pzcounter

From:	Kiki Tidwell <ktinsv@cox.net>
Sent:	Tuesday, October 11, 2016 7:39 AM
To:	pzcounter
Subject:	FW: NRG Resiliency and Sustainable Energy Strategy and Feasibility Study Proposal to Ketchum
Attachments:	NRG Resiliency and Sustainable Energy Strategy Proposal for Ketchum.pdf

To: P& Z

For the redundant transmission line discussion this week, please see attached a NRG proposal which could identify real costs of alternatives to the line. This could be completed during the month of November and should be undertaken before any acceptance of a $30 million line to be built in our scenic corridor. The P&Z should remember that Blaine County legislated against wind turbines within view of the Highway 75 scenic corridor. A transmission line would be higher than the turbine I proposed and would be for the entire length of our gateway into Sun Valley from Buttercup Rd.
Thank you,
Kiki

Kiki Tidwell
208-578-7769

RECEIVED
OCT 11 2016
BLAINE COUNTY
LAND USE & BUILDING SERVICES

D-7
EXHIBIT

Proposal for Techno-Economic Analysis of Resiliency Alternatives

Submitted to:

City of Ketchum, Idaho

September 8, 2016

Submitted to:
Aimee Christensen
Ketchum Energy Advisory Committee
Aimee@christensenglobal.com

Submitted by:
NRG
Lynda Clemmons
Vice President
1201 Fannin Street
Houston, TX 77002
713.537.5337
lynda.clemmons@nrg.com

RECEIVED
OCT 11 2016
BLAINE COUNTY
LAND USE & BUILDING SERVICES

NRG
1201 Fannin Street
Houston, TX 77002

September 8, 2016

Aimee Christensen, Ketchum Energy Advisory Committee

Re: Proposal for Resiliency and Sustainable Energy Strategy and Feasibility Study

Dear Ms. Christensen:

You may recall that we spoke some years back about Ketchum's reliability challenges. On behalf of NRG Energy, Inc. we are pleased to reestablish our relationship with Ketchum and continue the impressive work that has already been achieved towards making Ketchum a carbon neutral city. The attached proposal is for Techno-Economic Analysis of Resiliency Alternatives, including indicative cost-benefit analysis, to the proposed transmission line.

NRG and its affiliates under NRG Energy, Inc. comprise the largest deregulated retail electric provider and the largest competitive power generator in the nation. NRG's retail and wholesale portfolio, which encompasses renewable and conventional generation, provides Ketchum with access to unparalleled service capabilities, diverse product knowledge and an understanding of what it means to plan for the future.

NRG's experience with public private partnerships and working locally gives us sensitivity to the importance of stakeholder engagement. We want to work with the greater Ketchum community to conduct a techno-economic analysis of resiliency alternatives to the proposed transmission line.

A commitment to sustainability and real world experience make NRG the best possible choice to provide an indicative cost-benefit for viable technologies to address Ketchum's resiliency needs. Our dedicated experts bring a breadth and depth of experience we believe differentiates us from others and ensures Ketchum meets its energy goals.

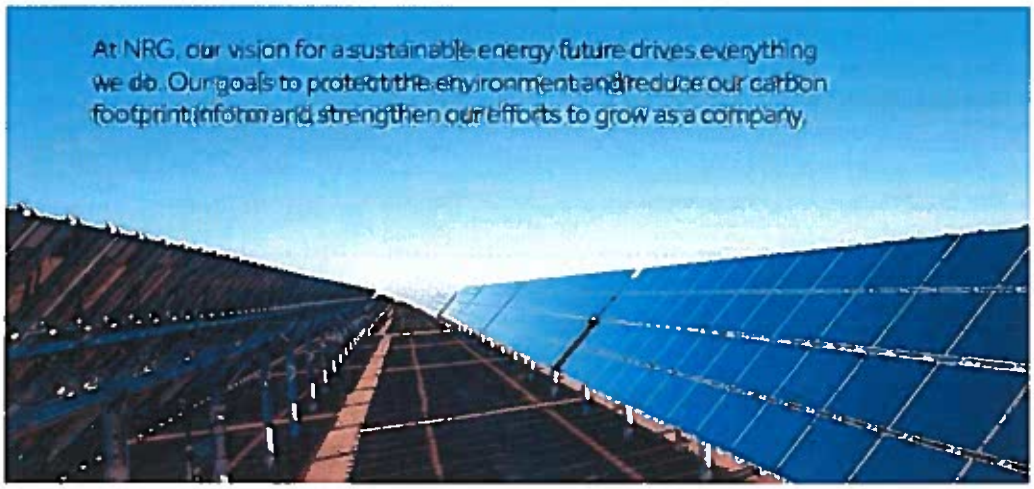
At NRG we have been thinking about the right way to give our communities the power to choose the power they use. Ketchum is to be commended for already making a choice for a better future. Before you read the following proposal, I invite you to watch this short video http://itson.nrg.com/the-power-behind-the-plug/.

If you have any questions regarding this response, please do not hesitate to contact me at 713.537.5337 or via email at lynda.clemmons@nrg.com.

NRG looks forward to reengaging Ketchum to conduct a techno-economic analysis to assess the feasibility of alternatives to the proposed transmission development while also advancing Ketchum's carbon reduction goals.

