

**ALBUQUERQUE DEVELOPMENT COMMISSION
Industrial Revenue Bond Hearing**

December 19, 2019

Case #2019-13

IRB-19-3: Kairos Power, LLC. Project

REQUEST: Approval of \$125,000,000 in City Industrial Revenue Bonds is requested.

PROJECT SUMMARY: Kairos Power LLC, is a California-based energy technology and engineering company launched out of a broad research effort at U.S. universities and national laboratories, with whom the company still maintains many positive synergistic relationships. It was founded to accelerate the development of a clean, safe, innovative technology that has the potential to transform the energy landscape nationally and internationally. The company is requesting \$125 million in City-issued industrial revenue bonds. City IRBs are issued to support eligible economic development projects that meet established policies and plans. The Company is responsible for funding the purchase of the bonds; no City funds are utilized to purchase or pay off the bonds, and no City credit is used to enhance the bonds.

(The Company also is requesting assistance as a Local Economic Development Act—LEDA—Project, but that will be analyzed separately.) The purpose of the proposed project operation is the research, development, and testing of advanced salt coolant technology and related systems. The proposed operation will primarily focus on the engineering, development and testing of technology to utilize low-pressure molten fluoride salt as a coolant in a novel advanced nuclear reactor with an inherently safe design based on synergies between the fuel source, salt coolant, and passive safety mechanisms. According to their web site, “Growing from a broad research effort at U.S. universities and national laboratories, Kairos Power was founded to accelerate the development of an innovative nuclear technology that has the potential to transform the energy landscape in the United States and internationally. Kairos Power is focused on reducing technical risk through a novel approach to test iteration often lacking in the nuclear space. Our schedule is driven by the goal of a U.S. demonstration plant before 2030 and a rapid deployment thereafter.” The funds will be used to purchase the existing former northern Schott Solar facility and more than 30 surrounding acres for additional development for research, development, and testing facilities.

It is important to note that nuclear material will not be utilized on site.

The project represents approximately \$125 million in private sector investment by the end of 2022. Kairos Power Inc. will create 67 high-paying economic base jobs, and occupy a building that has been vacant off and on since Schott Solar left. The project will be focused on different stages of the R&D and testing operations associated with coolant technology. Only the initial phase involves the manufacture of a product for sale, while Phases 1 and 2 are focused on technology research, development, and demonstration.

The operations would include the former Schott building at 5201 Hawking Dr. SE, Albuquerque in the Employment Center of the Mesa Del Sol Planned Community plus additional surrounding

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acreage. The proposed use of the facility by the Company would not require a change in zoning. The purpose of the Planned Community Zone is to accommodate very large scale residential or mixed use-communities. There are no particular environmental impacts associated with this Project.

This project would continue Albuquerque and New Mexico's legacy on the development of alternative energy methods and products. The Company has close ties with Sandia and Los Alamos Labs, the Department of Energy, as well as UNM, NM State University, and NM Tech.

The majority of the 67 new positions will be primarily engineering and technical positions, are considered full time positions, and come with full employee benefits with the company paying 100% of benefits' costs.

The Company intends to provide training to all new employees and to avail itself of the State's Job Training Incentive Program in connection with the training of its employees where practical. The Company expects to spend approximately \$24 million on improvements to the existing Schott facility and to construct new facilities. In addition to acquiring the northern building of the former Schott Solar site, the company will purchase more than 30 acres for additional development of a campus-like setting of research and development facilities. Approximately 172 construction workers are expected to be employed in the development of the site. The Company expects to grow to spend more than \$9 million on utility expenses annually, plus additional expenditures for local goods and services.

The State of New Mexico and its local governments are empowered to offer discretionary incentives to companies that support economic development projects that foster, promote, and enhance local economic development efforts. The City has long focused its Industrial revenue bond program around industries and companies that are considered "economic-base":

Economic Base: Fifty-one percent or more of the revenues of the New Mexico operation are generated outside the Albuquerque Metropolitan Statistical Area. Revenues generated by contracts with Federal entities are considered to be from outside the metropolitan area. This requirement does not apply to educational or healthcare facilities seeking industrial revenue bonds. Credit also may be assigned to those projects that represent significant "import-substitution". Import substitution occurs when a manufacturer or supplier of services provides products or services to a local customer base which currently has to purchase those products or services from outside of the area.

More specifically, New Mexico municipal IRB legislation specifically identifies "projects" as land, buildings, equipment and improvements which are suitable for use by any of the following:

1. any business in which all or part of the activities of the business involve the supplying of services to the general public or to governmental agencies or to a specific industry or customer but does not include establishments primarily engaged in the sale of goods or commodities at retail;

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The IRB application, as shown in Exhibit 1 provides details of the Project and the number and types of jobs to be created.

This project includes a fiscal impact analysis prepared by the University of New Mexico’s Bureau of Business and Economic Research (BBER). The fiscal impact determination of the Project is from information the Company provided. The analysis shows that the company will be making a substantive contribution to the community, and that the City could realize a positive tax benefit with this project over the life of the bonds.

The project plan as shown in Exhibit A provides details of the project.

FINDINGS:

1. IRB 19-3 is a qualified project as defined by the State’s Industrial Revenue Bond Act and the City enabling legislation (Resolution R-196, Sixth Council (126-1985) as amended by Resolution 350 Sixth Council; and
2. IRB 19-3 would make positive substantive contributions to the local economy and community by creating 67 high-wage economic base jobs; and
3. IRB 19-3 will continue Albuquerque’s position in the forefront of alternative energy research and development; and
4. IRB 19-3 would comply with the adopted City plans and policies, and meet community economic development priorities and objectives;
5. IRB 19-3 would adequately meet the evaluation criteria established by the City for Industrial Revenue Bond Act projects, including the requirement that the City recoup the value of its investment over the term of the bonds.

PROJECT ANALYSIS: The project, as proposed in the project application, will be analyzed in accordance with the City’s IRB project evaluation criteria.

I. INITIAL QUALIFYING TEST; PASS/FAIL CRITERIA

1. Economic Base Company * that meets statutory requirements	Pass
2. Satisfactory initial demonstration of ability to service debt or self-fund purchase of the bonds, or evidence of an acceptable financing commitment.	Pass
3. Conforms to City planning and zoning policies.	Pass
4. Firm has no outstanding substantive federal, state or local tax issues.	Pass
5. Proposed project complies with all federal, state, and local environmental laws, regulations, and rules.	Pass
6. Jobs created by the project meet or exceed the median wage for similar jobs in the community	Pass

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7. Per state requirements, the firm covers 50% of health insurance premiums for employees.	Pass
8. Other additional factors.	
RESULT	PASS

1. Kairos Power’s revenue sources are to out-of-state entities and investors. Kairos also qualifies under the IRB Act and the City’s Ordinance as:

a. “any business in which all or part of the activities of the business involve the supplying of services to the general public or to government agencies or to a specific industry or customer base but does not include establishments primarily engaged in the sale of goods or services at retail.”

2. The bonds will be considered a “self-purchase”-- purchased by a subsidiary or affiliate of the Company.

3. The site is zoned PC for Planned Community at Mesa Del Sol and conforms to City planning and zoning policies. This Project includes an existing manufacturing facility. Additional information is contained below in Sections II-1 and II-2.

4. Kairos has certified that it has no outstanding substantive federal, state, or local tax issues.

5. The Project, in its design, complies with environmental regulations. Permits are required for the renovations and new developments. Additional information regarding environmental implications is contained in the following section and in the Project Plan.

6. Jobs for the positions meet or exceed the median wages for similar jobs in the community. The salaries and positions are more fully described in Section II-7 and in the Application.

7. Kairos pays at least 50% percent of the health and dental insurance premiums for its employees (they pay 100%).

8. This Project was a competitive site selection process for the company. The Project positions the Albuquerque location to be Kairos’s center for alternative energy coolant systems.

The Company has requested the approval of LEDA funds in the amount of \$4,000,000 from the State and \$1,000,000 from the City, but that will be a separate review and approval process.

II. LAND USE, PLAN AND DESIGN ELEMENTS

1. PLAN & ZONING:

Legal Description

The proposed property for Project Odyssey is at 5201 Hawking Dr SE, Albuquerque, NM 87106 and adjacent vacant parcels. Legal descriptions are below:

Lot D-1, 16.4161 Acres

TR D-1 PLAT OF TRACTS D-1 THRU D-7 MESA DEL SOL INNOVATION PARK II
(A SUBDIVISION OF TRACT D MESA DEL SOL INNOVATION PARK II)

Lot D-2, 3.7660 Acres

TR D-2 PLAT OF TRACTS D-1 THRU D-7 MESA DEL SOL INNOVATION PARK II
(A SUBDIVISION OF TRACT D MESA DEL SOL INNOVATION PARK II)

Lot D-3 / Schott Building, 12.0217 Acres

TR D-3 PLAT OF TRACTS D-1 THRU D-7 MESA DEL SOL INNOVATION PARK II
(A SUBDIVISION OF TRACT D MESA DEL SOL INNOVATION PARK II)

5201 Hawking DR SE, Albuquerque NM 87106

Prevailing Site Conditions

The property includes the former Schott Solar building (approximately 113,000 sq. ft. manufacturing facility) and adjacent land parcels. Currently, the Schott building on Parcel D-3 is essentially vacant; part of the office space is being used as temporary meeting space and locker rooms for the New Mexico United soccer team, and part of the manufacturing space is being used to store some hemp processing equipment. Land parcels D-1 and D-2 are vacant, development-ready property.

