April 18, 2019

Karlene Fine, Executive Director
North Dakota Industrial Commission
State Capitol – 14th Floor
600 East Boulevard Ave Dept 405
Bismarck, ND 58505-0840

Dear Ms. Fine,
Packet Digital is submitting the enclosed grant application to request funding in support of the Renewable Energy Project, “Portable Solar Array Modules, Phase II” in the amount of $500,000. This funding will be used as a match for the nine-month project which will run from Sept 1, 2019, to June 1, 2020, and has a total budget of $1,000,000. Other partners in this project include Nishati Inc., and Chiptronics Inc.

The development of a reliable, portable power system with robust battery storage powered by clean, renewable energy will have a very significant impact on North Dakota and the world over. Any customers who live or operate beyond the reach of the electrical grid, where dependency on fossil fuel generators is unreliable or expensive or in situations where grids fail will benefit from this new technology. Our primary target market is the military and security teams, however we will also look into the first responders, media broadcasters, disaster relief organizations (e.g. Red Cross, FEMA), construction and natural resources, and under-serviced or off-grid towns and villages around the world.

If you have questions I can be reached at 701-365-4421 or terri.zimmerman@packetdigital.com.

This letter sets forth a binding commitment on behalf of Packet Digital to complete the project as described in the application. Thank you for your consideration.

Sincerely,

Terri Gunn Zimmerman
CEO
Packet Digital, LLC
201 N 5th St, Suite 1500
Fargo, ND 58102

Renewable Energy Program

North Dakota Industrial Commission

Application

Project Title:

Portable Solar Array Modules, Phase II

Applicant:

Packet Digital, LLC

Principal Investigator:

Andrew Paulsen

Date of Application:

April 15, 2019

Amount of Request:

$500,000

Total Amount of Proposed Project:

$1,000,000

Duration of Project:

9 months - Sep 1, 2019 to June 1, 2020

Point of Contact (POC):

Terri Zimmerman

POC Telephone:

701-365-4421

POC Email:

terri.zimmerman@packetdigital.com

POC Address:

201 5th St. N, Ste 1500, Fargo ND

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ABSTRACT

Objective: Enhance the design of the portable solar power generation system to prepare for production with the goal of simplifying the manufacturing/assembly process, refine the system to comply with the customer requirements, and perform industry and military standard tests

Expected Results: Based on the feedback from our partners after performing several field tests, Packet Digital plans to refine the system for customer requirements and perform industry and military standard tests needed for commercializing the Portable Solar Generator. During Phase I, we designed and developed the fully integrated Portable Solar product with overall system efficiency of >95% with electronics weighing only 12 lbs (without batteries attached) and set up time in one minute. No comparable systems is available to the military today.

At the end of this project period we expect to have an industry/military Portable Solar Generator ready for production with our Department of Defense (DOD) contractor, Nishati. We also plan to further refine the design of current Portable Solar Generator to support optimized manufacturing and assembly process. The project is also expected to create and sustain highly skilled jobs in the fields of electrical/electronics engineering, and manufacturing and assembly in North Dakota, especially in otherwise economically disadvantaged areas of the state.

Duration: 9-month project beginning September 1, 2019.

Total Project Cost: $1,000,000

Participants: Packet Digital LLC, Fargo, ND; Nishati, Inc., Gilbert, AZ; U.S. Naval Research Laboratory, Washington, D.C.; Chiptronics, Inc., Dunseith, ND.

PROJECT DESCRIPTION

Objectives: This nine-month project will advance to production Packet Digital's fully integrated 95% efficiency Portable Solar Generator utilizing Nishati DOD solar panels. In phase I, Packet Digital has successfully designed and built a maximum power point tracker (MPPT) with custom algorithms, custom electronics and prototypes of the Portable Solar Generator 1 to charge military smart batteries, power vehicles, and provide AC power. Nishati is currently performing several rigorous field tests in their test facility in Gilbert, AZ. After completing the testing, Nishati has scheduled customer demonstration and a product roadshow.