Sincerely,

Lynda Clemmons, Vice President, NRG Sustainable Products



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As Ketchum explores alternatives to a new 138kV transmission line intended to improve reliability, it is our hope that we would be able to apply our experience to Ketchum by conducting a techno-economic analysis grounded in our experience as the nation's third largest sustainable energy company. Pursuant to this, NRG will apply a technology agnostic approach to determine the most economically and environmentally effective method to achieve the city's resiliency and sustainability goals. The analysis will include an exhaustive review of various technologies to achieve resiliency, filtered through the lens of Ketchum's sustainability goals.

NRG understands the value of partnering with local government for a more sustainable future. NRG has collaborated with the City of Houston to achieve its energy goals. Named number one in the U.S. EPA's Top 30 Local Government list and number six on the National Top 100 list of the largest green power users from the Green Power Partnership, the City uses nearly 1 billion kWh of green power annually, representing over 75% of its total power needs. The City has a 30-MW solar PPA with NRG for municipal operations, and the City recently signed an agreement with NRG subsidiary Reliant to increase its purchase of Green-e certified renewable energy certificates, making the City the largest municipal purchaser of renewable power in the nation. NRG also installed the first EV charging stations on City sites in 2009 and is working with the City to develop the public EV infrastructure for Houston.

In establishing a partnership with Ketchum, NRG would like to have the same high level of involvement and integration. Through careful evaluation of opportunities, we will determine new, mutually beneficial ways to integrate with some of the city's upcoming initiatives. A continued innovative, thoughtful approach will be critical if Ketchum is to take advantage of opportunities to achieve carbon neutrality, and we look forward to working together to get there.

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Strategy and Implementation Plan

Conducting a Techno-Economic Feasibility Analysis

Consulting Overview

Over the last several years, NRG has worked with a number of strategic partners representing numerous industries to shape and develop roadmaps and action plans designed to help partners achieve their individual environmental sustainability, carbon reduction, and energy resiliency goals. From advising global consumer packaged goods company Unilever on ways to achieve carbon neutrality across its North American portfolio of sites by 2025, to working with Kaiser Permanente to install 70 MW of onsite solar across its California portfolio of facilities, and assisting Arizona State University in the development of an energy resiliency and implementation plan for many of its critical load research facilities, NRG has learned through experience methods of best practice for helping partners achieve their published sustainability objectives.

In conducting the techno-economic analysis to assess cost-benefit feasibility for Ketchum, NRG would draw from its experience with the aforementioned partners (and many others) to develop a plan that would best fit the needs of Ketchum. As a trusted partner, NRG would work with Ketchum to:

- **Leverage NRG's energy industry expertise** to conduct a techno-economic cost-benefit feasibility analysis to achieve resiliency and sustainable energy goals
- **Deliver indicative pricing** to compare with planned transmission line economics
- **Develop an integrated stakeholder engagement platform** to draw upon community involvement and participation.

Techno-Economic Feasibility Study

NRG will take a three-phased approach to developing Ketchum's cost-benefit analysis as follows:

Discovery *(1 week)*

1. Engage key Ketchum stakeholders to define business objectives, prioritize goals, and identify key performance indicators.

2. Develop an energy profile for Ketchum by examining current load, distributed generation composition, energy and resiliency requirements.

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Analysis *(2 weeks)*

3. Assess opportunities for on-site and off-site sustainable energy projects and load optimization by completing a rigorous evaluation across the following categories:
   a. Commercial: Evaluate spark spread and delivered energy historical pricing to inform economic evaluation.
   b. Sustainability: Review current sustainability strategy and assess how proposed projects would impact goals.
   c. Technology: Examine innovative energy technologies through the lens of community needs, commercial feasibility, and resiliency.

Recommendation *(1 week)*

4. Present a techno-economic cost-benefit analysis that includes a sourcing strategy with a prioritized development approach. The analysis will incorporate metrics for economic and environmental return on investment.

Community Stakeholder Engagement Platform

If one person can change the world, imagine what we can all do together...

Our plan calls for engaging Ketchum stakeholders during all phases of the partnership—from strategy development to implementation. We will do so by emphasizing:

1. Transparency: NRG will disclose information about project costs, materials, and sustainability impacts through our open book process.

2. Dialogue: NRG will establish multiple, two-way mechanisms for incorporating stakeholder input and feedback.

3. Direct Participation: NRG will create opportunities for community members to participate in the development and implementation of the strategy.

Specific opportunities to engage stakeholders in the planning and decision-making process will be determined in consultation with Ketchum and the community, and may include:

- Community Conversations: NRG engages local communities in conversations for every major project we implement.

- Utility Engagement: NRG's experience in implementing bold projects with utilities across the nation gives us the expertise to ensure smooth implementation of the plan.

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Technologies and Services Overview: Engineering the Best Fit

A large part of NRG's efforts to develop an effective cost-benefit analysis will involve an assessment of all viable sustainable energy technologies and solutions that may help Ketchum achieve its goals.

Once selected as Ketchum's partner to carry out the feasibility study, NRG would work with Ketchum to obtain any necessary specific energy consumption and physical infrastructure data in order to make more informed recommendations regarding optimal system locations, resiliency implications of viable technologies, as well as any major technical barriers and constraints that may impact solution implementation. Nonetheless, the following sections of this document will outline the preliminary technologies NRG will evaluate to assess whether the techno-economic profiles maybe good fits for Ketchum's resiliency and carbon reduction objectives.