Present Assessed Value

Parcel	Description	Total Full Value	Net Taxable Value
TR D-1	16.4161 Acres	\$1,114,900	\$381,595
TR D-2	3.7660 Acres	\$320,500	\$106,822
TR D-3	12.0217 Acres / Schott Building	\$4,836,000	\$1,611,839

Present and Proposed Zoning

The site is currently in an IDO Zone District with designation PC (Planned Community).

No changes will be required for the proposed use.

As stated in the IDO, the purpose of the Planned Community District—Employment Center zoning district is to accommodate very large scale residential or mixed use-communities. A wide variety of non-residential uses include a wide variety of office, commercial research, light industrial, manufacturing, office, research and development, distribution, showroom, processing, and institutional uses.

2. LAND USE:

The Project will occupy the north building of the former Schott Solar facility for advanced energy research technology and development, and has plans to develop approximately 30+ acres for additional research and development facilities.

Current plans for 2020 include construction of a small chemical processing facility of approximately 5,500 sq. ft. that will be less than 25 feet in height and a 9,000 sq. ft. facility that will be 40 – 50 feet in height. In 2021, the current plan includes construction of an 80,000 sq. ft. facility that will be up to 80 feet high to accommodate very large testing equipment. The latter facility may be downsized somewhat given Kairos is also acquiring the Schott Solar building which was not part of the original project plan; however, since the building does not have the required ceiling heights, it is not expected that the plans for the 80,000 sq. ft. facility in 2021 will be substantially altered. At this juncture it is yet to be determined whether the proposed new structures will be attached to the existing building; the original concept for the site called for a campus of several buildings. Regardless, all new construction is expected to be attractive, high-quality metal over block style that will mesh well into the Mesa del Sol development and meet the established standards for the area. (Both the Schott Solar and Albuquerque Studios/Netflix buildings are of metal construction).

The impact on existing industry and commerce after construction is anticipated to be favorable. The purpose of the proposed operation is the development and testing of advanced salt coolant technology and related systems. The proposed operation will primarily focus on the engineering, development and testing of technology to utilize low-pressure molten fluoride salt as a coolant in a novel advanced nuclear reactor with an inherently safe design based on synergies between the fuel source, salt coolant, and passive safety mechanisms. *It is important to note that nuclear material will not be utilized on site.*

The proposed operations will not generate any notable air, noise, or waste pollution. Given the modest proposed employment level and focus on research and development rather than on manufacturing, there will not be significant employee or truck traffic associated with the project.

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From time-to-time large pieces of testing equipment will be shipped in for installation, particularly during facility construction.

D. Competition

The research and technology development to be conducted by Kairos Power in Albuquerque is extraordinarily unique with few competitors globally and none locally or even in the state of New Mexico. There are some research synergies with the National Labs in the area.

E. Effect on Existing Industry and Commerce during and after Construction

Based on the anticipated construction cost, it is estimated that 172 FTE construction jobs will be supported during the construction period (2020 and 2021). Once the facility is fully operational, 67 full-time high-quality R&D jobs will be created. Given the nature of the proposed testing operations, significant quantities of electricity and natural gas will be utilized, resulting in significant local purchases from PNM and NMGCO.

More detail is provided in the fiscal impact analysis.

The project would support: a) An Economic Development Strategy for Albuquerque/Bernalillo County to attract, develop, and retain responsible and responsive businesses; nourish expansion of existing and new local businesses; and emphasize economic base companies; and b) The Comprehensive Plan Economic Development Policies to: encourage expansion of export-based business to customers across the country that strengthen the economy; encourage prospective employers willing to hire local residents and able to diversify the employment base; development of local business enterprises as well as the recruitment of outside firms. The project also supports the economic development priorities and objectives of the City's Local Economic Development Act.

The Kairos Power Project further supports the Economic Development Department's criteria for the use of incentives by Leveraging our Core Assets, Implementing Place-Based Strategies (by occupying a large existing mostly vacant office building and surrounding areas in a designated Employment Center), Supporting Focused and Positive ROI Projects, and creating 67 high-paying Economic Base jobs.

3. INFILL:

The project involves an existing building, which was previously operated as an advanced manufacturing center, and has served as a gathering place for the New Mexico United Soccer Team center. Most infrastructure, parking and utilities are already developed. A map of the area is included. The most significant infrastructure improvement required to meet the needs of the project when Phase 2 becomes operational in 2022 is an electrical substation. PNM has indicated it will construct a new \$20+ million substation in Mesa del Sol to meet the needs of this project and future development in the area. This project will share in the cost of the

substation through an initial up-front capital contribution as well as an investment credit recovered through the electric rate. PNM will absorb a large portion of the cost as part of general infrastructure improvements required to support anticipated growth in the area.

4. DESIGN AND CONSERVATION:

The facility is an existing area designed as an employment center. The existing building has been kept in good condition and repair over the years to maintain its quality appearance. The additional facilities and construction planned will conform to the Mesa Del Sol design guidelines.

No historic properties are involved.

The proposed site is essentially vacant. The company plans to work with building ownership to accommodate the needs of the New Mexico United soccer team's use of the office space until such time as the team's new permanent facility is ready. Similarly, the company will be working with current ownership to ensure minimal disruption to the small hemp processing operation that is presently utilizing a small portion of the manufacturing space.

No individuals, families, or businesses will be displaced by the activities outlined in this plan. The project is to be located within an existing manufacturing facility.

Water use is expected to be minimal for the initial phases of the operation – 600 gallons / day or 18,000 gallons / month. When the last planned phase becomes operational in 2022, water consumption is expected to increase to a maximum of 600,600 gallons / day or 18,018,000 gallons / month. These are high-end estimates used for the site selection process to ensure sufficient capacity would be available. The company's engineering team is currently reviewing means to reduce water consumption through use of alternative cooling technologies and recirculation of cooling water. The company fully expects to be able to utilize water from the nearby water reuse (purple) line for all, but the potable water required for the facility.

5. RENEWABLE ENERGY:

The Company will not create or produce renewable energy from the facility.

III. ECONOMIC BENEFITS

6. COMPETITION:

There does not appear to be any local competition for the customers/clients that Kairos Power services. The type of research and development that Kairos is pursuing is fairly unique in the world. Although they do state that they have some synergies with universities and national laboratories.

7. JOBS:

The salaries for the jobs profiled meet or exceed the average for similar positions within the community.

M. Number and Types of Jobs Created

The anticipated new job employment ramp-up schedule is shown in the table below:

Hires by Year

Position	2020	2021	2022	2023	2024	Total	Est Salary 2020	Est Salary 2021	Est Salary 2022	Est Salary 2023	Est Salary 2024
Chemical Plant & System Operators		9				9	\$72,000	\$74,160	\$76,385	\$78,676	\$81,037
Operations Supervisor		1	1			2	\$68,000	\$70,040	\$72,141	\$74,305	\$76,535
Laboratory Technician		2	2			4	\$70,000	\$72,100	\$74,263	\$76,491	\$78,786
Chemical Technicians		3				3	\$60,000	\$61,800	\$63,654	\$65,564	\$67,531
Mechanical Engineer		1				1	\$100,000	\$103,000	\$106,090	\$109,273	\$112,551
Process / Chemical Engineer		1				1	\$125,000	\$128,750	\$132,613	\$136,591	\$140,689
Electrical Engineer		1				1	\$120,000	\$123,600	\$127,308	\$131,127	\$135,061
Facilities Manager		1	1			2	\$90,000	\$92,700	\$95,481	\$98,345	\$101,296
Nuclear Engineers		8	6	8	10	32	\$125,000	\$128,750	\$132,613	\$136,591	\$140,689
Administrative Assistant		1				1	\$35,000	\$36,050	\$37,132	\$38,245	\$39,393
Technical Director / Fellow	1	1				2	\$210,000	\$216,300	\$222,789	\$229,473	\$236,357
Administrative Services Manager	1					1	\$90,000	\$92,700	\$95,481	\$98,345	\$101,296
Industrial Machinery Mechanics		1				1	\$59,000	\$60,770	\$62,593	\$64,471	\$66,405
Machinist		2	2			4	\$58,000	\$59,740	\$61,532	\$63,378	\$65,280
Health and Safety Engineers		1				1	\$121,000	\$124,630	\$128,369	\$132,220	\$136,187
Warehouse Worker	1		1			2	\$37,000	\$38,110	\$39,253	\$40,431	\$41,644
Total	3	33	13	8	10	67					

- 1) What percentage of the permanent new jobs is expected to be filled by current Albuquerque area residents, as opposed to people relocated from elsewhere?

The 67 new jobs will likely include 10 – 13 engineers transferring from the company’s California facility in 2023 and/or 2024. Albuquerque is uniquely positioned to provide professionals with the specialized skills and knowledge required for the proposed operation. However, given the rapid ramp-up and nationwide competition for the

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engineering skills, it may not be possible to hire all of the required staff locally, though the company will certainly make every effort to do so.

2) Will jobs benefit low and moderate income residents?

All positions will be made available to all qualified applicants.

3) Will the jobs meet or exceed median wages for the industry within the community?

Yes. The facility will have an average salary of approximately \$100,000

4) Will the jobs match skills of current city residents?

Yes. Part of the appeal of Albuquerque for this project is the skill set present in the region with the university, the national labs, and other major technology companies.

5) Will new employees be trained to fill the positions?

Yes. The company is anticipating it will utilize the Job Training Incentive Program and is looking to spearhead a consortium focused on key technical skills relevant to Kairos Power, the national labs, other interested companies, and educational institutions (CNM, NMSU, UNM, and NM Tech) in the area.

6) What stated advancement opportunities are there?

Kairos Power fully supports advancement from within. As a growing, entrepreneurial business, there are ample opportunities for team members who wish to advance to do so, either in management or through leadership of technical teams.

7) Will "Job Training Incentive Program" or other job training programs be used?