Figure 1: PSG1 (electronics on the back side of panel) and PSG-C1000 (inverter) prototypes deployment

At the time this proposal is written, the response on PSG1 and PSG-C1000 has been very positive and constructive feedback has been provided regarding the prototypes. Key items of the feedback are:

- Nishati is very confident that there is a great potential interest from the military agencies in the PSG1, especially due to its hybrid functionality and there is nothing like it available in the military

market at the moment. The agencies will require the specific military product requirements of which during Phase II Packet Digital will achieve.

- The product needs industry standard testing and certification, at minimum FCC compliance.
- It will be very beneficial if the weight of PSG-C1000 can be reduced further, at least by 1 lb, which we feel can be achieved by modifying the enclosure design.
- Increase market opportunity by collaborating with gasoline/diesel power generator players, adding further hybridization feature in the PSG1 design.

Combining the above valuable feedback and our own prototypes evaluation, Packet Digital plans to do the following in Phase II:

- Refine electronic design to simplify manufacturing and assembly process and reduce production cost.
- Refine current custom enclosure to simplify manufacturing and assembly process and reduce cost for production.
- Modify the design to reduce weight further
- FCC compliance testing.
- Military compliance testing to meet specific military customer requirements
- Research further hybridization with gasoline/diesel power generator.

Phase II Objectives:

Objective 1: Refine PSG1 electronic design to simplify manufacturing and assembly process.

In Phase I we successfully designed and developed the electronic boards that will perform efficiently in predefined form factor, we also develop the electronics enclosure with ease of manufacturing and assembly in mind. During Phase II, we will advance our efficient and fast set-up PSG1 based on partner input and optimize the design for production. Improvements will be made in the design to further simplify the manufacturing and assembly process. Currently the electronic board designs are not fully optimized for large scale production. The assembly process involves a significant amount of manual work to get all the printed circuit boards (PCBs) to fit inside the enclosure with all the wirings and interconnects.

Task 1 – Refine the electronic board designs to reduce the amount of wiring and interconnect needed.

Task 2 – Assemble the electronics and perform laboratory tests to verify functionality.

Objective 2: Refine PSG1 custom enclosure.

Nearing the completion of Phase I we also identified several improvements that can be made in the custom enclosure to make the assembly process easier and reduce overall costs as well as to better protect the electronics inside from the rigorous MIL-STD tests. We will refine the enclosure design to incorporate these improvements. Our custom electronic enclosure consists of two separate panels, front and back. The front panel is made of ultra high molecular weight (UHMW) polyethylene, and the back panel is from aluminum. The aluminum back panel not only will provide a way for thermal dissipation for the electronics but also will provide mechanical support to the overall system. Currently the custom electronic enclosure was fabricated by computer numerical control (CNC) machining for both the front and the back panels, for a relatively small quantity production (less than 1000) this would be a reasonable approach. The panels will be redesigned to reduce the production cost and to enhance product viability.

Task 1 – Refine overall enclosure design to make the assembly process easier and less expensive.

Task 2 – Add more protection features to better withstand the MIL-STD tests.

Task 3 – Survey and evaluate plastic injection mold options for the front panel.

Objective 3: Design modification of PSG-C1000 to make it lighter

Currently the PSG-C1000 inverter module weights 30lbs and about 40% of the weight is contributed from the sealed lead acid (SLA) batteries inside the enclosure. The reason driving the selection of this type of battery is mainly due to cost consideration. SLA battery is significantly cheaper than comparable lithium based batteries, at the cost of more weight.

Task 1 – Survey and evaluate economical options for lighter energy storage that will work for PSG-C1000.

Task 2 – Modify current PSG-C1000 electronic design to support the selected new energy storage.

Objective 4: System integration and field test.

Upon the completion of objective 1, 2, and 3 above, Packet Digital will assemble the electronics into the custom enclosure, perform integration with Nishati's DOD solar panel, and conduct field test. Improvements that were expected as the outcome of the design changes will be evaluated.