Solar

NRG is prepared to work with Ketchum to explore the potential for onsite and offsite solar capacity. NRG's experience in the energy industry is unparalleled. As one of the United States' largest generators and retail electricity providers, NRG has unmatched insight into the energy sector. In developing a techno-economic study for Ketchum, we will leverage the same in-house experts that enable NRG to thrive as the largest independent power producer in the United States.

CHP and Backup Generation

As a result of years of experience building, operating, and maintaining a variety onsite reliability energy generation solutions, NRG is well positioned to advise Ketchum with respect to the total potential for an integrated suite of sustainable, resilient onsite energy technologies including CHP applications, backup generation, fuel cell technology, and waste heat recovery applications. Our Distributed Generation advisory platform combines the expertise of capabilities of two subgroups within our organization: Reliability Solutions, and NRG Thermal, with the latter being the company's core center of expertise for district energy and CHP systems.

If, after strategic review of the energy usage data across Ketchum's portfolio, NRG finds that there is viable potential for any additional cogeneration or backup generation capability, NRG will work with Ketchum to identify the appropriate technology and evaluate the relative costs and benefits of implementation.

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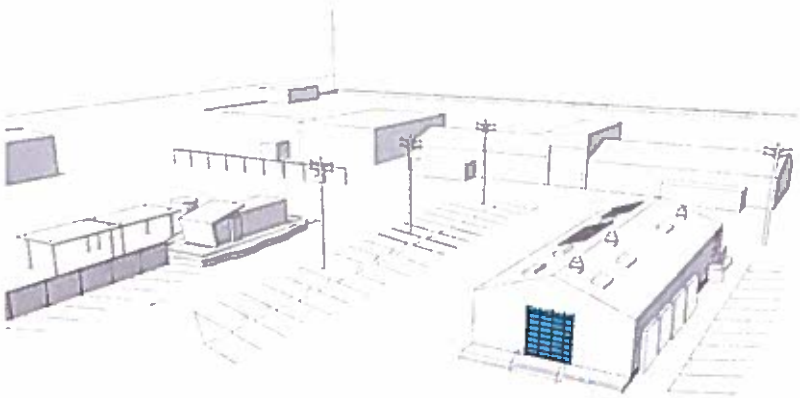
Energy Storage

To date, NRG has within our portfolio operational microgrid solutions that incorporate not only multiple generation and battery/thermal storage technologies, but also modular integrated control systems that are used to optimize storage technology performance. Additionally, we have worked to develop business partnerships with battery/thermal storage technology companies such as Ice Energy, TenK Solar, and Tesla to deliver reliable and innovative storage solutions in diverse energy markets across the United States.



NRG's Station A and Little House Microgrid

NRG sees the growing battery storage market as an area of high potential, and in working with Ketchum, we would be committed to exploring ways that energy storage applications could be used to address Ketchum's carbon reduction and reliability objectives.

After working with Ketchum stakeholders to assess the ways that a storage application may impact infrastructure and community goals with respect to carbon reduction and resiliency, NRG would work with Ketchum to evaluate the costs of a range of electrical and thermal storage technologies against the potential benefits, including demand-charge management, energy price arbitrage, and reliability and power quality. Should a configuration yield benefits to Ketchum, NRG will develop a technical and commercial proposal.

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Implementation Strategy and Timeline

The chart below outlines our implementation and strategy timeline for the first phase of a techno-economic cost-benefit engagement with Ketchum.

	Objectives	2016
1	**Task 1: Meetings and Communication**	Nov
1.1	Kick-off Meeting	
1.2	Weekly Status Calls	
1.3	WebEx Update	
1.4	Final Results Presentation	
2	**Review Previous Work and Collect Data**	
3	**Develop Systems Model**	
4	**Baseline Analysis and System Study**	
5	**Evaluate Technologies**	
6	**Analysis with Recommended Technologies**	
7	**Prioritize Potential Locations - GIS Mapping**	
8	**Existing System Integration - CAD**	
9	**Economic Feasibility Analysis**	
10	**Ownership and Operational Structure**	
11	**Budget and Implementation Plan**	
12a	**Draft Report**	
12b	**Final Report**	
13	**Quality Assurance / Control**	

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Financial and Budgetary Recommendations

NRG values our relationship with Ketchum and we seek to work with you in a way that builds trust and delivers value for both parties.

Our proposed fee structure for the development of Techno-Economic Cost-Benefit Analysis is as follows:

Phase I: $30,000 as a flat retainer.

We have built our fees estimate on the following assumptions and considerations:

- It is our hope that this process will be collaborative – to that end, we ask that you identify a project sponsor to support the engagement. The sponsor would also review key deliverables in a timely manner. Sponsor will:
- Be responsible for all management functions and decisions relating to the engagement.
- For in-scope metrics, enable access to the data owners and stakeholders for information and documentation in the data gathering and reporting processes relevant to those metrics and locations.
- Project analyst: access to your data typically requires a designated project analyst who would compile data requests from the relevant sources (e.g. from finance, payroll, facilities, operations); this data will be timely, accurate, and complete.
- If necessary, discuss and mutually agree on additional scope and fees.

