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Pro Se Plaintiff

IN THE UNITED STATES COURT OF APPEALS
FOR THE TENTH CIRCUIT

UNITED STATES OF AMERICA

Plaintiff-Appellee,

vs.

NELDON PAUL JOHNSON,
Defendant-Appellant, and
INTENATIONAL AUTOMATED SYSTEMS,
et. Al.

Defendants.

REPLY TO GOVERNMENT'S RESPONSE REGARDING JURISDICTION

Case No. 19-4066

Appellant, Neldon P. Johnson, appears Pro Se, and submits this response to the Government's Response Regarding Jurisdiction as follows:

The Government's Response clarifies that the Motion to Dismiss that was denied would resolve all the issues pending in the lower court. A motion to dismiss the receiver and the entire case would obviously resolve the entire matter. Nothing else in the Government's Response challenges or affects the appeal. This appeal ought to go forward.

The lower court does not have jurisdiction to continue handling anything because of violations of due process, failure to afford me due process, failure to resolve the challenge to the judge's bias, and failure to address satisfaction/payment issues.

A challenge to the lower judge's impartiality was raised in the Affidavit of Bias I filed with my prior response as Exhibit 5 to that filing. That remains an unaddressed and pending issue that the lower court has ignored. How can a judge accused of bias be able to continue to handle the pending issues? Shouldn't that question normally require an answer rather than just being ignored by the judge? That alone requires this Court to intervene and bring some order to the disorder being conducted below.

The lower court acted as a court of equity, but the dispute was a legal challenge. The lower court did not have the right to try the case without a jury. I asked for a jury. I was denied the right to have a jury of my peers hear the evidence. A jury would never have been persuaded to have paralegals working for the Department of Justice lawyers handling the case become witnesses against me. And how can paralegals working for the trial lawyers testify in any event? Isn't that unethical to have a lawyer's paralegal testify? If a lawyer can't be a witness in a case the lawyer is trying, how can the paralegal working for that lawyer become a witness?

How can testimonial evidence be admitted from Department of Justice paralegals when the lower court judge ordered that my lawyers were forbidden from taking any depositions of Department of Justice employees? See Exhibit 1.

I have been told repeatedly by the Department of Justice lead attorney Erin Healy Gallagher that she intended to put me into bankruptcy and take everything I own. She is on a vendetta to punish me. It is very personal with her. She does not care about the truth, does not try to engage in discovery to disclose evidence during the time when

evidence was supposed to be revealed, nor did she have any expert damage witness to offer proof against me. Instead, she used her paralegals to offer testimony using words she supplied to them. They did not even know what some words she put into her paralegals' mouths meant! They used her words. They said what she told them to say. Isn't that the attorney unethically testifying? Just because she tells the paralegal what she wants said, that does not make it any less Erin Healy Gallagher testifying. That was unethical, but the lower court approved it, and entered orders that allowed it to happen.

International Automated Systems, a publicly trading company, was included as a defendant and as a receivership entity because the government thought including them would hurt me. But International Automated Systems had returned every cent they ever received before the case against me and them was filed. They should never have been included in the case. An accounting I filed for the lower court is attached as Exhibit 2. Now the lower court is considering declaring all stock in IAS canceled, harming hundreds of shareholders when IAS is in the process of bringing new and valuable products to market. See Exhibit 3.

The receiver should be dismissed. He is doing more harm than good. The receiver's actions prove the government never was ready for trial, because the information the receiver is now gathering is what the government should have provided/gathered during discovery and provided to me in an expert report during the trial. They did nothing, hired no expert witness, had no accountant for trial, and used Department of Justice paralegals to introduce exhibit summaries of numbers that had no

relationship to the actual sales of lenses. Legitimate payments from one company to another resulted in the government double-counting the numbers. Even then, the government's highest number was less than the lower court awarded by tens-of-millions of dollars. The government did not provide a reasonable estimate, and the judge's award was not a reasonable or rational amount.

The whole purpose of appointing a Receiver when I had complied with everything asked of me was because the lower court is so set in adverse inferences, or bias, that the truth has no place in this case. I'm supposed to have everything I worked my life to achieve torn to pieces so I can't pursue any appeal. I'm supposed to be intimidated into submission to the bias and unfairness of this process.