Task 1 – Electronic assembly into the custom enclosure and integration with solar panel.

Task 2 – Conduct field test.

Objective 5: FCC compliance testing.

At the successful completion of objective 4, Packet Digital will test radio frequency emissions compliance with an accredited FCC testing laboratory.

Task 1 – Identify FCC accredited testing laboratory to work with and proceed with the testing.

Task 2 – Contingency plan, in the unlikely event that FCC test fails, Packet Digital will perform design refinement and re-test.

Objective 6: MIL-STD testing and certification.

Packet Digital will build several identical systems to be used for MIL-STD testing. Since there are several different test methods that will be done under the MIL-STD, we are planning to have the tests done in parallel in order to save time.

Task 1 – Identify MIL-STD accredited testing laboratory to work with.

Task 2 – Build four identical systems and proceed with the testing.

Task 3 – Contingency plan, in the event that any of the MIL-STD tests fail, Packet Digital will perform the necessary design reinforcement and re-test.

Objective 7: Looking into potential new design to support further hybridization with gasoline/diesel power generator.

Packet Digital will research the feasibility of designing a portable solar generator product to support further hybridization with conventional gasoline/diesel power generator. The idea is when the solar power is close to becoming unavailable such as during evening time, and the battery storage energy is low, then the system would automatically activate gasoline/diesel power generator to take over as the primary source of electrical power. And in the morning when the solar power is available, the system will deactivate the gasoline/diesel generator and portable solar generator will supply the electricity again.

Task 1 – Perform market survey to investigate the potential market demand for such a hybrid system.

Task 2 – Perform initial design architecture, capturing general functionalities of the hybrid system.

Methodology: This project will be divided into three primary efforts: refinement of current electronic design, refinement of current mechanical design, and application for MIL-STD as well as industry

standard tests and certifications. In addition to the primary efforts above, we will also look into the possibility of modifying the design to support hybridization with conventional gasoline/diesel power generator. This nine-month project will build on Packet Digital's previous research and development of power conversion circuitry for portable solar power generator. The following summarizes the achievements for the Phase I effort:

Phase I Achievements: PSG1 Development

Packet Digital has successfully developed the PSG1 with built-in fast-tracking, high efficiency MPPT with greater than 97% maximum efficiency, four bidirectional military battery (BB2590) smart chargers, and one sharing port output. All of the power electronics and enclosures have been custom designed and developed in Fargo, ND. The PSG1 is specifically designed to fit perfectly into Nishati's military solar panel and case. It is an integral part that adds no extra size or setup time to the panel. It extracts the maximum available output power from the solar panel and uses it for charging BB2590 batteries and/or providing power through the USB chargers and sharing port output. The four BB2590 chargers will charge all BB2590 batteries inserted into the slots, with no cables or adapters required, up to their maximum recommended state of charge simultaneously. BB2590 batteries in the slots can also be used to increase the power available to the sharing port output when there is insufficient solar power available (limited to a maximum total output of 576W per PSG1, two PSG1 systems can be paralleled to drive one 1kW inverter).