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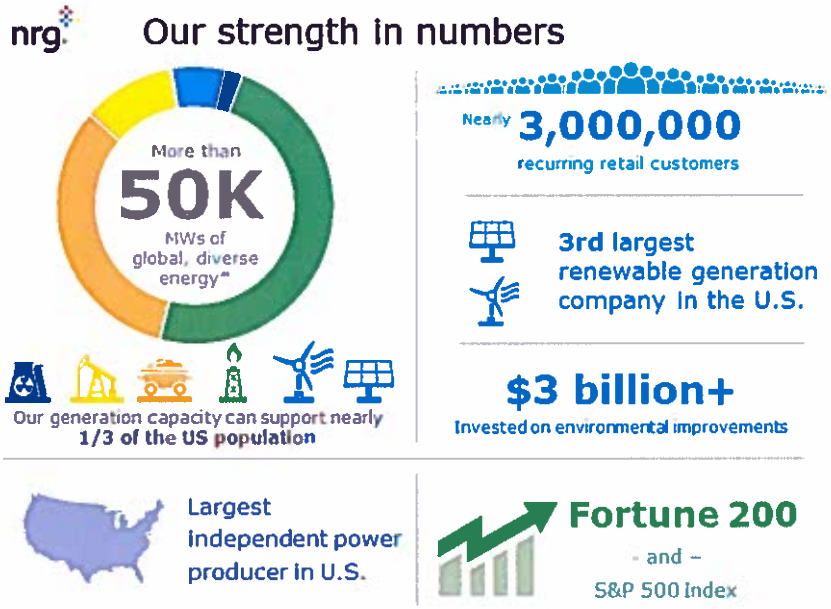
NRG Background

Energy Company of the 21st Century

NRG Energy, Inc. ("NRG") (NYSE:NRG), founded in 1989, is a Fortune 200 energy company with dual headquarters in Princeton, New Jersey and Houston, Texas. As the largest Independent Power Producer ("IPP") in the United States, NRG has a net generating capacity of approximately 50,000 MW, measured in alternating current ("MWAC"), and representing a diversified mix of fuel sources, generation technology, output configuration and geographical locations.

In addition to power production, NRG's wholesale operations trade energy, capacity and related products, and transact in and trade fuel and transportation services. NRG is one of the nation's largest electricity retailers, serving nearly 3 million residential, commercial, and industrial customers in competitive energy supply markets. NRG is also one of the nation's largest renewable generation owners and developers with more than 4,500 MWAC of renewable capacity in operation and/or under management. The company is also building the nation's first privately-funded electric vehicle charging infrastructure through its wholly-owned subsidiary NRG EVgo.



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Sustainability Vision

While the NRG sustainability vision is broad, bold and transformational, it's also simple and fully embedded into our fundamental business strategy. At NRG, it our aim to grow and diversify our businesses while dramatically reducing our carbon footprint. We are deeply committed to helping create a truly sustainable energy future in the long term without sacrificing consumer satisfaction or shareholder value in the process.

This means providing affordable, safe, clean and reliable energy that is produced in ways that liberate — not limit — our options as businesses, consumers and citizens. At NRG, we believe sustainable energy:

- Is compatible with healthy ecosystems and communities.
- Delivers a net positive impact for NRG.
- Can be made affordable, reliable and safe for our customers.
- Supports maximum value creation and growth for customers, shareholders, employees, suppliers, communities and other stakeholders.

Together, we're building a sustainable energy future — not just for ourselves, but for our children, grandchildren, and their children and grandchildren. To make this future a reality, we will leverage an increasingly diverse suite of energy sources, empower consumers with real choices and value, and streamline usage by developing and implementing cutting-edge efficiency and convenient demand-response initiatives

Meet the Team

Lynda Clemmons

Vice President, Sustainable Products

Clemmons is a Vice President in NRG Energy's Business Solutions group. Through key strategic alliances, she is working to create a shift to renewable energy systems that will transform us from a fossil fuel economy to a more sustainable one. She has been at NRG since 2012, incorporating all of the commercial products and services that enable Fortune 250 companies to achieve their sustainability goals.

Clemmons started her career as an analyst in an investment bank. She then spent eight years at Enron where she started the weather derivatives business as well as the SO2 and NOX emissions trading desk. In 2000, Lynda co-founded and was COO of XL Weather and Energy (a division of XL Capital Ltd), a trading and insurance company based in Connecticut. She also cofounded and was the former President of the Weather Risk

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Management Association. She holds BA degrees in History and French from Southern Methodist University and a Master of Finance from Tulane University.

Emerson Halstead

Manager, Sustainable Energy Advisory

Emerson Halstead serves as Presidential Fellow for NRG Energy Inc., where he provides strategic support to growth businesses and the Office of the CEO. In this role, he develops financial models, risk assessments, and other analytical tools to inform strategic decision making. Prior to this role, Emerson was a Strategy and Analytics Analyst for NRG Business Solutions. In this role, he built and managed the commodity pricing model for commercial and industrial delivered power, and provided geospacial and emerging technology analytics for commercial-scale renewable energy. Emerson began his career in the NGO sector where he worked internationally and domestically on public health issues. He earned a bachelor of science degree in communications from The University of Texas at Austin and a master's degree in business administration, with a focus on finance, from Indiana University.