Yes

8) Will at least 50% of health insurance premiums be covered for employees?

Yes. The company pays for 100% employee’s premiums for medical, dental, and vision coverage. In addition, the company pays for a majority of employee(’s) premiums—medical at 100%, dental and vision at 85%.

8 Local Purchasing

Estimated local purchases of goods and services other than utility services are expected to be negligible. Annual utility expenditures are very significant and are shown in the table below; these are reflective of the planned operational ramp-up along with the assumption of a 5-year economic development rate in effect for electric service (undiscounted total shown in 2026). No annual increase in the applicable base rates is assumed in the figures shown. Future increases are difficult to predict as they depend on decisions by other parties; we leave it to you to utilize whatever increase you deem appropriate for modeling purposes.

Year	Electric	Natural Gas	Water	Sewer
2021	\$1,215,241	\$43,899	\$18,019	\$31,817
2022	\$2,381,479	\$692,627	\$178,727	\$178,652
2023	\$4,886,014	\$2,489,981	\$642,831	\$587,342
2024	\$4,972,969	\$2,489,981	\$642,831	\$587,342
2025	\$5,179,008	\$2,489,981	\$642,831	\$587,342
2026	\$5,443,018	\$2,489,981	\$642,831	\$587,342

In addition to the substantial utility purchases shown above, the company will likely utilize local groundskeeping and facility maintenance services, janitorial services, equipment maintenance services, and security services. Miscellaneous office and facilities supplies will also likely be purchased locally.

IV. PROJECT FEASIBILITY

9. COST/ FEASIBILITY/ FINANCING:

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(Millions)	Phase 0	Phase 1	Phase 2	Total
Land	\$6.3			\$6.3
Existing Building Purchase	\$5.9			\$5.9
New Building Construction	\$1.0	\$3.0	\$20.0	\$24.0
Equipment				
– Production M&E	\$15.5			\$15.5
– R&D Equipment		\$8.0	\$60.0	\$68.0
Sub-Total	\$15.5	\$8.0	\$60.0	\$83.5
Total Investment	\$28.7	\$11.0	\$80.0	\$119.7

Begin Construction	Q1 2020	Q1 2020	2020
New Bldg Investment	100% 2020	100% 2020	25% 2020 75% 2021
			50% 2020 25% 2021
Equipment Investment	100% 2020	50% 2021	50% 2022 25% 2023
Begin Operations	Q1 2021	Q1 2021	Q 3 2022

As stated above, the Company intends to spend approximately \$24 million in facility upgrades and new building construction.

Upon completion of the project, the estimated appraised value of the facility is anticipated to be approximately the same as the cost involved for new construction, plus an additional \$84 million in equipment and other personal property.

Funding is subject to City Council approval. Kairos Power intends to self-fund the improvements through their own working capital, and they are responsible for their own and the City’s fees related to the LEDA applications and associated legal or other administrative fees, including the fiscal impact analysis.

Kairos has included a letter from their investment managers stating they have more than \$125 million in assets available for the project.

10. DEVELOPER’S RECORD:

Kairos Power Inc. was founded in 2016 and is headquartered in Alameda, California, in the San Francisco Bay area, and currently has about 100+ employees.

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Kairos Power, LLC is single member LLC. A separate LLC to hold the real estate is in the process of being established and will be wholly owned by Kairos Power, LLC. Kairos Power is privately funded; while the company maintains strong relationships with the Department of Energy and the National Laboratories, it is not dependent on federal funding.

Brief summaries of the relevant experience of the three co-founders of Kairos Power are included below and their resumes are attached to the Application. Additional information about other key individuals with the company can be found on the company's website.

Michael Laufer, Co-Founder and Chief Executive Officer

Dr. Michael Laufer is the Co-Founder & CEO of Kairos Power. In this role, Dr. Laufer is responsible for high level strategy and operations within the company for Kairos Power's design, development, and commercialization of the Kairos Power Fluoride-Salt-Cooled High-Temperature Reactor (KP FHR).

Prior to co-founding Kairos Power, Dr. Laufer was a postdoctoral scholar at the University of California, Berkeley where his research included work in reactor safety, design, licensing, and code validation for advanced non-light water reactors. His technical expertise includes experimental and discrete-element simulation methods for granular flows relevant to pebble-bed nuclear reactors.

Dr. Laufer graduated from Stanford University with a B.S. in Mechanical Engineering with Honors in International Security Studies. He received his Ph.D. in Nuclear Engineering from the University of California, Berkeley.

Edward Blandford, Co-Founder and Chief Technology Officer

Dr. Edward Blandford is a Co-Founder & CTO of Kairos Power. He is responsible for technology development, experimental testing, modeling and simulation, and licensing activities at Kairos Power.

Prior to co-founding Kairos Power, he was at the University of New Mexico where he was an assistant professor in the Department of Nuclear Engineering. Dr. Blandford was also a Stanton Nuclear Security Fellow at the Center for International Security and Cooperation at Stanford University. He also worked for several years as a project manager at the Electric Power Research Institute focusing on steam generator thermal-hydraulics and material degradation management.

Dr. Blandford has a B.S. in Mechanical Engineering from University of California, Los Angeles and a M.S. and Ph.D. in Nuclear Engineering from the University of California, Berkeley.

Per Peterson, Co-Founder and Chief Nuclear Officer

Dr. Per Peterson is a Co-Founder & Chief Nuclear Officer of Kairos Power. Dr. Peterson also holds the William and Jean McCallum Floyd Chair in the Department of Nuclear Engineering at the University of California, Berkeley.

He is an expert in topics related to high-temperature fission energy systems, safety and security of nuclear materials, and waste management. As a member of the Evaluation Methodology Group, he participated in the development of the Gen IV Roadmap while serving as co-chair for the Proliferation Resistance and Physical Protection Working Group. His research has contributed to the development of the passive safety systems used in the General Electric ESBWR and Westinghouse AP1000 reactor designs. With Charles Forsberg and Paul Pickard, in 2003, he proposed the FHR concept of a molten-salt cooled, solid fueled reactor.

Dr. Peterson graduated from the University of Nevada at Reno with a B.S. in Mechanical Engineering. He holds an M.S. and Ph.D. in Mechanical Engineering from the University of California, Berkeley.

The Kairos Power FHR (KP-FHR) is a novel advanced reactor technology that leverages TRISO fuel in pebble form combined with a low-pressure fluoride salt coolant. The technology uses an efficient and flexible steam cycle to convert heat from fission into electricity and to complement renewable energy sources.

Kairos Power is among a select group of companies working with the U.S. Department of Energy and others to advance and transform the nuclear power landscape and safety discussion.

1. JUNE 29, 2019

Kairos Power Selected by U.S. Department of Energy for Awards to Advance Nuclear Fuel and Materials Applications

ALAMEDA, Calif. – June 28, 2019 – Kairos Power has been announced as an award recipient under two U.S. Department of Energy (DOE) programs to advance nuclear energy research and technology.

2. APRIL 05, 2019

Kairos Power Selected by U.S. Department of Energy for Award to Accelerate Innovation and Application of Advanced Reactor Technology

ALAMEDA, Calif. – April 5, 2019 – The U.S. Department of Energy (DOE) announced that Kairos Power is a recipient of a Gateway for Accelerated Innovation in Nuclear (GAIN) Nuclear Energy voucher. The GAIN vouchers provide advanced nuclear technology companies access to the research facilities and technical expertise within the DOE national laboratories. This project partners Kairos Power with Argonne National Laboratory.

APRIL 05, 2019

GAIN announces second-round FY-2019 Nuclear Energy Voucher recipients

The Gateway for Accelerated Innovation in Nuclear (GAIN) announced today that three nuclear companies will be provided GAIN Nuclear Energy (NE) Vouchers to accelerate the innovation and application of advanced nuclear technologies. NE vouchers provide advanced nuclear technology innovators with access to the extensive nuclear research capabilities and expertise available across the U.S. Department of Energy (DOE) national laboratory complex.

3. APRIL 03, 2019

Westinghouse, Kairos win \$18mn of SMR funding

Small modular reactor developers Westinghouse and Kairos Power were the main winners in the Department of Energy's (DOE) latest funding round for advanced reactor projects. The DOE has allocated a total of \$19 million to four nuclear technology projects, on a cost share basis.

Additional information is available on www.Kairos Power.com.

11. EQUITY:

The project intends to utilize \$125 million of industrial revenue bonds, which will be self-purchased, and \$5 million of LEDA funds for this project.

Based on financial information provided, the Company appears capable of managing and completing the Project.

12. MANAGEMENT:

Kairos Power will develop their management team for the site. Biographies of other Company senior personnel are attached in the Application.

Based on the description given in the project plan, management appears to be qualified to manage the project.

13. FISCAL IMPACT ANALYSIS

This Project includes an impact analysis prepared by the University of New Mexico's Bureau of Business and Economic Research (BBER) as required given the project is a recipient of City funds.

The fiscal impact analysis demonstrates that the City will recoup the value of its investment within the term of the bonds.

FINDINGS:

1. IRB 19-3 is a qualified project as defined by the State's Industrial Revenue Bond Act and the City enabling legislation (Resolution R-196, Sixth Council (126-1985) as amended by Resolution 350 Sixth Council; and
2. IRB 19-3 would make positive substantive contributions to the local economy and community by creating 67 high-wage economic base jobs; and
3. IRB 19-3 will continue Albuquerque's position in the forefront of alternative energy research and development; and
4. IRB 19-3 would comply with the adopted City plans and policies, and meet community economic development priorities and objectives;
5. IRB 19-3 would adequately meet the evaluation criteria established by the City for Industrial Revenue Bond Act projects, including the requirement that the City recoup the value of its investment over the term of the bonds.