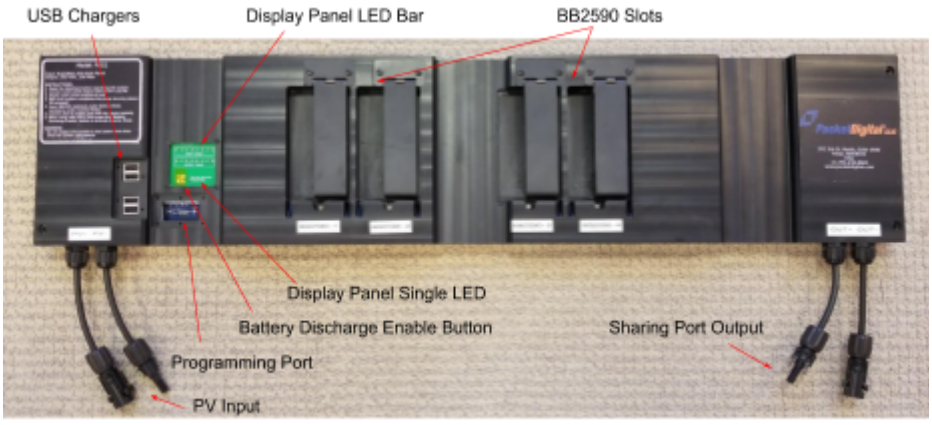


Figure 2: PSG1 prototype

The PSG1 system has been designed, assembled, and tested in our laboratory as well as in the field. Further field test in Gilbert, AZ is ongoing and the preliminary results are satisfactory and the system is “Working as advertised”.

PSG-C1000 Development

The Portable Solar Generator Companion 1000 (PSG-C1000) is specifically designed to be used with the PSG1. It is intended to convert up to 1000W of DC input from the PSG1 (needs two PSG1 in parallel to provide 1000W) into 110V AC with GFCI protection. The input voltage is compatible with common 6T battery voltages of 28.8V. The Portable Solar Inverter includes internal backup batteries to mitigate sudden AC load transients from disrupting the output of the Portable Solar Generator.

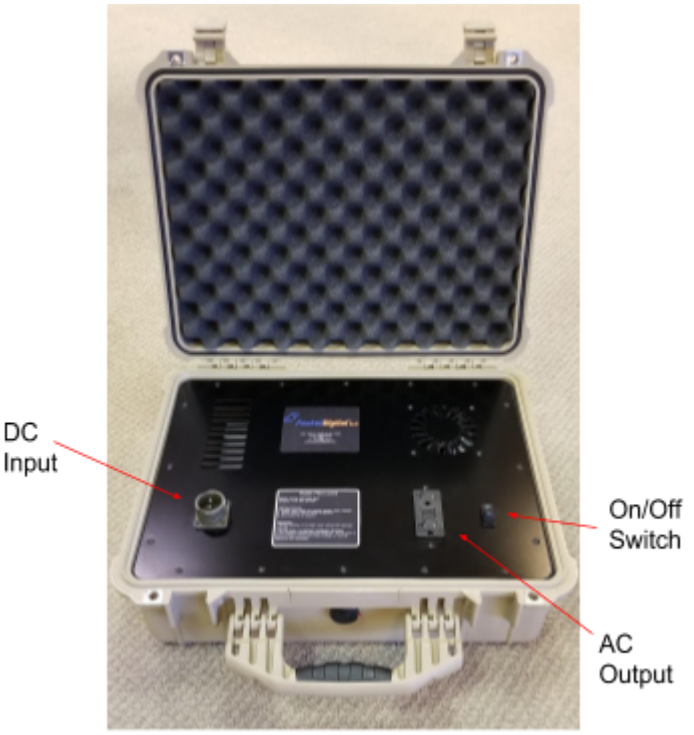


Figure 3: PSG-C1000 prototype

Parameter	Conditions	Min	Typ	Max	Units
Sharing port output				570	W
BB2590 charger Iout				6	A
USB charger Vout		4.75	5	5.25	V
USB charger Iout				2.33	A
Efficiency	MPPT			>97	%
	Overall PSG1 system			>95	%
Weight	PSG1 without battery		12		Lbs
	Combine with Expedition 570		112		Lbs

Anticipated Results: Phase II will result in a manufacturing-ready portable solar power generation system including Packet Digital power electronics hardware that is manufactured in ND.

Facilities: Development and commercialization activities will occur at Packet Digital's facility in Fargo, N.D. Packet Digital is fully equipped for the design and development of the circuitry defined herein. A full

tool suite of computer aided design software and laboratory equipment are in place for conceptual design, debug, integration, and test.