This appeal fits the requirements of the law, 28 USC §1291 and *New Mexico v. Trujillo*, 813 F3d 1308 (10th Cir. 2016) because this will "dispose of all claims by all parties." *Trujillo*, p. 1316. This will "end the litigation on the merits and leave nothing for the court to do..." *Cunningham v. Hamilton Cnty., Ohio*, 527 US 198, 204 (1999). This appeal fits the requirement for finality. I should be allowed to appeal.

Dated this 12 day of June, 2019

Neldon Johnson, Pro Se

CERTIFICATE OF SERVICE

I certify a copy of the foregoing was sent to counsel for the United States through the Electronic Service by the Appeal Court's e-filing program

/s/ Neldon Johnson, Pro, Se

Exhibit 1

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IN THE UNITED STATES DISTRICT COURT FOR THE
DISTRICT OF UTAH, CENTRAL DIVISION

UNITED STATES OF AMERICA, Plaintiff, vs. RAPOWER-3, LLC, INTERNATIONAL AUTOMATED SYSTEMS, INC., LTB1, LLC, R. GREGORY SHEPARD, NELDON JOHNSON, and ROGER FREEBORN, Defendants.	Civil No. 2:15-cv-00828-DN-EJF **ORDER GRANTING UNITED STATES' MOTION FOR PROTECTIVE ORDER** Judge David Nuffer Magistrate Judge Evelyn J. Furse

Upon consideration of the United States' motion for protective order prohibiting Defendants from deposing the United States' trial counsel and related submissions, IT IS HEREBY ORDERED THAT the motion is GRANTED. Defendants shall not depose any representative of the United States Department of Justice, Tax Division.

DATED this 15th day of June, 2017.

Evelyn J. Furse
United States Magistrate Judge

Exhibit 2

Exhibit 3

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IN THE UNITED STATES DISTRICT COURT FOR THE
DISTRICT OF UTAH, CENTRAL DIVISION

UNITED STATES OF AMERICA, Plaintiff, vs. RAPOWER-3, LLC, INTERNATIONAL AUTOMATED SYSTEMS, INC., LTB1, LLC, R. GREGORY SHEPARD, and NELDON JOHNSON, Defendants.	Civil No. 2:15-cv-00828-DN-EJF **OPPOSITION TO RECEIVER'S MOTION FOR AN ORDER CANCELING SHARES OF INTERNATIONAL AUTOMATED SYSTEMS, INC. (ECF 682)** **EVIDENTIARY HEARING REQUESTED** Judge David Nuffer

COMES NOW International Automated Systems, Inc. ("IAS") and hereby requests an evidentiary hearing and objects to the Receiver's Motion for an Order Canceling Shares of International Automated Systems, Inc. as follows:

IAS is represented by the undersigned counsel in a currently pending appeal before the 10th Circuit Court of Appeals, and this motion affects that representation. In recent statements made by the Receiver, the Receiver is not representing the interests of IAS or its shareholders, and therefore the Receiver agreed Neldon Johnson could arrange to do so. Because we are appeal

counsel for IAS, and canceling the shares of our client will adversely affect the party we represent in the pending appeal, we appear to respond to Mr. Johnson's request and for the purpose of filing this opposition.

IAS is not a reporting company. It was never under the obligation to file, much less under any obligation to keep its filings current. Although it had no obligation to file, IAS did so, and had audited financial information available for its stockholders prepared by independent Certified Public Accountants. These steps were taken in anticipation of one day becoming a reporting company.

The Receiver's criticism that no quarterly or annual reports have been filed since June 2016 are, therefore, meaningless. These filings were voluntary to begin with. And when the Receiver assumed control, the Receiver cancelled the preparation of annual reports for 2017 and 2018. Essentially the Receiver prevented these voluntary reports from being completed, and therefore if criticism is warranted it ought to be directed at the Receiver for terminating the work to file these reports.

I. IAS Has Operations Unrelated to the Solar Operation

The Receiver claims that IAS engaged is no legitimate business operations and IAS has no future prospects for business operations as rationales to summarily cancel IAS shares.[1] These rationales are demonstrably false. For example, IAS has licensed the use of the Johnson Turbine, and Johnson heat exchangers / condensers for use in a 100 KW Water and Energy and Recovery System to Wisdom Farms Technology Development, LLC.[2] The use of this technology is unrelated

[1] ECF 682 at pg. 6-7.