STAFF RECOMMENDATION:

Based on the above findings, staff recommends approval of LEDA 19-3 as proposed in the project plan application.

Deirdre M. Firth, Deputy Director
Economic Development Department

Table 2. IRB Analysis: Estimated Tax Revenues for Proposed Kairos Power Project, Including Incremental Tax, Present Value of City Taxes and Net Tax Increment, and Cumulative Net Present Value by Year (\$-dollars)

Percent Abatement: 80% (Personal Property, Real Property)
 75% (HH consumption, company expenditures, employee property (ea)
 100% (Utilities)
 LEDA donation: 5

Year	City Donation	Gross Receipts Taxes (GRT)				Property Tax		Municipal			State			Federal					
		Company Employee	Indirect and Induced Employee	Construction	Construction Employee	Utilities	Real (Company)	Personal (Company)	Real (Employee)	Other Taxes	Total Expenditures	Construction GRT	Utilities GRT	Real Property Tax	Real Property Tax	Personal Property Tax	Annual	Present Value	Current Utilize
2020		385	792	202,889	20,688	19,117	2,877	11,312	672	2,957,710	15,117	15,117	15,117	15,117	15,117	15,117	15,117	15,117	15,117
2021		36,270	7,470	91,339	19,079	36,264	12,863	3,044	987	1,511,813	36,264	36,264	36,264	36,264	36,264	36,264	36,264	36,264	36,264
2022		39,408	10,690			46,032	14,051	7,796	761	1,619,122	39,408	39,408	39,408	39,408	39,408	39,408	39,408	39,408	39,408
2023		36,854	10,990			47,844	14,579	8,340	1,000	1,676,344	36,854	36,854	36,854	36,854	36,854	36,854	36,854	36,854	36,854
2024		36,984	10,990			47,974	14,579	8,340	1,000	1,676,344	36,984	36,984	36,984	36,984	36,984	36,984	36,984	36,984	36,984
2025		36,984	10,990			47,974	14,579	8,340	1,000	1,676,344	36,984	36,984	36,984	36,984	36,984	36,984	36,984	36,984	36,984
2026		36,984	10,990			47,974	14,579	8,340	1,000	1,676,344	36,984	36,984	36,984	36,984	36,984	36,984	36,984	36,984	36,984
2027		36,984	10,990			47,974	14,579	8,340	1,000	1,676,344	36,984	36,984	36,984	36,984	36,984	36,984	36,984	36,984	36,984
2028		36,984	10,990			47,974	14,579	8,340	1,000	1,676,344	36,984	36,984	36,984	36,984	36,984	36,984	36,984	36,984	36,984
2029		36,984	10,990			47,974	14,579	8,340	1,000	1,676,344	36,984	36,984	36,984	36,984	36,984	36,984	36,984	36,984	36,984
2030		36,984	10,990			47,974	14,579	8,340	1,000	1,676,344	36,984	36,984	36,984	36,984	36,984	36,984	36,984	36,984	36,984
2031		36,984	10,990			47,974	14,579	8,340	1,000	1,676,344	36,984	36,984	36,984	36,984	36,984	36,984	36,984	36,984	36,984
2032		36,984	10,990			47,974	14,579	8,340	1,000	1,676,344	36,984	36,984	36,984	36,984	36,984	36,984	36,984	36,984	36,984
2033		36,984	10,990			47,974	14,579	8,340	1,000	1,676,344	36,984	36,984	36,984	36,984	36,984	36,984	36,984	36,984	36,984
2034		36,984	10,990			47,974	14,579	8,340	1,000	1,676,344	36,984	36,984	36,984	36,984	36,984	36,984	36,984	36,984	36,984
2035		36,984	10,990			47,974	14,579	8,340	1,000	1,676,344	36,984	36,984	36,984	36,984	36,984	36,984	36,984	36,984	36,984
2036		36,984	10,990			47,974	14,579	8,340	1,000	1,676,344	36,984	36,984	36,984	36,984	36,984	36,984	36,984	36,984	36,984
2037		36,984	10,990			47,974	14,579	8,340	1,000	1,676,344	36,984	36,984	36,984	36,984	36,984	36,984	36,984	36,984	36,984
2038		36,984	10,990			47,974	14,579	8,340	1,000	1,676,344	36,984	36,984	36,984	36,984	36,984	36,984	36,984	36,984	36,984
2039		36,984	10,990			47,974	14,579	8,340	1,000	1,676,344	36,984	36,984	36,984	36,984	36,984	36,984	36,984	36,984	36,984

Gross Receipts Taxes, Company Employees: Gross receipts taxes on local purchases by new operating personnel employed by applicant.
Gross Receipts Taxes, Indirect and Induced Employees: Gross receipts taxes on local spending by those supported by company's purchases of local goods and services and by spending by spending companies.
Gross Receipts Taxes, Company Purchases: Gross receipts taxes on increased company purchases of local goods and services as a result of the project.
Gross Receipts Taxes, Company Sales: Only sales in-state generate gross receipts taxes.
Gross Receipts Taxes, Construction: Gross receipts taxes on contractor receipts and on local spending by construction workers and those supported indirectly by the project.
Other Revenues: Increased employment, resulting from the project, will increase Allegheny's population and the new population will pay taxes and various City charges for services. Taxes include property tax operating and held, various fees, franchise fees, state subject revenue (including other than property tax), permits and charges for services, including rent on city properties.
Total Revenues: Gross receipt tax revenues and other revenues associated with the additional population resulting from the project.
Corporate Property Taxes: Property taxes that would have been paid on land, buildings and equipment financed by the IRS. Title to population financed are held by the City and the population are exempt from taxes imposed on the local. There is a minimum requirement in form of taxes at top of the local corporate.
Corporate Sales Taxes: Gross receipts taxes that would have been owed on local equipment purchases in the absence of the IRS.
City Costs: Costs of providing city services and infrastructure to the additional population and additional employment supported by the project. Excess include special fees (including the ability for transit, city street and expenditures and private spending over past 5 years in the City's Capital Development Tax).
Fiscal Impact, Annual: The cost of services provided by the city is split between taxpayers (based on employment) and residents (based on residential population).
Fiscal Impact, Present Value: The annual fiscal impact to the local revenue less the cost to each year of the individual business plan.
Fiscal Impact, Cumulative: The annual fiscal impact to the local revenue less the cost to each year of the individual business plan. Also the discount rate to the net value of interest on 5% bond.
Company Purchases: Includes employee paid health care insurance as well as city expenditures.
Property Tax: Includes Real and Personal Property (to applicant and employees).

APPLICATION
for
INDUSTRIAL REVENUE BOND
Project Approval

Name of Project: Project Odyssey _____

Location of Project: 5201 Hawking Dr SE, Albuquerque, NM 87106____
And adjacent land parcels in Mesa del Sol _____

Company Name: Kairos Power, LLC _____

Contact Person: Ed Blandford, Chief Technology Officer _____

Address: 707 W Tower Ave _____
Alameda, CA 94501 _____

Telephone: 510.506.2857 _____

Email: blandford@kairospower.com _____

Counsel: David P. Buchholtz _____

Address: 201 Third Street NW, Suite 2200 _____
Albuquerque, New Mexico 87102 _____

Telephone: (505) 768-7244 _____

Bond Amount Requested: \$125,000,000 ___ Fee Submitted: \$2,500 _____

FOR STAFF USE

Staff Assigned: _____

Case Number: _____

Fee Received: \$ _____

ADC Hearing Date: _____

Council Dates (Tentative): Introduction _____
Committee _____ Council Hearing _____

I. GENERAL DESCRIPTION

Kairos Power, founded in fall 2016, is an advanced energy technology and engineering company launched out of a broad research effort at U.S. universities and national laboratories with whom the company maintains strong working relationships. These relationships include the University of New Mexico and Sandia National Laboratories and Los Alamos National Laboratories in New Mexico. Kairos Power was founded to accelerate the development of a clean, innovative nuclear technology that has the potential to transform the energy landscape in the United States and around the world. The company has been honored as an award recipient under multiple U.S. Department of Energy (DOE) programs as detailed later in this application and is led by talented professionals with extensive research experience and academic credentials from leading universities in the field as highlighted in the biographies and resumes later in this application.

Project Odyssey will primarily be an R&D operation focused on the engineering, development and non-nuclear testing of technology to utilize low-pressure molten fluoride salt as a coolant in a novel advanced nuclear reactor with an inherently safe design based on synergies between the fuel source, salt coolant, and passive safety mechanisms. Nuclear material will not be utilized on site; the purpose of the proposed facilities is the development and testing of the salt coolant technology and related systems.

This project will continue the legacy of Albuquerque and the State of New Mexico in developing safe, innovative alternative energy solutions. Kairos is uniquely positioned to help develop and strengthen linkages between the University of New Mexico and the National Labs in the area to develop, test and ultimately to deploy exciting new technology that will help the United States address the next wave of energy needs as existing power generate facilities begin to reach the end of their useful life. Kairos power will create 67 high quality jobs with an average salary in excess of \$100,000 and will make a capital investment of over \$100 million in the city of Albuquerque, resulting in a substantial economic impact. Additionally, the company anticipates being a strong corporate citizen. The company plans to be one of the driving forces behind the establishment of a skills development and training consortium focused on key technical skills relevant to Kairos Power, the national labs, other interested companies, and educational institutions (CNM, NMSU, UNM, and NM Tech) in the area. Given the company's anticipated significant electric power requirements, the project will also serve as the impetus for PNM to invest in significant electrical infrastructure improvements in Mesa del Sol that will benefit Project Odyssey but also support future business development in the area.