Nishati, headquartered in Gilbert, Arizona, primarily utilizes contract manufacturing to provide the necessary state-of-the-art capabilities required to produce innovative and adaptive solar energy products. These facilities are located throughout the U.S., including the use of multiple specialty solar panel manufacturers and panel assembly at RMS Assembly in Lafayette, CO. Product integration and field testing are conducted at the Nishati Test and Evaluation Center (NTEC) in Gilbert, AZ.

NRL has expertise in optoelectronic device modeling, design, growth, fabrication, and characterization. NRL maintains a III-V semiconductor growth and processing facility with three Molecular Beam Epitaxy (MBE) reactors as well as a state-of-the-art solar cell material and device characterization laboratory including solar simulators providing high spectral fidelity. NRL also maintains an extensive capability in the design, fabrication, and testing of solar cells and panels. Solar testing and product design review will take place at the NRL facilities.

Manufacturing facilities are available through Chiptronics in Dunseith, ND. Chiptronics' facilities are located in a certified HUBZone and include a 55,000 sq. foot building equipped for electronics assembly and testing. The facility includes a class 100,000 clean room, ESD flooring, and a state-of-the-art PCB assembly line. The facilities can accommodate rigid PCB, flex circuit, full system, and custom electronics assembly and testing. Chiptronics is ISO 9001:2008 registered and ITAR compliant.

Additionally, facilities providing test equipment at the North Dakota State University are available through a professional relationship.

Resources. Packet Digital, with power management expertise and mixed signal ASIC design experience, has successfully developed the PSG1 and PSG-C1000 prototypes and will further refine the products to pass industry and military tests. Nishati, with experience in manufacturing portable solar arrays, has developed and currently improving the main solar array unit. Chiptronics has a labor force skilled in electronics manufacturing and assembly, will be ready to support with the electronics manufacturing. NRL has a global reputation for optoelectronics and solar research and a keen interest in developing solar solutions for military purposes, including its recent demonstration of GaAs-based, multi-junction (MJ) solar

cells for use in portable systems for the U.S. Marine Corps. NRL is providing matching dollars for this project and will perform further product design and testing review and laboratory and outdoor testing on sample solar power systems from the Nishati/Packet Digital team.

Techniques to Be Used, Their Availability and Capability: To achieve the stated objectives, with priority on FCC and MIL-STD compliance testing, weight reduction, and manufacturing optimization, engineering concepts and techniques that are well understood, available, and familiar to Packet Digital, Nishati, and NRL will be employed. The engineering teams are confident the solution is attainable.

Environmental and Economic Impacts while Project is Underway: This project is focused on using clean, renewable solar energy to reduce or eliminate the fossil fuel requirements, carbon emissions, and noise associated with existing portable power generation solutions. The economic impact will be significant with six to eight persons being employed for the duration of the project.

Ultimate Technological and Economic Impacts: This project will create a new product in North Dakota in solar technology creating jobs and an increased manufacturing. We have strong interest from Nishati, Department of Defense contractor, and demonstrations with military agencies are scheduled. There is strong interest in the product due to its unique hybrid technology capability. These capabilities are expected to provide significant new opportunities and benefits for military, municipal, and eventually for commercial use.

Why the Project is Needed: In Phase I Packet Digital has successfully developed and tested product prototypes. Further successful tests were conducted by Nishati to replicate real military use cases. In order to move forward to the commercialization stage, further industry and military standard testing is required. This Phase II effort focuses on obtaining those certifications, and refining the design to achieve that goal, and producing new hardware samples for demonstrations and sales purposes.

STANDARDS OF SUCCESS

The primary standard of success is to demonstrate FCC and MIL-STD compliance at accredited test facilities, with improvement in product manufacturability and weight reduction as accompanying targets.

Project Deliverables:

- Improvement in electronic design to simplify manufacturing and assembly process.

- Improvement in custom enclosure to simplify manufacturing and assembly process.
- Weight reduction of PSG-C1000 inverter module.
- FCC and MIL-STD compliance of the product.

