development because of surface use conflicts.

Objective: Return these portions of Trust land to the State and receive replacement lands.

Goal 5: Continue with periodic lease offerings of coal-bearing lands.

Objective: As land is evaluated by UCG exploration, those lands that are excluded from further exploration are to be evaluated for surface mining potential and offered for lease; coal lands in the vicinity of the Usibelli Coal Mine operations at Healy are high-value coal lands and should be offered for competitive leasing first.

Goal 6: Promote the development of the Trust's deepcoal reserves for underground coal gasification.

Objective 1: Monitor Linc Energy's proposed demonstration test burn in Wyoming. The feasibility of the UCG process using coal of similar quality in Alaska was to be demonstrated in a test burn in Wyoming by Linc Energy.

Objective 2: Monitor the state's work to develop a UCG guidance document to be used by developers seeking to advance UCG projects and by regulators as a road map for the permitting process.

Objective 3: Promote UCG evaluations of Trust land through identification of additional Trust lands with potential for UCG and conduct a lease offering if appropriate

Objective 4: Establish UCG royalty provisions for leases. Research royalty provisions in other jurisdictions and develop provisions for Trust leases. Consideration should be given to establishing the royalty on either a BTU basis or a coal value basis.

2 Alaska Surface Coal Mining Control and Reclamation Act

ENERGY RESOURCE MANAGEMENT STRATEGY

2016 RESOURCE MANAGEMENT STRATEGY

Bonding Goal: Ensure adequate bonding for oil and gas developments on Trust land.

Objective: Establish bonding criteria, in concert with state and federal bonding requirements that protect the Trust while maintaining competitiveness.

Coalbed Methane Goal: Promote the development of the Trust's deep coal reserves for coalbed methane production.

Objective 1: Evaluate Trust lands for CBM potential and as a revenue source.

Objective 2: Using TLO and published geologic information, develop a leasing strategy for CBM in the Railbelt and conduct a lease offering as appropriate.

Wind Energy Goal: Promote the development of wind energy projects

Objective 1: Evaluate opportunities to develop wind energy on Trust land.

Objective 2: Utilizing GIS data and the Wind Atlas, rank Trust land for applicability for wind energy development.

Objective 3: Evaluate potential demand, users and developers of wind energy and offer Trust land for evaluation, testing and development through leasing. Develop competitive business terms for wind energy leasing.

Replacement Lands Goal: Seek replacement land for those mineral-estate-only lands where development cannot take place due to surface conflicts.

Objective 1: Identify and compile a list of these impaired lands.

Objective 2: Identify potential replacement lands.

Objective 3: Seek a remedy through administrative, legislative, or legal proceedings so that the intent of Congress can be met.

Resource Inventory Goal: Develop and maintain an inventory of energy resources.

Objective 1: Continue to develop an Energy Resource Information System based on GIS technology.

Objective 2: Continue to expand resource inventory tables for the various resource commodities on Trust land that provides information on the amount of resources present and their value.