[2] Commercialization Status Report "100 kW Water and Energy Recovery or WER System pgs. 1-2, Attached as Exhibit A.

to the solar systems at issue in this case, and at a minimum present future prospect for business operations. The licensing agreement includes a royalty to be paid by Wisdom Farms to Johnson and IAS.[3]

IAS further requests an evidentiary hearing to determine the demonstrate the falsity of the Receiver's claims is prepared to call as witnesses Paul Freeman, Johnny Kraczek, Neldon Johnson, and others, to provide such evidence. These witnesses will testify to the legitimacy of IAS business operations that are entirely unrelated to the solar system at issue in this case. These witnesses will testify to IAS's future prospects for business operations. IAS also intends to call the Wayne Klein for the purpose of cross-examination, to demonstrate the shortcomings in his investigation and the falsity of his conclusory statements that IAS has no legitimate business or prospects for future business.

II. The Receiver's Request is an Unlawful Taking.

IAS has shareholders whose ownership of stock represents property having value. To condemn that property as the Receiver requests, represents a taking without compensation. The Receiver admits the shareholders were provided the Judgement and Findings of Fact and Conclusions of Law when they were made public. Also, the Receiver posted an 8-K report disclosing the asset freeze. Still the stock remains trading among the shareholders. Even with the full knowledge of this Court's proceedings, stockholders continue to value, purchase and sell their shares.

There is a pending appeal before the 10th Circuit Court which will determine the finality of this Court's decision on this matter. If the decision is reversed, then the stockholders will be vindicated in their continued patience with their stock ownership. Yet the Receiver is asking this

[3] Id. at pg. 6.

Court to not allow the market to decide value, to ignore the SEC's refusal, and to disregard the FINRA decision to decline to act, and to judicially destroy the owner's property without compensation. Like the other regulatory bodies, this Court should also decline.

When the act of this Court destroys all property value, it is a taking.[4] Here, the Receiver is opposed to the stock retaining any value because of his fear of abuse. However, there can be no abuse when the owners are fully apprised of the state of this dispute, and they choose to continue to value their property.

This is not taking "one 'strand' of a bundle of rights."[5] The Receiver is asking the Court to cancel all the issued and outstanding shares of IAS. It is a complete destruction of this property.

Several of the stock owners are foreign entities. For them, if this Court were to destroy the stock value it would constitute an improper expropriation of property for which they would have rights against the United States under the ICSID and other treaties and conventions. Therefore, if this Court were to grant the relief requested by the Receiver, it would likely spawn additional litigation both within and outside the United States by the affected shareholders.

"Parties whose rights are to be affected are entitled to be heard; and in order that they may enjoy that right they must first be notified."[6] It is equally fundamental that the right to notice and an opportunity to be heard "must be granted at a meaningful time and in a meaningful manner."[7]

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[4] *Pennsylvania Coal Co. v. Mahon*, 260 U.S. 393, 415 (1922). See also *Lucas v. South Carolina Coastal Council*, 505 U.S. 1003 (1992) (a regulation that deprives a property owner of all beneficial use of his property requires compensation).

[5] *Doland v. City of Tigard*, 512 U.S. 374, 410 (1994), citing *Penn Central Transp. Co. v. New York City*, 438 U. S. 104 (1978).

[6] Id. at 81 (citing *Baldwin v. Hale*, 1 Wall. 223, 233. See *Windsor v. McVeigh*, 93 U.S. 274; *Hovey v. Elliott*, 167 U.S. 409; *Grannis v. Ordean*, 234 U.S. 385.)

[7] Id. (citing *Armstrong v. Manzo*, 380 U.S. 545, 552.)