The value to North Dakota: This project will create a new solar technology product, more jobs, and increased manufacturing in North Dakota. This product could be the beginning of a line of portable solar solutions that would help solidify North Dakota's reputation as one of the country's energy leaders, not just for fossil fuels production, but as an advocate of a diverse energy portfolio, including portable solar power, leading the way to energy independence.

The final manufacturing and assembly will be conducted at Chiptronics, Inc., a certified Small HUBZone Business in Dunseith, ND, adjacent to the Turtle Mountain Indian Reservation. This partnership will employ and promote highly technical job skills in one of the state's economically disadvantaged areas.

This North Dakota project will potentially enhance and spur education and research towards new techniques to develop portable solar power with the most advanced power management and peak power tracking electronics on the market. Local colleges and universities, including NDSU, UND, and NDSCS, can assist with testing, analysis, research, and fabrication design on this and future projects.

Potential for Commercial Use: In addition to military use, these portable solar power generator units will potentially be useful for municipalities, security teams, first responders, media broadcasters, and disaster relief organizations (e.g. Red Cross, FEMA).

BACKGROUND/QUALIFICATIONS

Packet Digital has developed power management integrated circuits and technology to extend battery life or reduce power consumption in a number of applications. Our patented On-Demand Power® technology addresses the shortcomings of software-based power management by moving the control out of the microprocessor and placing the intelligence inside the power management integrated circuits.

In collaboration with NRL, Packet Digital has developed novel methods and algorithms for achieving MPPT with solar energy and has also developed a smart battery, capable of cell-level monitoring and balancing, which has begun commercializing through a collaboration with Venom, battery distributor.

Nishati produces lightweight and portable solar array modules targeted for military use. Nishati approached Packet Digital to design a voltage boost converter for its much smaller Endurance™ 25 Multi Voltage Solar Charging System. The 25W panel includes USB charging for tablets and smartphones and a two-pin SAE connector to interface with charger controllers, AC inverters, batteries, and DC loads. At just 1.9 lbs, the 22.0"x13.7"x0.72" deployed panel tri-folds down into a 13.7"x7.25"x0.97" self-contained case with integrated cable/connector stowage that easily fits in a backpack, briefcase or tote.

Management Team: Andrew Paulsen, Director of Advanced Technology for Packet Digital, was a key leader in the initial development of PowerSage® technology. He leads the engineering team, developing new products and technology. Paulsen has extensive research, testing, and product development expertise in the power field. He has significant experience in solar-powered vehicles, battery charging, and motor controls from many years leading the electrical group of the NDSU solar racing team.

Terri Zimmerman, Packet Digital CEO, has over 20 years of experience developing, incubating, and commercializing new technologies. She has raised over $500M in capital to launch new products and services in global markets and has grown companies to significant revenues resulting in successful exits. She has been appointed to a state economic development board by three North Dakota governors.

Nishati: Robert Charette Jr., is CEO of Nishati. During his 28-year career as a former Marine Corps officer, he led the development and implementation of the Marine Corps Expeditionary Energy Strategy, driving institutional changes in thinking about expeditionary energy, the introduction of solar, hybrid, and energy efficient technologies to the battlefield, and guided a $352M investment portfolio.

Naval Research Laboratory: Dr. Phil Jenkins has conducted PV research, serving U.S. Department of Defense, Department of Energy and NASA missions for 25 years. He is currently the Lead Research & Development Engineer at NRL. His work includes wide ranging topics including high-efficiency III-V solar cells, thermophotovoltaics and solar cells for extreme environments. He has served as the Principal Investigator or Cognizant Engineer on seven spaceflight experiments, including two for the Mars Exploration Program and three for the ISS.

Chiptronics: Linus Morin, Co-Founder and Majority Owner of Chiptronics, was an integral part of the company's startup in 1977. He has over 35 years of manufacturing experience and over 20 years of

inventory and logistics management experience. Linus was a key member of the team that achieved ISO 9001:2008 registration in 2012.