Brian Reilly

Director, Business Development Renewables

Mr. Reilly has more than eleven years of energy project development and transaction experience. He is responsible for renewable energy development with Fortune 500 companies, off-grid renewable energy projects for the mining industry, and international development strategy in emerging markets. Through the origination and direction of multinational partnerships, he is able to align the interests of NRG Renew and its customer to realize long-term sustainable goals through ground-breaking renewable energy deployments. Prior to joining NRG, Reilly operated a proprietorship, Origen Consulting, where he performed portfolio valuation for a top-tier private equity firm on wind energy project acquisitions totaling $400 million, as well as developed market origination strategies for leading solar companies. He has also helped build an enhanced oil recovery company, C12 Energy, and managed assessment, land acquisition, and development efforts in the western U.S. Previously, Reilly originated and developed a portfolio of 1,600 MW of wind projects throughout the intermountain west on behalf of private investors and completed the portfolio sale of these assets. He holds a BA in Physics from Middlebury College, where he completed his senior thesis on a wind energy project for the College.

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Alan Cordova

Manager, Business Development

Alan Cordova is a Business Development Manager with the dGen (Distributed Generation) group of NRG Energy. He coordinates customer engagement, proposal development and project development for commercial/industrial-scale combined heat and power (CHP), fuel cell, energy storage and microgrid installations.

He previously worked for the independent power producer EDP Renewables North America, the solar energy developers NorthLight Power and Garden Solar, as well as the offshore wind developer BlueWater Wind. He earned an MBA from Columbia Business School and a BA in Political Science & Astronomy from Williams College.

Greg Kandankulam

Specialist, Sustainability

Greg Kandankulam is a Sustainability Specialist with NRG. He has 15 years' experience in strategic analysis, financial modeling and project management with a sustainability focus. Mr. Kandankulam has a strong background in power plant operations, smart grid assets and utility regulatory environments. He is currently creating a framework for managing NRG's carbon reduction strategy with respect to growing a renewable portfolio and fossil fleet asset management. Within this context he is collaborating with the World Resource Institute on a GHG standard for avoided emissions within the energy industry.

Greg holds an MBA from Presidio Graduate School in Sustainable Management and a BSAST in Nuclear Engineering from Thomas Edison State College. Mr. Kandankulam has previously held positions as a Program Manager of a Public-Private Partnership for the Dutch government, based on sustainable energy projects, and as a chief nuclear mechanical operator in the U.S. Navy for six years. He also serves as a Sustainability Commissioner for the City of Sausalito in California.

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Erik Urosa

Senior Analyst, Business Development

Erik supports NRG's Distributed Generation team in the sales process, leads engineering and financial analysis, and performs due diligence tasks during contract negotiations and project closings. Prior to NRG, Mr. Urosa spent time in SunEdison's Project Finance and O&M teams through a rotational program, held internship positions at Citigroup and TerraCycle, and performed extensive engineering research at his alma mater. He holds a B.S. in Chemical Engineering from Yale University.

Nekabari L. Goka

Analyst, Business Development

Nekabari is an analyst with NRG's Business Solutions group, providing business development operations and policy support for large commercial and industrial clients seeking to achieve their overall carbon reduction goals through the use of renewable energy and demand management technologies. Prior to joining NRG in 2014, Nekabari worked in business development for Sustainable Development Concepts Inc., where he led the company's efforts to provide political and economic advisory services to clients seeking to develop greenfield renewable and alternative energy projects in the U.S., Ghana, and Mexico. A native of Atlanta, Nekabari began his career as a member of the Georgia Department of Economic Development's Global Commerce Division, working with U.S. agricultural industry clients to develop export and international trade strategies for business expansion in the Middle East and Southeast Asia.

Nekabari holds a Masters of Science in International Affairs from The Georgia Institute of Technology with research focuses in international trade and energy policy, as well as science and technology for development. Additionally, he holds Bachelor of Arts degrees in both Economics and International affairs from The University of Georgia. An active participant in Houston community affairs, Nekabari serves as a member of the International Investment and Trade Committee of the Greater Houston Partnership, a community based economic development organization that engages Houston stakeholders in efforts to promote regional economic prosperity.

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Laura Avant

Analyst, Market Research

Laura is a Market Research Analyst at NRG. She is part of a multi-disciplinary analytics team specializing in C&I transactions and building the foundation for strategic partnerships. Laura's focus is on competitive intelligence across a wide range of sectors including energy, industrials, business services and renewables.

Prior to joining NRG Laura worked in the marketing and communication field as a brand strategist for the oil & gas and petrochemical industries; bringing two new sustainable products to market and leading a company-wide rebranding effort. Laura graduated from Arizona State University with a B.A. in Sustainability.

Laurel Peacock

Senior Manager, Sustainability

Laurel is a Senior Manager of Sustainability for NRG Energy, a company at the forefront of changing how people think about and use energy. Laurel supports the Chief Sustainability Officer in strategy creation, executive engagement and corporate communications. In this role, she also leads all voluntary sustainability reporting processes to foster industry leadership and create shareholder value during NRG's transformation into the nation's leading provider of reliable, clean, sustainable energy.