In *Fuentes*, the primary question was whether certain state statutes, including the Florida and Pennsylvania replevin statutes, were constitutionally defective in failing to provide for hearings "at a meaningful time."[8] Neither the Florida nor the Pennsylvania statute provided for notice or an opportunity to be heard *before* the seizure. The issue is whether procedural due process in the context of these cases requires an opportunity for a hearing *before* the State authorizes its agents to seize property in the possession of a person upon the application of another.[9]

> The constitutional right to be heard is a basic aspect of the duty of government to follow a fair process of decision making when it acts to deprive a person of his possessions. The purpose of this requirement is not only to ensure abstract fair play to the individual. Its purpose, more particularly, is to protect his use and possession of property from arbitrary encroachment -- to minimize substantively unfair or mistaken deprivations of property, a danger that is especially great when the State seizes goods simply upon the application of and for the benefit of a private party. So viewed, the prohibition against the deprivation of property without due process of law reflects the high value, embedded in our constitutional and political history, that we place on a person's right to enjoy what is his, free of governmental interference. "If the right to notice and a hearing is to serve its full purpose, then, it is clear that it must be granted at a time when the deprivation can still be prevented. At a later hearing, an individual's possessions can be returned to him if they were unfairly or mistakenly taken in the first place. Damages may even be awarded to him for the wrongful deprivation. But no later hearing and no damage award can undo the fact that the arbitrary taking that was subject to the right of procedural due process has already occurred. "This Court has not ... embraced the general proposition that a wrong may be done if it can be undone." *Id.* (citing *Lynch v. Household Finance Corp.*, 405 U.S. 538, 552. *Stanley v. Illinois*, 405 U.S. 645, 647.)

This is not a novel principle of constitutional law. The right to a prior hearing has long been recognized by this Court under the Fourteenth and Fifth Amendments. Although the Court has held that due process tolerates variances in the *form* of a hearing "appropriate to the nature of the case," *Mullane v. Central Hanover Tr. Co.*, 339 U.S. 306, 313, and "depending upon the

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[8] Id.

[9]

importance of the interests involved and the nature of the subsequent proceedings [if any]," *Boddie v. Connecticut*, 401 U.S. 371, 378, the Court has traditionally insisted that, whatever its form, opportunity for that hearing must be provided before the deprivation at issue takes effect.[10]

In past briefings, Plaintiff has argued that because Defendants have argued other similarly situated Receivership entities should not be subject to the asset freeze, that it has fully received all required due process.

In *United States v. Mesadieu*, 108 F.Supp 3d. 1113 (M.D. Fla. 2016), the trial court questioned whether it had authority to disgorge revenue "obtained by Mesadieu's companies – entities that are not before the Court."[11] The Government urged the trial court to include the non-parties alleging that "Mesadieu is the sole owner of the companies and uses his companies as a vehicle for fraud."[12] But the Government did not join the companies as a defendant."[13] Like *Mesadieu*, the Government failed to join non-entities Solstice, et. al. yet sought disgorgement against them under the same reasoning in *Mesadieu* (i.e., alleging that the named defendants used the companies as a vehicle of fraud.) Fortunately, this Court properly refused to order disgorgement against these entities in its final order.[14]

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[10] *See e.g. Bell v. Burson*, 402 U.S. 535, 542; Wisconsin v. Constantineau, 400 U.S. 433, 437; *Goldberg v. Kelly*, 397 U.S. 254; *Armstrong v. Manzo*, 380 U.S., at 551; *Mullane v. Central Hanover Tr. Co.*, supra, at 313; *Opp Cotton Mills v. Administrator*, 312 U.S. 126, 152-153; *United States v. Illinois Central R. Co.*, 291 U.S. 457, 463; *Londoner v. City & County of Denver*, 210 U.S. 373, 385-386. See *In re Ruffalo*, 390 U.S. 544, 550-551. "That the hearing required by due process is subject to waiver, and is not fixed in form does not affect its root requirement that an individual be given an opportunity for a hearing *before* he is deprived of any significant property interest, except for extraordinary situations where some valid governmental interest is at stake that justifies postponing the hearing until after the event." *Boddie v. Connecticut*, supra, at 378-379 (emphasis in original).

[11] *Mesadieu*, 180 F. Supp. 3d at 1123.

[12] Id.

[13] Id.

[14] ECF 467 at pg. 149.

Without due process a claim should not proceed against any non-party, including shareholders of IAS. In *United States v. 51 Pieces of Real Property Roselli, N.M.*, 17 F.3d 1306 (10th Cir. 1994), relied upon by Plaintiff, an action was initiated, the complaining party was named as a defendant, and plaintiff attempted to have that party served a complaint before it pursued default and seizure of an asset. *Id.* Although proceeding under a federal forfeiture statute which was specifically void of any due process requirements, the Court recognized that "due process requires that a person be given notice and an opportunity for a hearing before being deprived of a property interest."[15] No such hearing has ever taken place in this case as to the shareholders of IAS.