MANAGEMENT

Management Plan: Packet Digital will lead the effort with significant collaboration of Nishati and support from NRL, Chiptronics, RedE, and the universities. Teams will work in parallel and interact directly as needed. Weekly status meetings will be held via teleconference, and face-to-face meetings will be scheduled should the need arises. The development schedule and financial reports will be updated on a monthly basis. Major schedule items will include systems refinement requirements definition, development activities, integration and test, as well as industry and military compliance testing.

Quality Assurance & Systems Engineering: Existing validated software and hardware will be leveraged as much as possible. A tailored systems engineering approach will be utilized for this development effort to efficiently execute the project while ensuring proper due-diligence is maintained. A risk management approach will be utilized including a matrix to track requirements that are deemed to have high risk.

TIMETABLE

The following table shows the schedule for the technical aspects of this project.

Task	Month 1				Month 2				Month 3				Month 4				Month 5				Month 6				Month 7				Month 8				Month 9			
Objective 1																																				
Refine the electronic board designs.																																				
Assembly and tests.																																				
Objective 2																																				
Refine overall enclosure design.																																				
Add more protection features.																																				
Evaluate plastic injection mold options.																																				
Objective 3																																				
Find options for lighter energy storage.																																				
Modify design for lighter energy storage.																																				
Objective 4																																				
Electronic assembly into enclosure and integration with solar panel.																																				
Conduct field test.																																				
Objective 5																																				
Identify FCC testing laboratory to work with and proceed with the testing.																																				
Contingency plan if FCC test fails.																																				
Objective 6																																				
Identify MIL-STD testing laboratory.																																				
Build four identical systems and send for MIL-STD testing.																																				
Contingency plan if MIL-STD tests fail																																				
Objective 7																																				
Market survey for a hybrid system.																																				
Initial architecture of the hybrid system.																																				

BUDGET

Project Associated Expense	NDIC Share	NRL Share	Total
Total Personnel Cost	$389,898.60[1]	$500,000	$889,898.60
Software and Materials	$110,101.40[2]	$0.00	$110,101.40
Total	$500,000.00	$500,000.00	$1,000,000.00

[1] Direct personnel costs plus indirect overhead and G&A
[2] Direct materials costs plus G&A

The $1,000,000 budget is based on estimates for the time, material, software, tests, and certification process for the tasks detailed above in the timeline. Above labor, material, and software costs of $500,000 are estimated for the Renewable Energy Council Grant. NRL has committed to matching funds of $500,000-$550,000 or a minimum of 50% of the total project cost over the nine-month period. Nishati is committed to participate and will be continuing testing and demonstrations during the upcoming months prior to the commencement of Phase II. Nishati and NRL will be partnering with Packet Digital on the testing of the portable solar array modules, and in the manufacturing plan with Chiptronics.

Personnel Detail: The technical managers are budgeted 4 weeks, combined, for project oversight and will be involved with architectural design, reviews, documentation, and design verification. The engineering team is budgeted 17 months, combined, for power conversion boards, schematic design, layout, integration, and testing. The CEO is budgeted two weeks for oversight and commercialization.

CONFIDENTIAL INFORMATION

No confidential information has been included in this document.

PATENTS/RIGHTS TO TECHNICAL DATA

Packet Digital reserves the right to file patents related to the intellectual property generated from this proposal and will work with legal counsel to determine if additional patents could be filed. Our power management algorithms and methodology are protected by our patent portfolio. We also have copyrights and our registered trademarks include On-Demand Power®, PowerSage®, and Packet Digital®.

April 12, 2019

North Dakota Industrial Commission
Renewable Energy Council
State Capitol – 14th Floor
600 East Boulevard Ave Dept 405
Bismarck, ND 58505-0840

N.D. Renewable Energy Council Members,

Nishati, Inc., is providing this letter of support in reference to Packet Digital's Phase II proposal to the N.D. Industrial Commission (NDIC) titled, "Portable Solar Array Modules, Phase II." We are excited to continue our collaborative relationship with Packet Digital.