Project Odyssey has identified property in the Mesa del Sol Development including the former Schott Solar building at 5201 Hawking Dr SE and adjacent parcels; all together, the project would include just over 32 acres. As part of the company's future development plans, the Schott Solar facility will ultimately be repurposed for advanced energy technology research and development related to the Kairos Power's area of focus.

If approved, the industrial revenue bond proceeds will be utilized to finance acquisition of the land and the existing Schott Solar facility as well as construction of the new R&D facilities. The total project cost could be as much as \$125 million.

II. SITE AND EXISTING CONDITIONS

A. Legal Description

The proposed property for Project Odyssey is at 5201 Hawking Dr SE, Albuquerque, NM 87106 and adjacent vacant parcels. Legal descriptions are below:

Lot D-1, 16.4161 Acres

TR D-1 PLAT OF TRACTS D-1 THRU D-7 MESA DEL SOL INNOVATION PARK II
(A SUBDIVISION OF TRACT D MESA DEL SOL INNOVATION PARK II)

Lot D-2, 3.7660 Acres

TR D-2 PLAT OF TRACTS D-1 THRU D-7 MESA DEL SOL INNOVATION PARK II
(A SUBDIVISION OF TRACT D MESA DEL SOL INNOVATION PARK II)

Lot D-3 / Schott Building, 12.0217 Acres

TR D-3 PLAT OF TRACTS D-1 THRU D-7 MESA DEL SOL INNOVATION PARK II
(A SUBDIVISION OF TRACT D MESA DEL SOL INNOVATION PARK II)
5201 Hawking DR SE, Albuquerque NM 87106

B. Prevailing Site Conditions

The property includes the former Schott Solar building (approximately 113,000 sq. ft. manufacturing facility) and adjacent land parcels. Currently, the Schott building on Parcel D-3 is essentially vacant; part of the office space is being used as temporary meeting space and locker rooms for the New Mexico United soccer team, and part of the manufacturing space is being used to store some hemp processing equipment. Land parcels D-1 and D-2 are vacant, development-ready property.

C. Present Assessed Value

Parcel	Description	Total Full Value	Net Taxable Value
TR D-1	16.4161 Acres	\$1,114,900	\$381,595
TR D-2	3.7660 Acres	\$320,500	\$106,822
TR D-3	12.0217 Acres / Schott Building	\$4,836,000	\$1,611,839

D. Present and Proposed Zoning

The site is currently in an IDO Zone District with designation PC (Planned Community)
No changes will be required for the proposed use.

E. Renewable Energy

The company does not have plans to utilize renewable energy on-site.

III. PROJECT PLAN

A. Information Concerning Applicant

Kairos Power, LLC is single member LLC. A separate LLC to hold the real estate is in the process of being established and will be wholly owned by Kairos Power, LLC. Kairos Power was founded in fall 2016 and is based in the San Francisco Bay area in Alameda, CA. The company's team of nearly 120 employees is a diverse mix of highly motivated engineers, business professionals, and support staff; 90 percent of the company's workforce has an engineering background, and many joined the Kairos team from Department of Energy National Laboratories with which the company maintains strong ongoing working relationships.

Kairos Power is privately funded and is not dependent on federal funding. However, the company has been honored as an award recipient under many U.S. Department of Energy (DOE) programs to advance nuclear energy research and technology, including the Department of Energy Nuclear Science User Facilities (NSUF), allowing the company to conduct high-power Tri-structural Isotropic (TRISO) fuel particle irradiations, working closely with DOE National Laboratories to do so. The company has also received an award from the Office of Technology Transitions (OTT) Technology Commercialization Fund (TCF) aimed at strengthening partnerships between the DOE and private sector companies to deploy technologies to the marketplace.

Brief summaries of the relevant experience of the three co-founders of Kairos Power are included below and their resumes are attached. Additional information about other key individuals with the company can be found on the company's website.

Michael Laufer, Co-Founder and Chief Executive Officer

Dr. Michael Laufer is the Co-Founder & CEO of Kairos Power. In this role, Dr. Laufer is responsible for high level strategy and operations within the company for Kairos Power's design, development, and commercialization of the Kairos Power Fluoride-Salt-Cooled High-Temperature Reactor (KP FHR).

Prior to co-founding Kairos Power, Dr. Laufer was a postdoctoral scholar at the University of California, Berkeley where his research included work in reactor safety, design, licensing, and code validation for advanced non-light water reactors. His technical expertise includes experimental and discrete-element simulation methods for granular flows relevant to pebble-bed nuclear reactors.

Dr. Laufer graduated from Stanford University with a B.S. in Mechanical Engineering with Honors in International Security Studies. He received his Ph.D. in Nuclear Engineering from the University of California, Berkeley.

Edward Blandford, Co-Founder and Chief Technology Officer

Dr. Edward Blandford is a Co-Founder & CTO of Kairos Power. He is responsible for technology development, experimental testing, modeling and simulation, and licensing activities at Kairos Power.

Prior to co-founding Kairos Power, he was at the University of New Mexico where he was an assistant professor in the Department of Nuclear Engineering. Dr. Blandford was also a Stanton Nuclear Security Fellow at the Center for International Security and Cooperation at Stanford University. He also worked for several years as a project manager at the Electric Power Research Institute focusing on steam generator thermal-hydraulics and material degradation management.

Dr. Blandford has a B.S. in Mechanical Engineering from University of California, Los Angeles and a M.S. and Ph.D. in Nuclear Engineering from the University of California, Berkeley.

Per Peterson, Co-Founder and Chief Nuclear Officer

Dr. Per Peterson is a Co-Founder & Chief Nuclear Officer of Kairos Power. Dr. Peterson also holds the William and Jean McCallum Floyd Chair in the Department of Nuclear Engineering at the University of California, Berkeley.

He is an expert in topics related to high-temperature fission energy systems, safety and security of nuclear materials, and waste management. As a member of the Evaluation Methodology Group, he participated in the development of the Gen IV Roadmap while serving as co-chair for the Proliferation Resistance and Physical Protection Working Group. His research has contributed to the development of the passive safety systems used in the General Electric ESBWR and Westinghouse AP1000 reactor designs. With Charles Forsberg and Paul Pickard, in 2003, he proposed the FHR concept of a molten-salt cooled, solid fueled reactor.

Dr. Peterson graduated from the University of Nevada at Reno with a B.S. in Mechanical Engineering. He holds an M.S. and Ph.D. in Mechanical Engineering from the University of California, Berkeley.

B. Tax Issues

Please see attached letter stating Kairos Power LLC has no outstanding substantive federal, state or local tax issues.

C. Information Concerning Products and Process

The purpose of the proposed operation is the development and testing of advanced salt coolant technology and related systems. The proposed operation will primarily focus on the engineering, development and testing of technology to utilize low-pressure molten fluoride salt as a coolant in a novel advanced nuclear reactor with an inherently safe design based on synergies between the fuel source, salt coolant, and passive safety mechanisms. *It is important to note that nuclear material will not be utilized on site.*

The proposed operations will not generate any notable air, noise, or waste pollution. Given the modest proposed employment level and focus on research and development rather than on manufacturing, there will not be significant employee or truck traffic associated with the project. From time-to-time large pieces of testing equipment will be shipped in for installation, particularly during facility construction.

D. Competition

The research and technology development to be conducted by Kairos Power in Albuquerque is extraordinarily unique with few competitors globally and none locally or even in the state of New Mexico. There are some research synergies with the National Labs in the area.

E. Effect on Existing Industry and Commerce during and after Construction

Based on the anticipated construction cost, it is estimated that 172 FTE construction jobs will be supported during the construction period (2021 and 2022). Once the facility is fully operational, 67 full-time high-quality R&D jobs will be created. Given the nature of the proposed testing operations, significant quantities of electricity and natural gas will be utilized, resulting in significant local purchases from PNM and NMGCO.

F. Land Acquisition

IRB proceeds will be used to acquire the property. The company is currently preparing a written offer to purchase the property subject to approval of a LEDA award and IRB financing.

G. Description of Proposed Development

Current plans for 2020 include construction of a small chemical processing facility of approximately 5,500 sq. ft. that will be less than 25 feet in height and a 9,000 sq. ft. facility that will be 40 – 50 feet in height. In 2021, the current plan includes construction of an 80,000 sq. ft. facility that will be up to 80 feet high to accommodate very large testing equipment. The latter facility may be downsized somewhat given Kairos is also acquiring the Schott Solar building which was not part of the original project plan; however, since the building does not have the required ceiling heights, it is not expected that the plans for the 80,000 sq. ft. facility in 2021 will be substantially altered. At this juncture it is yet to be determined whether the proposed new structures will be attached to the existing building; the original concept for the site called for a campus of several buildings. Regardless, all new construction is expected to be attractive, high-quality metal over block style that will mesh well into the Mesa del Sol development and meet the established standards for the area.

H. Infrastructure

No significant water, sewer or road infrastructure improvements are required; only short extensions will be needed. The company has explored utilizing water from the nearby water reuse line, which would necessitate a somewhat longer extension. Natural gas is also proximate. The most significant infrastructure improvement required to meet the needs of the project when Phase 2 becomes operational in 2022 is an electrical substation. PNM has indicated it will construct a new \$20+ million substation in Mesa del Sol to meet the needs of this project and future development in the area. This project will share in the cost of the substation through an initial up-front capital contribution as well as an investment credit recovered through the electric rate. PNM will absorb a large portion of the cost as part of general infrastructure improvements required to support anticipated growth in the area. The company anticipates paying substantial Water Utility Expansion Charge and Water Resource Charge as well as a significant Sewer Utility Expansion Charge.

I. Area Enhancement

The overall design of the Kairos facilities will be planned to integrate well into the Mesa del Sol development and will adhere to requirements of the development to ensure it contributes positively the overall image of the area.