Prior to NRG, Laurel spent time as a consultant at Blu Skye, a boutique sustainability strategy and management consulting firm in San Francisco. There she worked with multiple clients in consumer product goods, manufacturing, health and agriculture industries. The projects ranged from supply chain strategy to systems thinking to employee engagement. Before Blu Skye, she was in marketing and public relations for a multinational winery in Napa Valley where she championed energy and packaging efficiency projects and organic viticulture practices. Laurel earned an MBA from San Francisco State University with an emphasis in Sustainable Business and a BA from Claremont McKenna College. She currently resides in Oakland and travels with an extension cord in her trunk so she can plug her electric vehicle in wherever the road may take her.

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Appendix A – Strategic Advisory Experience

NRG brings the financial stability of a Fortune 200 company and the experience of a multi-faceted energy company (including wholesale generation, demand response, and retail businesses), enabling it to deliver a unique and comprehensive set of solutions to meet Ketchum's needs.

Embracing new and revolutionary technologies like solar, wind and fuel cells and offering solutions like demand response and energy conservation technologies that help meet grid demand in less carbon-intensive and more innovative ways, NRG has collaborated with other likeminded customers such as Unilever, MGM Resorts International, Starwood Hotels & Resorts and Kaiser Permanente to achieve clean energy solutions.

Unilever

NRG has partnered with Unilever to map out and provide onsite and offsite able generation that will result in 100% clean energy for all Unilever, U.S. sites by 2025. This revolutionary collaboration demonstrates NRG's passion for tackling large-scale challenges with various solutions. The partnership aligns with Unilever's Sustainable Living Plan — its blueprint for sustainable growth which aims to double the size of its business while reducing the company's environmental footprint and increasing its positive social impact—with NRG's sustainability and business goals.

"Our transformational partnership with NRG to move all of our U.S. operations to 100 percent able energy will make our business more resilient, sustainable, and profitable."

Kees Kruythoff
President, Unilever North America

Though Unilever already purchases 100% of its electricity from able sources, its relationship with NRG will enable alternative energy utilization through new projects and technologies that had not previously been accessible to them. These technologies will be scalable and transferable to other industry sectors, allowing NRG to replicate efforts to affect even more change.

Learn more below:

http://investors.nrg.com/phoenix.zhtml?c=121544&p=irol-newsArticle&ID=1928191

Kaiser Permanente

Through a partnership with NRG, Kaiser will be able to achieve its goal of using 30% power from renewable sources. Solar arrays will provide as much as much as 70 MW of power at nearly 170 sites in California, reducing Kaiser's greenhouse gas emissions well beyond their goals. It will also help Kaiser realize its vision of creating healthier lives for its patients and

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their surrounding communities. NRG is also planning to install electric vehicle ("EV") charging stations at 40 Kaiser locations, helping to promote cleaner air and more environmentally friendly transportation. Utilizing on-site solar from NRG, Kaiser will achieve the top ranking of on-site installed solar capacity among U.S. healthcare companies. NRG also plans to implement demand response, microgrid and energy efficiency solutions for Kaiser's sites.

NRG's partnership is helping Kaiser realize:

A 17% utility load reduction;

An estimated $159 million in savings; and

1.4 million metric tons of CO_2 avoided.

Learn more below:

http://phx.corporate-ir.net/phoenix.zhtml?c=121544&p=irol-newsArticle&ID=2017705

Princeton Hospital

NRG Energy Center Princeton

NRG Thermal was selected to finance, build, own, operate and maintain the Central Utility Plant ("CUP") complex for this new 636,000 sq. ft. medical center in Plainsboro, NJ. NRG's study results indicated significant economic benefit to University Medical Center of Princeton at Plainsboro ("UMCPP") from the addition of a 4.6 MW combustion turbine CHP project and a 1.1 million gallon Thermal Energy Storage ("TES") tank for off-peak production of chilled water.

The system employs state of the art "wire to water" electronic control technology for efficient control of variable frequency drives on all electric rotating equipment and a proprietary economic dispatch software system for electricity and chilled water generation. This dispatch system also facilitates purchases from, and sale of electricity to, the grid to enhance project economics. A 13-year, full requirements contract to provide all of the hospital's electricity, steam and chilled water was executed between the Hospital and NRG. At the end of the contract term the Hospital can either purchase the assets from NRG at fair market value or it can negotiate a contract extension with NRG. The project also participates in the PJM Demand Response Program.

The project went commercial the first week in January 2012 ahead of schedule and on budget.

The facility's energy assets include:

- **CHP** – A 4.6 MW combined heat and power (CHP) plant supplying 100% of heating and cooling needs.
- **Thermal Energy** – The recovered thermal energy is used to heat and cool the medical center, and the steam is also used for sterilization.