III. The SEC got it Right

Without notice to the Court or the Defendants, the Receiver requested the SEC cancel the IAS shares. The SEC declined. Then again, without notice to the Court or the Defendants, the Receiver requested FINRA cancel the shares. FINRA declined. Both of these efforts were unopposed (because no one was alerted that the Receiver was making these attempts) and both failed. They failed for good reason. This Court should also deny the motion.

DATED this 6th day of June, 2019.

NELSON SNUFFER DAHLE & POULSEN

/s/ Denver C. Snuffer, Jr.
Denver C. Snuffer, Jr.
Daniel B. Garriott
Steven R. Paul
Attorneys for Defendant International Automated Systems

[15] *Id.* (citing *Fuentes v. Shevin*, 407 U.S. 67, 81-82, 32 L. Ed. 2d 556, 92 S. Ct. 1983 (1972)).

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing **SOLCO I, LLC'S OBJECTION TO ORDER ON MEMORANDUM AND DECISION AND ORDER ON RECEIVER'S MOTION TO INCLUDE AFFILIATES AND SUBSIDIARIES IN RECIEVERSHIP (ECF 636)**was sent to counsel for the United States in the manner described below.

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/s/ Steven R. Paul
Attorneys for Defendants

100 kW Water and Energy Recovery or WER System

Commercialization Status Report

By

Johnny Kraczek

Paul Freeman

May 17, 2019

Wisdom Farms Technology Development Group LLC - WTD

The 100 KW Water and Energy Recovery System

What is it?

The 100 KW Water and Energy Recovery System (WER) developed by Wisdom Farms Technology Development LLC generates electricity from dirty water, bio slurries and/or biofuel gases. It's outputs are up to 100 Kilowatts of electricity and very pure water. It also completely eliminates the air born pollutions, toxins and smog makers associated with burning biofuel, frack well sour gas, land fill gases, or even natural gas. It can use sewer sludge, frack wastewater, or other liquid biofuels as a fuel source with no after airborne pollutions or odors. The system can also use wet biofuels like duck weed or slurry made from other fast-growing plants such as grass, kudzu, Egyptian reeds, king grass, sea kelp or unwanted fast-growing invasive species, without the requirement for pre-drying. Even sea water can be fed into the system with fuel slurries, and output as pure water.

How does the WER technology work?

Water containing hydrocarbons such as oils, or bioliquids are fed into a high temperature and pressure reactor. Natural gas, sour gas, or biogas may also be fed into the reactor.

Air is also pumped into the reactor under high pressure.

The water in the reactor is heated under pressure until it becomes supercritical. In this highly excited state, the water changes properties from a solvent to a catalyst and the hydrocarbons in the water begin to break down and react with the air as it bubbles through. This chemical reaction produces heat as hydrogen atoms in the biofuels break away from the carbon chains and react with oxygen in the air bubbles creating new water and heat. On the other hand, the carbon also reacts with the air. Long chain hydrocarbons, even carcinogenic compounds, break down into the most basic elements.

Since the reaction occurs underwater, there is no flue gas that needs to be filtered or scrubbed. The normal problems with biofuel gas, such as air born sulfur compounds, are eliminated.

Once the reactions begin to generate heat, the superheated water is fed into a Johnson Turbine. In the turbine, the supercritical water remains liquid until it passes into steam nozzles mounted on the ends of arms connected to the drive shaft. As the liquid hits atmospheric pressure, the liquid explodes into steam, which drives the arms turning the drive shaft.

As the water explodes to steam, the minerals that were in solution in the water are now left behind and are sprayed onto the turbine housing walls and collected in a sump. The steam leaves the housing and passes through a Johnson heat exchanger/condenser, where the pure water is condensed and is pumped to a pure water storage tank which can then be pumped out for use as distilled water or for whatever other purposes are required.

The drive shaft is coupled with a generator and can produce up to 100 kilowatts of AC electricity.