J. Local Purchasing

Estimated local purchases of goods and services other than utility services are expected to be negligible. Annual utility expenditures are very significant and are shown in the table below; these are reflective of the planned operational ramp-up along with the assumption of a 5-year economic development rate in effect for electric service (undiscounted total shown in 2026). No annual increase in the applicable base rates is assumed in the figures shown. Future increases are difficult to predict as they depend on decisions by other parties; we leave it to you to utilize whatever increase you deem appropriate for modeling purposes.

Year	Electric	Natural Gas	Water	Sewer
2021	\$1,215,241	\$43,899	\$18,019	\$31,817
2022	\$2,381,479	\$692,627	\$178,727	\$178,652
2023	\$4,886,014	\$2,489,981	\$642,831	\$587,342
2024	\$4,972,969	\$2,489,981	\$642,831	\$587,342
2025	\$5,179,008	\$2,489,981	\$642,831	\$587,342
2026	\$5,443,018	\$2,489,981	\$642,831	\$587,342

In addition to the substantial utility purchases shown above, the company will likely utilize local groundskeeping and facility maintenance services, janitorial services, equipment maintenance services, and security services. Miscellaneous office and facilities supplies will also likely be purchased locally.

K. Water Conservation

Water use is expected to be minimal for the initial phases of the operation – 600 gallons / day or 18,000 gallons / month. When the last planned phase becomes operational in 2022, water consumption is expected to increase to a maximum of 600,600 gallons / day or 18,018,000 gallons / month. These are high-end estimates used for the site selection process to ensure sufficient capacity would be available. The company’s engineering team is currently reviewing means to reduce water consumption through use of alternative cooling technologies and recirculation of cooling water. The company fully expects to be able to utilize water from the nearby water reuse (purple) line for all, but the potable water required for the facility.

L. Relocation of Individuals or Businesses

The proposed site is essentially vacant. The company plans to work with building ownership to accommodate the needs of the New Mexico United soccer team’s use of the office space until such time as the team’s new permanent facility is ready. Similarly, the company will be working with current ownership to ensure minimal disruption to the small hemp processing operation that is presently utilizing a small portion of the building.

M. Number and Types of Jobs Created

The anticipated new job employment ramp-up schedule is shown in the table below:

Hires by Year

Position	2020	2021	2022	2023	2024	Total	Est Salary 2020	Est Salary 2021	Est Salary 2022	Est Salary 2023	Est Salary 2024
Chemical Plant & System Operators		9				9	\$72,000	\$74,160	\$76,385	\$78,676	\$81,037
Operations Supervisor		1	1			2	\$68,000	\$70,040	\$72,141	\$74,305	\$76,535
Laboratory Technician		2	2			4	\$70,000	\$72,100	\$74,263	\$76,491	\$78,786
Chemical Technicians		3				3	\$60,000	\$61,800	\$63,654	\$65,564	\$67,531
Mechanical Engineer		1				1	\$100,000	\$103,000	\$106,090	\$109,273	\$112,551
Process / Chemical Engineer		1				1	\$125,000	\$128,750	\$132,613	\$136,591	\$140,689
Electrical Engineer		1				1	\$120,000	\$123,600	\$127,308	\$131,127	\$135,061
Facilities Manager		1	1			2	\$90,000	\$92,700	\$95,481	\$98,345	\$101,296
Nuclear Engineers		8	6	8	10	32	\$125,000	\$128,750	\$132,613	\$136,591	\$140,689
Administrative Assistant		1				1	\$35,000	\$36,050	\$37,132	\$38,245	\$39,393
Technical Director / Fellow	1	1				2	\$210,000	\$216,300	\$222,789	\$229,473	\$236,357
Administrative Services Manager	1					1	\$90,000	\$92,700	\$95,481	\$98,345	\$101,296
Industrial Machinery Mechanics		1				1	\$59,000	\$60,770	\$62,593	\$64,471	\$66,405
Machinist		2	2			4	\$58,000	\$59,740	\$61,532	\$63,378	\$65,280
Health and Safety Engineers		1				1	\$121,000	\$124,630	\$128,369	\$132,220	\$136,187
Warehouse Worker	1		1			2	\$37,000	\$38,110	\$39,253	\$40,431	\$41,644
Total	3	33	13	8	10	67					

- 1) *What percentage of the permanent new jobs is expected to be filled by current Albuquerque area residents, as opposed to people relocated from elsewhere?*

The 67 new jobs will likely include 10 – 13 engineers transferring from the company’s California facility in 2023 and/or 2024. Albuquerque is uniquely positioned to provide professionals with the specialized skills and knowledge required for the proposed operation. However, given the rapid ramp-up and nationwide competition for the engineering skills, it may not be possible to hire all of the required staff locally, though the company will certainly make every effort to do so.

- 2) *Will jobs benefit low and moderate income residents?*

All positions will be made available to all qualified applicants.

- 3) *Will the jobs meet or exceed median wages for the industry within the community?*

Yes. The facility will have an average salary of approximately \$100,000

- 4) *Will the jobs match skills of current city residents?*

Yes. Part of the appeal of Albuquerque for this project is the skill set present in the region with the university, the national labs, and other major technology companies.

- 5) *Will new employees be trained to fill the positions?*

Yes. The company is anticipating it will utilize the Job Training Incentive Program and is looking to spearhead a consortium focused on key technical skills relevant to Kairos Power, the national labs, other interested companies, and educational institutions (CNM, NMSU, UNM, and NM Tech) in the area.

6) *What stated advancement opportunities are there?*

Kairos Power fully supports advancement from within. As a growing, entrepreneurial business, there are ample opportunities for team members who wish to advance to do so, either in management or through leadership of technical teams.

7) *Will “Job Training Incentive Program” or other job training programs be used?*

Yes

8) *Will at least 50% of health insurance premiums be covered for employees?*

Yes. The company pays for 100% employee’s premiums for medical, dental, and vision coverage. In addition, the company pays for a majority of employee’s dependent(s) premiums—medical at 100%, dental and vision at 85%.

N. Corporate Citizenship Policy/Plan

Kairos Power is committed to participating in events in cooperation with other charities or organizations that give back to our communities at least twice a year. We do this for both our Kairos Power locations, CA and NC, and expect to continue this practice in Albuquerque, NM. Most recently the events the company hosted were (1) Build-a-Bike where approximately 100 bikes were built and donated for children in foster care in the Bay Area and Charlotte, NC; and (2) Save the Bay where the company contributed to the efforts of rescuing the marshlands in the Bay Area. In Q1 of the upcoming year the company is looking to work with Habitat-for-Humanity on a project. In addition to sponsoring events to benefit the community, we will begin to provide employees 8 hours per year for them to spend on volunteering outside of our company-wide events.

O. Positive Contributions

In terms of economic impact, the company will be creating 67 high-quality R&D jobs and will be making a \$100+ million capital investment in the community, adding to the property tax base. Additionally, the company will be a significant user of electricity and natural gas, resulting in additional gross receipts taxes. From a community development perspective, PNM is able to utilize the significant electric requirements of the project as the basis for making substantial upgrades to the electrical infrastructure in Mesa del Sol, supporting future growth and development in the area. From a workforce perspective, Kairos intends to support creation of a workforce development and training consortium focused on key technical skills relevant to Kairos Power, the national labs, other interested companies, and educational institutions (CNM, NMSU, UNM, and NM Tech) in the area. The training would likely focus on developing high-level technicians with skills in the area of electrical engineering, machining, welding, mechanical engineering, machinery maintenance, and chemical engineering. The goal will be to assist with developing a talent pipeline for future hiring needs for Kairos, the national labs, and other companies in the region through specialized skills training and internships.

P. Management

Kairos Power will manage all operations on site. In large part, the company’s desire to manage the facility itself has driven the timetable for this project. At this time, Kairos has yet to identify and hire a site manager but will be quickly working on that.

IV. **PROJECT FINANCING**

A. Cost of Improvements, Bond Amount and Private Financing

A summary of the total project investment is shown below:

(Millions)	Phase 0	Phase 1	Phase 2	Total
Land	\$6.3			\$6.3
Existing Building Purchase	\$5.9			\$5.9
New Building Construction	\$1.0	\$3.0	\$20.0	\$24.0
Equipment				
– Production M&E	\$15.5			\$15.5
– R&D Equipment		\$8.0	\$60.0	\$68.0
Sub-Total	\$15.5	\$8.0	\$60.0	\$83.5
Total Investment	\$28.7	\$11.0	\$80.0	\$119.7

Begin Construction	Q1 2020	Q1 2020	2020
New Bldg Investment	100% 2020	100% 2020	25% 2020 75% 2021
Equipment Investment	100% 2020	50% 2020 50% 2021	25% 2021 50% 2022 25% 2023
Begin Operations	Q1 2021	Q1 2021	Q 3 2022

An IRB in an amount not to exceed \$125,000,000 is requested to support the project; it is anticipated that the private equity from Kairos’ investors will finance the bond purchases. The exact amount of the bond amount will depend on the outcome of negotiations with the property owner and adjustments the company may make to future building plans based on acquiring the former Schott Solar building.

B. Estimated Value After Completion

The appraised value of the project after completion will be determined by the county assessor. It has been assumed that the appraised value will likely be somewhat close to the above noted costs associated with the investment, subject to depreciation over time.

C. Feasibility

Please see attached letter from BBR Partners, an investment firm managing assets for Kairos Power investors. This letter states the investors have sufficient financial assets for a project on the order of \$125 million and annual operating costs of \$9 million thereafter.