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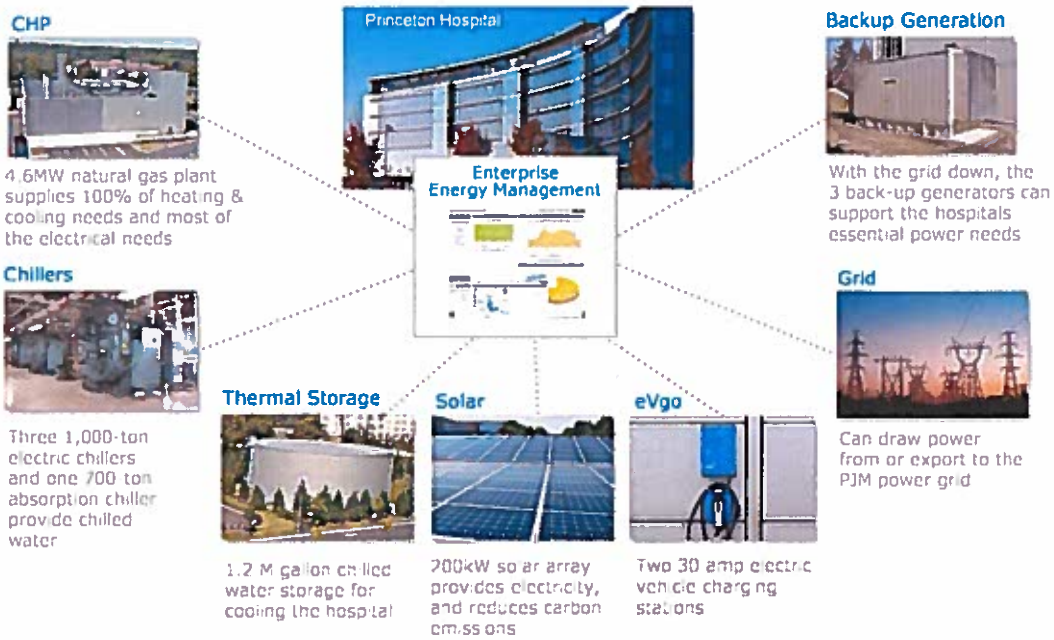
- **Solar** – Covered parking lot solar structures produce energy equivalent to what 30 average sized single family homes would use. The project also provides shaded parking for employees and visitors in addition to providing electricity to the hospital.

NRG's solution cuts energy bills dramatically, reduces emissions and increases reliability. The solution provides reliability with multiple levels of protection, including the ability to draw power from the PJM power grid if needed. UMCPP's energy and sustainable features have resulted in a 50% decrease in carbon footprint and a 20% decrease in energy costs. NRG continues to provide on-going operations and maintenance services for UMCPP.



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Arizona State University

Sun Devil Energy Center/ASU Tempe Campus

Excelling at one of the largest universities in the nation means doing your homework, thinking creatively and being ahead of the curve. And by partnering with NRG, that's exactly what ASU has done to set itself apart and better serve its students. Generating more than 24.1 MW1 of electricity from solar power today, with plans for carbon neutrality by 2025, ASU is a leader in integrating sustainable energy solutions into campus life.

At ASU's Tempe campus, the NRG PowerParasol® parking structure generates more than 2 MW of peak power, while also provide shade from the blazing desert sun for 800 parking spaces adjacent to Sun Devil Stadium and Wells Fargo Arena. And the PowerParasol® is just one of 89 projects currently online at ASU. When campus-wide solar renovation is complete in 2014, there will be 31 installations online from NRG.

In addition to solar, NRG has also partnered with ASU to serve 101 university buildings (totaling 8.7 million square feet) with steam and chilled water generated and fed into the campus district energy system from the Sun Devil Energy Center. Generated electricity serves four specialty research facilities from the plant's CHP equipment.

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Appendix B – Community Involvement

Global Giving

Community and Economic Development at our Core

As part of our commitment to development of the communities whom we serve, NRG's Office of Global Giving identifies nonprofit organizations and supports community programs and initiatives consistent with our four focus areas: community and economic development, education, environment and human welfare.

Home Front

NRG, has teamed up with HomeFront, a nationally recognized organization that has fought and is succeeding in helping end the cycle of poverty among the homeless in Mercer County, NJ, for over two decades. NRG, provided funding to support a recycling program of gently used furniture and appliances.

Green Mountain Energy Sun Club®

NRG joined with the Green Mountain Energy Sun Club to donate a 280-panel solar installation to the Houston Food Bank. The installation not only reduces energy costs and decreases the carbon footprint of the largest food bank in the country, but through those cost savings provides another two meals per hour or 17,000 meals per year. Through crowd funding (Green Mountain Energy, its customers, employees and other supporters), the Sun Club builds and promotes solar power while helping nonprofit organizations with a socially responsible focus reduce their electricity costs. Since being founded in 2002, the Sun Club has provided more than 900 kW of solar power through 75 unique projects supporting more than 70 nonprofit organizations.

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PinnacleHealth

NRG provided a $25,000 grant to the nonprofit PinnacleHealth Harrisburg Hospital in Harrisburg, PA, to establish a clinical care center at the Ortenzio Cancer Center. Learning that 50 percent of its high-risk cancer patients have limited or no family support, the NRG grant will fund a training program for hospital staff to provide the support and nurturing needed by the patients and families experiencing the difficulties of terminal illness. Caregivers are prepared to impart clinical knowledge, healing therapeutics and hope.

GRID Alternatives

Through an NRG grant to support the Solar Affordable Housing Program, GRID Alternatives trained and led teams of NRG employee volunteers as they installed solar panels on the homes of some low-income families, many of whom were still recovering from the devastation of Hurricane Sandy. While eliminating greenhouse gas emissions, these projects provide residents the benefit of long-term electricity savings.