WER System Advantages

The WER system has significant advantages or traditional boiler or diesel combustion electricity generation systems. These include:

1. Higher energy to fuel conversion. The WER is more efficient than typical Carnot cycle engine generators

2. Extremely low maintenance costs when compared with diesels or gas generators, without engine rebuilds as required by traditional systems
3. Very short down time to trade out steam nozzles, the only significant wear part
4. By distilling the process water, the system can greatly reduce fresh water and dirty water treatment costs
5. May eliminate the need to haul out frack water from a well site or haul in diesel to drive remote generators and all the associated haul and truck costs
6. Significant if not total elimination of emissions and reduction in permitting costs
7. Strong potential for good PR

Approaching Completion

The engineering and technical teams at Wisdom Farms Technology development have been actively migrating the WER system from patent and concept to commercial ready equipment with UL listed controls and code compliant tubing and reactors. This extensive work has been completed over the last 9 months and represents thousands of engineering and technical hours. The first stage engineering and design work is now complete on the 100 KW WER Model. Substantial work has also been completed on a 500 KW model.

Current Assembly Status

All specified parts have been purchased and the 100 KW is currently in assembly and final fabrication. This work is being done by trained technicians and the progress is good. The teams expect to be completed with assembly in the next few weeks, with customer trial runs in the first weeks of June.

Current Manufacturing Agreements and Plans

Wisdom Farms Technology Development has agreements in place for the fabrication of additional units based on orders. Current fabrication and assembly partners feel they can produce up to 8 units per day given a set up ramp of two months for total production out of existing facilities around 2000 units per year.

As sales warrant additional capacity other available local facilities including one north of Ogden could be tooled up to produce 24 units per day or an additional 6000 units per year.

Wisdom Farms Technology Development Group has excellent contacts both nationally and internationally with machine shops and fabricators that support large car plants and other manufacturers that can be employed to tool up and start making additional units as larger sales demands grow.

Current Marketing Status

Markets

Looking at the US alone there are significant numbers of potential sites for the WER systems. Both electricity and water are the key building blocks for all communities and a significant portion of these communities produce sewage that could be used as a fuel stream for producing power and water.

Biogas

In the US alone it is estimated that there are more than 2,000 sites producing biogas. About 1/3 of these plants attempt to use the biogas as a fuel. Nearly all these plants require some electrical power, thus making them candidates for the WER systems.

Wastewater Treatment

There are well over 16,000 public wastewater treatment facilities in the US. These all require electricity for pumps and other equipment and using the WER systems could self-power these facilities. In many cases these plants are large enough to have potential to generate several Megawatts using the sewage sludge.

Food and Dairy Waste Streams

In the US there are an estimated 42,000 dairy farms with more than 10 head of cows, with an average herd size just under 200 cows. There are an estimated 69,100 swine operations. Wash down and clean up water on dairy and swine farms and post treatment is a significant cost in these businesses as is electricity. Manure is also an excellent energy stream for the WER systems. Each of these operations could self-generate power and provide pure water for animal drinking and clean up.

Frack Water Oil Well Sites

In the US alone there is an estimated 1.6 million frack water oil wells. While this number is staggeringly high, there are actually a significant number of these sites that produce more Frack water then oil. This means that those sites have to spend money transporting the water to frack water facilities. In addition, many of these sites also release sour gas, or methane with very high sulfur content. Currently this gas is flared on site adding to the problems of pollution and acid rain. However, the sour gas and frack water could be used to power the 100KW WER system reducing the cost of operating the well significantly.

Islands and Costal Communities Worldwide

There are about 22,000 inhabit islands worldwide and many times that the number of coastal communities worldwide.

Market Totals

Just looking at the US markets mentioned above there are more than 128,000 potential sites not counting frack water wells at more than 1.6 million oil well sites. Worldwide this is a very large market with strong demands.

Marketing Initiatives

Seasoned and experienced distributors have negotiated positions for selling the WER equipment. Discussions have already been conducted with major Biogas plant owners and major Frack Water well operators, as well as other manufacturing plants.

Sales Projections

Market need is strong in the potential sectors mentioned above. In many cases these sites use diesel generators to produce their power. CAT engineers estimate that dual fuel diesels running on biogas or frack gas have only a 20% life span compared to dual fuel diesels running on diesel and high-grade natural gas. This means that the generator rebuilds and turn over in this market is very high, so the potential to sell into the market is already built into client's financial models.