Nishati designs, manufactures, and sells high-performance photovoltaic (PV) solar modules and racking systems for portable, semi-permanent, and fixed applications for military and other customers who live or operate beyond the reach of the electrical grid, where dependency on fossil fuel generators is unreliable or expensive.

Over the past year, Nishati has tapped Packet Digital's extensive expertise in power management to add voltage boost and charging circuitry to our new line of Endurance™ 25W portable panels. We have been impressed by Packet Digital's professionalism, quality and innovative engineering. With their help, we have already begun test deployments of our technology to troops overseas and early product commercialization.

We would like to once again join forces with Packet Digital to address the needs of much larger off-grid military power consumers. The 1kW solar power generator units described in the proposal will have significant impact on military operations as well as municipalities, first responders, disaster relief organizations, media broadcasters, natural resources and other industries. We see this as an important investment in the development of clean, renewable, portable solar power generation, and a real opportunity for North Dakota to arrive at the forefront of this product niche.

We look forward to working with Packet Digital and the NDIC on this unique project.

Sincerely,

Robert J. Charette

Robert J. Charette Jr.
CEO

MEMORANDUM

U.S. Naval Research Laboratory
4555 Overlook Ave SW
Washington DC. 20375
Code 6818

DATE: 30 May, 2019

REPLY TO
ATTN. OF: Mr. Phillip P. Jenkins

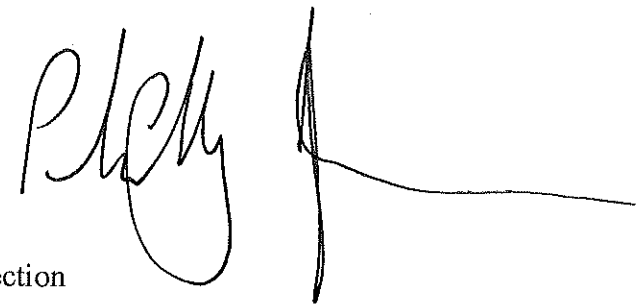
SUBJECT: Packet Digital Phase II effort to develop a transportable solar power generation module

TO: Terri Zimmerman, Packet Digital, CEO

CC:

Dear: Terri Zimmerman

We are very interested in continuing our collaboration to develop transportable solar power generation modules under the NDREC Program. Working under our cooperative research agreement, NCRADA-NRL-18-674, we estimate a total of $500K-$550K will be available as match funding to contribute to the development effort from for the program from September 2019 to June 2020. For our part, we will continue to develop solar array technology and to test system components.



Phillip Jenkins
Head, Photovoltaics Section
NRL Code 6818

April 10, 2019

North Dakota Industrial Commission
Renewable Energy Council
State Capitol – 14th Floor
600 East Boulevard Ave Dept 405
Bismarck, ND 58505-0840

CHIPTRONICS INC

N.D. Renewable Energy Council Members,

I am writing in support of Packet Digital's Phase II proposal to the N.D. Industrial Commission (NDIC) on the portable solar project.

Chiptronics is a Native American Owned Company and has been serving the Aerospace and Defense Industry for over 35 years. We have access to one of the most experienced manufacturing workforces in the country.

Over the past few years, we have had the opportunity to work with Packet Digital, assembling the power conversion and charging module and integrating it into the Nishati Endurance™ 25 panel. We also serve as the primary shipping and logistics partner for the product. The project has helped sustain revenue and jobs at Chiptronics and has been a mutually beneficial partnership for all the companies involved.

We look forward to further developing our relationship with Packet Digital. The 1kW solar generator unit described in this proposal is a high-value item with significant military market potential that could greatly impact our business. Our talented employees are eager to showcase their talents for this solar manufacturing opportunity, and we are dedicated to another successful product rollout.

Please consider Packet Digital's Phase II proposal and the significant impact it will have on our state.

Sincerely,

Linus Morin

Linus Morin
President
Chiptronics Inc