Public-Private Partnerships

Our public partnership programs range in variety from nature preservation efforts to delivering meals to those in need. NRG makes great efforts in each of the communities we serve to increase community involvement and preserve surroundings. As we operate in communities across the country, NRG projects and programs are specific to the region and community they serve.

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East Region

NRG has become involved in and contributed towards a great many efforts ranging from wildlife preservation to community charity organizations. Each region has specific areas and organizations that NRG has become involved with to make a difference in each community.

At several New York plants, including Arthur Kill, Astoria and Dunkirk, NRG has partnered with and donated funds to environmental projects such as restoring public spaces on Staten Island and conducting environmental studies in the Long Island Sound. Also in New York, the Oswego plant participates in the Soles4Souls program, which collects new and slightly used shoes for victims of natural disasters or people who live in extreme poverty. The Dunkirk and Huntley plants partnered with the Niagara Frontier Section of the Air and Waste Management Association to sponsor Envirun 2014, a 5K run in honor of Earth Day. Proceeds support local environmental programs and education.
In Massachusetts, the Canal Generating Plant bought biodegradable trash bags to be used over the summer of 2014 during events celebrating the 375th anniversary of the city of Sandwich.

NRG is a lead sponsor ($10,000 level) of the annual Source to Sea cleanup project, a massive two-day event that spans four states and covers 138 miles of Connecticut River shoreline. As part of the 2014 event, a team of NRG employees spent a workday cleaning up a few thousand feet of shoreline on Dart Island State Park. Also in Connecticut, Devon Station donated $2,000 to Earthplace's Harbor Watch water quality monitoring program, a community-based environmental education program that trains and engages volunteers, many of them high school and college students, in the science of water quality research.
In Delaware, NRG helped finance the Delmarva Odyssey project, a collaboration between the Delaware Museum of Natural History and environmental scientist John Wik. Our Dover plant contributed funding to the Delaware Association of Conservation Districts to help with sponsorship of the Delaware Envirothon, a problem-solving natural resource education program for high school students. The program provides students an integrated approach to

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exploring six natural resource categories, and it tests their creativity, analytical thinking and team-building skills in a competitive format. Additionally, Delaware's Indian River facility contributed four obsolete condenser water boxes for an artificial reef project led by the Ocean City Reef Foundation.

In Pennsylvania, NRG Energy Center Pittsburgh supports the Northside Leadership Conference's Allegheny Commons Restoration Project, which works to preserve and protect trees native to the Commons. And since 2010, NRG has provided significant operational funding to the Environmental Learning Center in Armstrong County, PA. This center is a key component in the environmental education of a host of groups in the surrounding area.

NRG has also been a sponsor of the Space Coast Birding & Wildlife Festival in Florida since 2002. This event offers a wide variety of opportunities for local residents and out-of-state visitors to participate in outdoor environmental activities.

Gulf Coast Region

Louisiana's Big Cajun II plant teamed up with local government offices and groups to develop community gardens on small areas of public property for individuals to grow their own vegetables. Individuals plant, maintain and harvest their garden, and NRG even built an on-site greenhouse to grow plants during the winter.

We also work with the Ocean Trust, the U.S. Fish and Wildlife Service and a host of local stakeholders to restore tidal flow and native vegetation to the Bahia Grande tidal basin near Brownsville, TX. The 6,500-acre site is now part of the Laguna Atascosa National Wildlife Refuge. NRG also provides native vegetation for replanting efforts and funding for the construction of critical connection channels throughout the system.

Additionally, we've partnered with the Gulf Coast Bird Observatory in a host of habitat restoration, preservation and education projects for 10 years. The Gulf Coast Bird Observatory is the primary organizer of the Great Texas Birding Classic, the nation's most comprehensive bird watching contest. NRG has been able to direct more than $140,000 to habitat conservation projects along the Texas coast through the contest.

And to top it off, NRG employees helped the Houston Zoo retrofit 13 electric golf carts to run solely on solar power by replacing the existing roofs with solar panels.

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West Region

NRG has joined with Ducks Unlimited on a variety of innovative habitat restoration and water quality improvement projects across the U.S. for more than 10 years. A key element in this collaboration has been the restoration of critical waterfowl habitat on the Delevan National Wildlife Refuge in California's Sacramento Valley.

Additionally, NRG has provided funding support to SeaLab, a division of the LA Conservation Corps that offers at-risk youth opportunities to succeed. SeaLab focuses on environmental and service projects that benefit the community.

NRG supports the Channel Islands Marine Resource Institute (CIMRI) on the Southern California coast in an effort to save stranded marine mammals. CIMRI recently established a marine mammal rehabilitation center in Gaviota, just north of Santa Barbara. NRG provided funding to the group to help it maintain sustainable food supplies to all animals being housed at the facility. Our latest effort is to produce native dune vegetation for restoration activities at the Ormond Beach Generating Station. During Earth Day 2014, NRG volunteers helped kids and parents plant more than 1,500 sunflowers, tomatoes, onions and jalapenos in biodegradable pots.

The company also is partnering with the Nature Conservancy in a long-term effort to protect and restore the Santa Clara River Watershed, which features Southern California's last large, relatively free-flowing river and is home to dozens of threatened or endangered species.

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