Even in the best cases the diesel generators are on a five to seven-year replacement cycle. This means that the entire market is buying new generators at least once in every ten years. Each of these turns represents an opportunity to sell a WER unit instead.

If the assumption is made to sell 10% of the 128,000 potential farm and biogas customers, the market is more than 12,800 units. If 1% of the frack well sites is captured, then the potential sales numbers are 160,000 units. Distributors who have requested the opportunity to sell into these markets feel that these numbers are actually low, and they plan on selling many times more.

The following table shows potential sales as various potential market percentages:

Potential Market for Bio and Food 128,000			Potential Frack Well Market 1,600,000	
%of Market	Annual Unit Sales		%of Market	Annual Unit Sales
1%	1,280		1%	16,000
2%	2,560		2%	32,000
3%	3,840		3%	48,000
4%	5,120		4%	64,000
5%	6,400		5%	80,000
6%	7,680		6%	96,000
7%	8,960		7%	112,000
8%	10,240		8%	128,000
9%	11,520		9%	144,000
10%	12,800		10%	160,000
11%	14,080		11%	176,000
12%	15,360		12%	192,000

Financial Model

ROI and NVP for End Clients

100kW and 500kW WER Unit Financials		
	100 kW	500 kW
Cost of Electricity	$ 0.11	$ 0.11
Availability	95%	95%
kW Hours per Year	832,200	4,161,000
Dollars Offset per Year	**$ 91,542**	**$ 457,710**
Cost to Manufacture	**$ 298,200**	**$ 1,060,800**
Royal %	10%	10%
Johnson and AIUS Investor Royalty	$ 29,820	$ 106,080
Sub Total	**$ 328,020**	**$ 1,166,880**
Sales Commission %	6%	6%
Sales Commission	$ 19,681	$ 70,013
Total	**$ 347,701**	**$ 1,236,893**

Basic Assumptions and Key Information:

- $0.11 per kWh Cost of electricity
- 95% - Availability of the unit
- Equipment runs 24/7 throughout the year
- Fuel is byproduct such as sour gas, biogas, sewer, etc.
- These numbers do not include other benefits such as possible money saved in water treatment, sale of water, or the costs to dispose of the byproducts

Investment Numbers		
	100 kW	500 kW
Return on Investment - ROI	**26%**	**37%**
Discount Rate	10%	10%
Life Span of Unit (Years)	20	20
Net Present Value - NPV	**$ 1,316,699**	**$ 7,085,107**
Pay Back (Years)	**3.80**	**2.70**

Basic assumptions:

- 10% - Better than average return

- ROI - Rudimentary gauge of an investment's profitability, Higher than 12% is considered good by most investors
- NPV - The difference between the present value of cash inflows and the present value of cash outflows over a period of time
  - The amount of money made or lost over the money spent
  - This amount is in addition to the return rate of 10% annual
- Pay Back – Amount of years to break even

Potential Revenue and Royalty Dividends for Bio Market

The following table looks at the potential gross revenue and investor royalty dividend generated for the given percent of the bio market sold into. The revenue and royalty for the 100kW WER unit are used to be conservative:

Bio Market Revenue and Royalty

%of Market	Potential Market 128,000	Gross Sales $ 347,701	Royalty Dividend $ 29,820
1%	1,280	$ 445,057,280	$ 38,169,600
2%	2,560	$ 890,114,560	$ 76,339,200
3%	3,840	$ 1,335,171,840	$ 114,508,800
4%	5,120	$ 1,780,229,120	$ 152,678,400
5%	6,400	$ 2,225,286,400	$ 190,848,000
6%	7,680	$ 2,670,343,680	$ 229,017,600
7%	8,960	$ 3,115,400,960	$ 267,187,200
8%	10,240	$ 3,560,458,240	$ 305,356,800
9%	11,520	$ 4,005,515,520	$ 343,526,400
10%	12,800	$ 4,450,572,800	$ 381,696,000
11%	14,080	$ 4,895,630,080	$ 419,865,600
12%	15,360	$ 5,340,687,360	$ 458,035,200