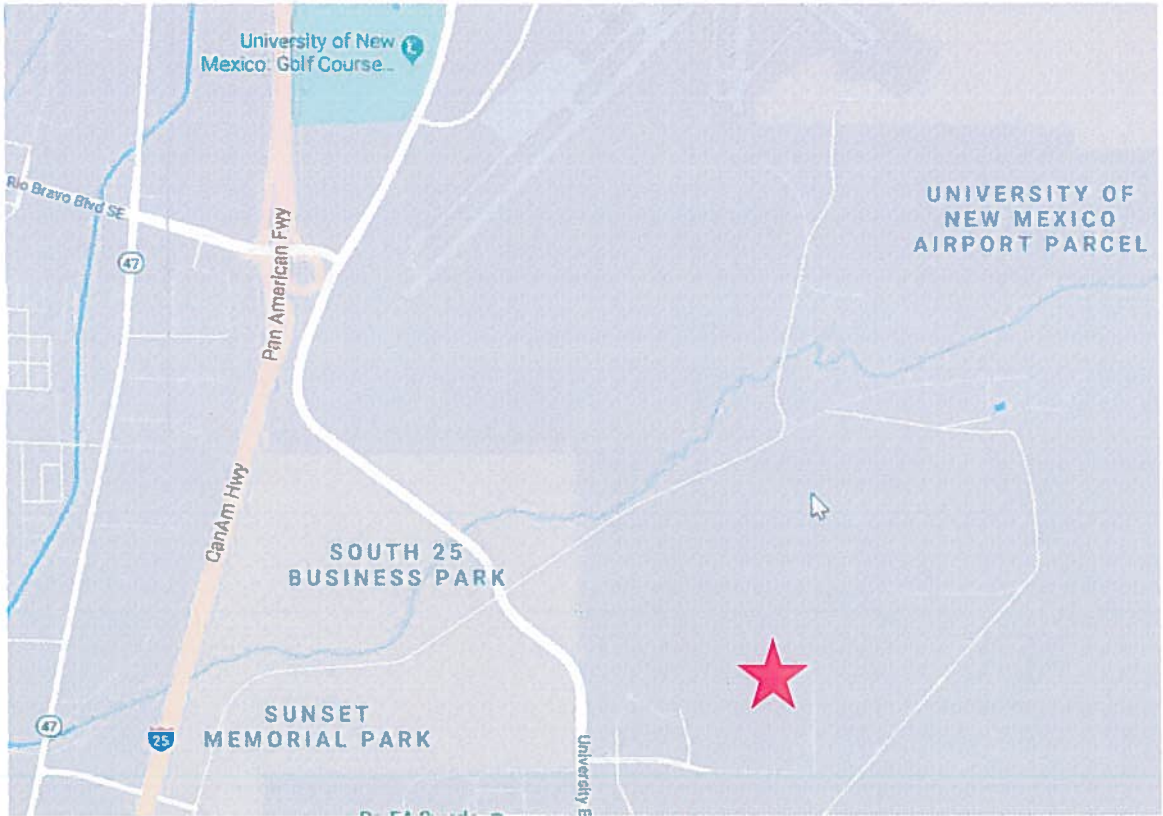
D. Construction Schedule

Construction of the initial phase will begin and end in 2020. Construction of the larger 80,000 sq. ft. facility for the later phase is expected to start late in 2020 with completion schedule late in 2021.

E. Issuance of Bonds

The anticipated date of bond issuance is February 15, 2020.

LOCATION MAP



Attachments

CURRICULUM VITAE

Michael R. Laufer

Kairos Power LLC

580 2nd Street, Suite 290

Oakland, CA 94607

Phone: 631-921-5713

Email: laufer@kairos-power.com

RESEARCH INTERESTS

Thermal-hydraulics in the design of advanced nuclear reactor concepts, coupled granular and fluid dynamics, nuclear reactor safety and licensing, probabilistic risk assessment, performance-based regulation, and simulation verification and validation.

EDUCATION

- 2007-2013 University of California, Berkeley. Berkeley, CA
Ph.D. in Nuclear Engineering, Completed in Spring 2013.
Thesis Title: *Granular Dynamics in Pebble Bed Reactor Cores*
- 2002-2006 Stanford University. Palo Alto, CA
B.S. in Mechanical Engineering with Honors in International Security Studies, June 2006.

PROFESSIONAL AND RESEARCH EXPERIENCE

- 2016-Present Kairos Power LLC. *Co-Founder and Chief Executive Officer.* Oakland, CA
Responsible for high level strategy and operations in nuclear energy technology and engineering company with a focus on commercialization of the Fluoride Salt-Cooled High-Temperature Reactor (FHR).
- 2013-2016 University of California, Berkeley. *Postdoctoral Scholar.* Berkeley, CA
Thermal Hydraulics Laboratory, Department of Nuclear Engineering
- 2006-2007 Electric Power Research Institute. *Student Employee.* Palo Alto, CA
Student employee in Nuclear Program.
- 2005 Carnegie Endowment for International Peace. *Intern.* Washington, DC
Summer intern and research assistant at the Carnegie Non-Proliferation Project.
- 2002, 2004 Ducati Corse. *Intern.* Bologna, Italy
Summer technical intern in the racing division of Ducati Motorcycles.
- 2001 State University of New York, Stony Brook. *Research Assistant.* Stony Brook, NY
Mentored by Prof. Ralph Wijers of SUNY Stony Brook Astronomy Department.

SELECTED PUBLICATIONS AND PROCEEDINGS

- C. Andreades, A.T. Cisneros, J.K. Choi, A. Chong, M. Fratoni, S. Hong, L.R. Huddar, K.D. Huff, J. Kendrick, D.L. Krumwiede, M.R. Laufer, M. Munk, R.O. Scarlat, N. Zweibaum, E. Greenspan, X. Wang, and P.F. Peterson, "Design Summary of the Mark-1 Pebble-Bed Fluoride Salt-Cooled, High-Temperature Reactor Commercial Power Plant," *Nuclear Technology*, Vol. 195, No. 3, September 2016.
- G.C. Buster, M.R. Laufer, and P.F. Peterson, "A Scaled Experimental Study of Control Blade Insertion Dynamics in Pebble-Bed Fluoride-Salt-Cooled High-Temperature Reactors," *Nuclear Engineering and Design*, Vol. 303, July 2016.
- G.C. Buster, M.R. Laufer, and P.F. Peterson, "Fracture Analysis of Reduced Diameter Spherical Graphite Fuel Elements under Diametrical Loading Conditions," UCBTH-15-004, University of California, Berkeley, May 2015.
- M.R. Laufer and G.C. Buster, "X-Ray Pebble Recirculation Experiment (X-PREX) Design and Initial Experimental Results," UCBTH-15-002, University of California, Berkeley, January 2015.
- R.O. Scarlat, M.R. Laufer, E.D. Blandford, N. Zweibaum, D.L. Krumwiede, A.T. Cisneros, C. Andreades, C.W. Forsberg, E. Greenspan, L. Hu, and P.F. Peterson, "Design and Licensing Strategies for the Fluoride-Salt-Cooled, High-Temperature Reactor (FHR) Technology," *Progress in Nuclear Energy*, Vol. 77, November 2014.
- N. Zweibaum, G. Cao, A.T. Cisneros, B. Kelleher, M.R. Laufer, R.O. Scarlat, J.E. Seifried, M.H. Anderson, C.W. Forsberg, E. Greenspan, L. Hu, P.F. Peterson, and K. Sridharan, "Phenomenology, Methods, and Experimental Programs for Fluoride-Salt-Cooled, High Temperature, Reactors (FHRs)," *Progress in Nuclear Energy*, Vol. 77, November 2014.
- M.R. Laufer, J.E. Bickel, G.C. Buster, D.L. Krumwiede, and P.F. Peterson, "The X-Ray Pebble Recirculation Experiment (X-PREX): Facility Description, Preliminary Discrete Element Method Simulation Validation Studies, and Future Test Program," Proceedings of International Topical Meeting on High Temperature Reactor Technology (HTR 2014), Weihai, China, October 27-31, 2014.
- C. Charalampous, A.T. Cisneros, J.K. Choi, A. Chong, M. Fratoni, S. Hong, L.R. Huddar, K.D. Huff, D.L. Krumwiede, M.R. Laufer, M. Munk, R.O. Scarlat, N. Zweibaum, E. Greenspan, P.F. Peterson, "Technical Description of the 'Mark 1' Pebble-Bed Fluoride-Salt-Cooled High-Temperature Reactor (PB-FHR) Power Plant," UCBTH-14-002, University of California, Berkeley September 2014.
- P.F. Peterson, M.R. Laufer, and E.D. Blandford, "Nuclear Freeze: Why Nuclear Power Has Stalled – And How to Restart It," *Foreign Affairs*, Vol. 93, No. 3, May/June, 2014.
- R.O. Scarlat, M.R. Laufer, and A.T. Cisneros, "Preliminary Fluoride Salt-Cooled High Temperature Reactor (FHR) Subsystems Definition, Functional Requirements Definition, and Licensing Basis Event (LBE) Identification White Paper", UCBTH-12-001, University of California, Berkeley, February 2012.
- M.R. Laufer, E.D. Blandford, P.F. Peterson, "Overview of the Technology Development Path and Experimental Program for the Pebble-Bed Advanced High Temperature Reactor," Proceedings of International Conference on Emerging Nuclear Energy Systems (ICENES 2011), San Francisco, California, USA, May 15-19, 2011.
- J.E. Bickel, M.R. Laufer, L. Li, A.T. Cisneros, and P.F. Peterson, "Conceptual Design, Experiments, and Analysis for the Core of an FHR-16 Test Reactor," Proceedings of International Congress on Advances in Nuclear Power Plants (ICAPP '10), San Diego, California, USA, June 13-17, 2010.

CURRICULUM VITAE

Edward D. Blandford
Kairos Power, 707A W Tower Ave., Alameda, CA 94501
(510) 506-2875 (office), (415) 793-1083 (mobile)
Email: blandford@kairospower.com

EDUCATION:

- Ph.D. 2010 *Physical Similitude of Hierarchical Engineered Systems*
Prof. P. F. Peterson (research advisor), University of California, Berkeley, Nuclear Engineering
- M.S. 2008 University of California, Berkeley, Nuclear Engineering
- B.S. 2002 University of California, Los Angeles, Mechanical Engineering

PROFESSIONAL EXPERIENCE:

- 2017- Co-founder and Chief Technology Officer, Kairos Power
- 2012-2016 Assistant Professor, University of New Mexico, Nuclear Engineering Department
- 2011-2012 Adjunct Research Assistant Professor, University of New Mexico, Nuclear Engineering Department
- 2011-2012 Stanton Nuclear Security Fellow at CISAC, Stanford University
- 2010-2011 Postdoctoral Fellow at CISAC, Stanford University
- 2007-2010 Graduate Student Researcher, University of California, Berkeley, Nuclear Engineering
- 2003-2006 Project Manager, Steam Generator Management Program, Electric Power Research Institute, Palo Alto, California
- 2002-2003 Member of the Technical Staff, Fuel Reliability Program, Electric Power Research Institute, Palo Alto, California

RESEARCH INTERESTS:

Nuclear reactor thermal-hydraulics in support of the safety of nuclear installations, probabilistic risk assessment, safeguards approaches for reprocessing facilities, physical protection strategies, best-estimate code validation and verification, and various topics in heat and mass transfer, fluid dynamics, and phase change.

RELEVANT PROFESSIONAL ACTIVITIES AND CONSULTING EXPERIENCE:

- 2014 Consultant to Mitsubishi Heavy Industries
- 2014 Chair, ANS Nuclear Installations Safety Division Program Committee
- 2013 Member of Independent Review of SONGS Unit 2 Restart Plans, Consultant to California Energy Commission
- 2010 Member of ANS President's Special Committee on SMR Generic Licensing Issues
- 2006 Member of Oconee Steam Generator Excessive Wear Root Cause Committee, Consultant to Duke Energy, Mississauga, Toronto

Per F. Peterson
Chief Nuclear Officer
Kairos Power
peterson@kairospower.com

Education

Ph.D. (1988) Mechanical Engineering, University of California, Berkeley.
MSME (1986) Mechanical Engineering, University of California, Berkeley.
BSME (1982) Mechanical Engineering, University of Nevada, Reno.

Research and Professional Experience

7/17- Chief Nuclear Officer, Kairos Power, LLC, Oakland CA
7/98- Professor - Nuclear Engineering Department, U.C. Berkeley
Research and teaching in heat and mass transfer, multi-phase/multi-component flows, thermal hydraulics, reactor safety, and nuclear materials management.
12/99- Mechanical Engineering Faculty Member, Lawrence Berkeley National Laboratory, Accelerator and Fusion Research Division
1/15-7/17 Executive Associate Dean, College of Engineering, U.C. Berkeley
7/00-7/05, 7/09-7/12 Chair - Nuclear Engineering Department, U.C. Berkeley
7/98-9/00 Chair, Energy and Resources Group, U.C. Berkeley
7/94-6/98 Associate Professor - Nuclear Engineering Department, U.C. Berkeley
6/90-6/94 Assistant Professor - Nuclear Engineering Department, U.C. Berkeley
6/89-5/90 JSPS Fellow - Tokyo Institute of Technology.
Japan Society for the Promotion of Science Fellow.
9/88-5/89 Assistant Specialist - Mechanical Engineering Department, U.C. Irvine.
Heat transfer research and teaching.
6/88-8/88 Guest Researcher - Tokyo Institute of Technology.
Research on reflux thermosyphons with multi-species mixtures.
8/85-5/88 Research Assistant - Mechanical Engineering Department, U.C. Berkeley.
Doctoral research in heat and mass transfer in condensing systems.
5/82-6/85 Engineer - Bechtel National, Inc., San Francisco, California
Design of systems for processing (vitrifying) high-level nuclear waste.

Selected Publications (from 110 archival journal and 140 peer-reviewed conference proceedings)

1. P.F. Peterson, "Theoretical Basis for the Uchida Correlation for Condensation In Reactor Containments," *Nuclear Engineering and Design*, Vol. 162, pp. 301-306, 1996.
2. P.F. Peterson, V.E. Schrock, and R. Greif, "Scaling for Integral Simulation of Mixing in Large, Stratified Volumes," *Nuclear Engineering and Design*, Vol. 186, pp. 213-224, 1998.
3. J. Woodcock, P.F. Peterson, D.R. Spencer, "Quantifying the Effects of Break Source Flow Rates on AP600 Containment Stratification," *Nuclear Technology*, Vol. 134, pp. 37-48, 2001.

4. C.W. Forsberg, P.F. Peterson, and P. Pickard, "Molten-Salt-Cooled Advanced High-Temperature Reactor for Production of Hydrogen and Electricity," *Nuclear Technology* Vol. 144, pp. 289-302 (2003).
5. R.O. Scarlat, A.T. Cisneros, T. Koutchesfahani, R. Hong, P.F. Peterson, "Preliminary Safety Analysis of a PBMR Supplying Process Heat to a Co-Located Ethylene Production Plant," *Nuclear Engineering and Design*, Vol. 251, pp. 53-59 (2012).
6. L. Huddar, R.O. Scarlat, N. Zweibaum and P.F. Peterson, "Overview of Passive Safety Features and Transient Model Validation for the Pebble-Bed Fluoride-Salt Cooled, High-Temperature Nuclear Reactor (PB-FHR)," 2013 AIChE Annual Meeting, Nuclear Energy and Sustainability Section, San Francisco, CA, November 3-8, 2013.
7. C. Andreades, R.O. Scarlat, L. Dempsey, and P.F. Peterson, "Reheat Air-Brayton Combined Cycle (RACC) Power Conversion Design and Performance Under Nominal Ambient Conditions," *ASME Journal of Engineering for Gas Turbines and Power*, vol. 136, No. 6, doi:10.1115/1.4026506 (2014).
8. N. Zweibaum, J. E. Bickel, Z. Guo, J. C. Kendrick, P. F. Peterson, "Design, Fabrication and Startup Testing of the Compact Integral Effects Test Facility in Support of Fluoride-Salt-Cooled, High Temperature Reactor Technology," International Topical Meeting on Nuclear Reactor Thermal Hydraulics (NURETH-16), Chicago, IL, August 30-September 4, 2015.

Synergistic Activities

- Member, U.S. Blue Ribbon Commission on America's Nuclear Future (2010-2012)
- Member, Evaluation Methodology Group (EMG), Generation IV Roadmap Project, 2001-2002.
- Co-chair, Proliferation Resistance and Physical Protection Working Group, Generation IV International Forum, 2002 - present.
- Member and Chair, Nuclear Science and Technology Division Advisory Committee, Oak Ridge National Laboratory, 2007 – (Chair 2013-2017)
- Member, Diablo Canyon Independent Safety Committee (2004-07, appointment by Attorney General of the State of California; 2008-present, appointment by Governor of the State of California).



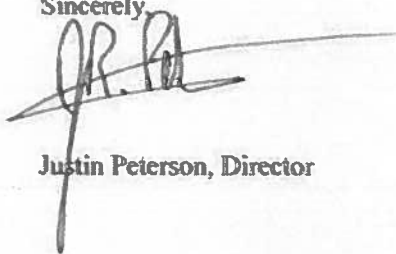
December 9, 2019

State of New Mexico

To Whom It May Concern:

My understanding is that Kairos Power LLC desires to engage in a project with an approximate capital investment of \$125,000,000 and annual operating costs of up to \$9,000,000. BBR Partners is an investment firm that manages assets for Kairos Power LLC investors. As of this date, these investors have sufficient financial resources for a project at that scale.

Sincerely



Justin Peterson, Director

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New York, NY 10017
Tel: 212.313.9870 Fax: 646.588.5024
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San Francisco
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San Francisco, CA 94111
Tel: 415.926.7111 Fax: 415.926.7122

Chicago
737 North Michigan Avenue, Suite 2260,
Chicago, IL 60611
Tel: 312.340.0920 Fax: 312.610.5657



707 West Tower Avenue
Alameda, CA 94501
510-808-5265

December 6, 2019

City of Albuquerque
Deputy Director
Economic Development Department
City of Albuquerque
One Civic Plaza
Albuquerque, NM 87103

Dear Ms. Deirdre Firth:

To the best of my knowledge, Kairos Power LLC has no outstanding substantive federal, state or local tax issues.

Best Regards,

A handwritten signature in black ink, appearing to read "Jeffrey D. Olson".

Jeffrey Olson
Vice President, Finance
Kairos Power

KAIROSPower.COM

兰州市人民政府

Dec 10, 2019

To: Mr. Timothy M.Keller

Mayor of city of Albuquerque, New Mexico

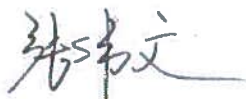
USA

Dear Mr. Keller,

On the occasion of the coming Christmas and New Year, on behalf of Lanzhou municipal people's government and Lanzhou people, I extend to you the best wishes and greetings. Wish you Merry Christmas and Happy New Year!

In the past year, our two cities have had good exchanges and cooperation in some fields. I believe, in the new year, the friendly exchanges and practical cooperation between the two cities in various fields will be further developed and contribute to the economic prosperity and social development of the two cities.

Warmest regards.



Zhang Weiwen

Mayor

Lanzhou Municipal People's Government