Potential Revenue and Royalty Dividends for Frack Water Market

The following table looks at the potential gross revenue and investor royalty dividend generated for the given percent of the frack water market sold into. The revenue and royalty for the 100kW WER unit are used to be conservative:

Frack Water Revenue and Royalty

%of Market	Potential Market 1,600,000	Gross Sales $ 347,701	Royalty Dividend $ 29,820
1%	16,000	$ 5,563,216,000	$ 477,120,000
2%	32,000	$11,126,432,000	$ 954,240,000
3%	48,000	$16,689,648,000	$ 1,431,360,000
4%	64,000	$22,252,864,000	$ 1,908,480,000
5%	80,000	$27,816,080,000	$ 2,385,600,000
6%	96,000	$33,379,296,000	$ 2,862,720,000
7%	112,000	$38,942,512,000	$ 3,339,840,000
8%	128,000	$44,505,728,000	$ 3,816,960,000
9%	144,000	$50,068,944,000	$ 4,294,080,000
10%	160,000	$55,632,160,000	$ 4,771,200,000
11%	176,000	$61,195,376,000	$ 5,248,320,000
12%	192,000	$66,758,592,000	$ 5,725,440,000

Final Comments

It is rare to see a technology with as much potential to meet core market needs with as positive an environmental impact as the WER system has. In addition, the potential sales numbers are impressive even at very low market penetrations. However, with the significant maintenance advantages we expect this product to take the market in major ways.

Beginning of Construction for the Investment Tax Credit under Section 48

Notice 2018-59

SECTION 1. PURPOSE

On December 18, 2015, the Consolidated Appropriations Act, 2016, Pub. L. No. 114-113, Div. P, Title III, § 303, 129 Stat. 2242, extended and modified the investment tax credit (ITC) under § 48 of the Internal Revenue Code (Code). As modified, § 48 phases down the ITC for solar energy property the construction of which begins after December 31, 2019, and before January 1, 2022, and further limits the amount of the § 48 credit available for solar energy property that is not placed in service before January 1, 2024.

On February 9, 2018, the Bipartisan Budget Act of 2018, Pub. L. 115-123, Div. D, Title I, § 40411, 132 Stat. 150 (BBA 2018), modified the ITC under § 48 by replacing the requirement to place energy property in service by a certain date with a requirement to begin construction by a certain later date. Prior to the modification, energy property was required to be placed in service by a certain date (before January 1, 2016, or January 1, 2017, depending on the type of energy property). As modified, construction of energy property must begin before January 1, 2022. This modification has the effect of retroactively extending by five years the ITC for fiber-optic solar, qualified fuel cell, qualified microturbine, combined heat and power system (CHP), qualified small wind, and geothermal heat pump property the construction of which begins before January 1,

2022. The amendments also phase out the ITC for fiber-optic solar, qualified fuel cell, and qualified small wind energy property over five years. For these energy properties, regardless of when construction begins, the projects must be placed in service before January 1, 2024.

This notice provides guidance to determine when construction has begun on energy property that is eligible for the § 48 credit. It provides two methods for taxpayers to establish the beginning of construction (Physical Work Test and Five Percent Safe Harbor), a Continuity Requirement for both methods, rules for transferring energy property, and additional rules applicable to the beginning of construction requirement of § 48.

The Internal Revenue Service (Service) will not issue private letter rulings or determination letters to taxpayers regarding the application of this notice or the beginning of construction requirement of § 48.

SECTION 2. BACKGROUND

.01 In general. Section 48 provides that the ITC for any taxable year is the energy percentage of the basis of each energy property placed in service during such taxable year. For most types of energy property, eligibility for the ITC, and in some cases the amount of the ITC for which energy property is eligible, are dependent upon meeting certain deadlines for beginning construction on the energy property and placing the energy property in service. The table below summarizes these requirements, which are set forth in more detail in section 2.03 of this notice.

Type of Energy Property	Date Construction Begins	Placed in Service Date	ITC Amount
Solar	Before 1/1/20	Before 1/1/24	30%
	1/1/20 – 12/31/20	Before 1/1/24	26%
	1/1/21 – 12/31/21	Before 1/1/24	22%
	Before 1/1/22	On or after 1/1/24	10%
	On or after 1/1/22	Any	10%
Fiber-Optic Solar	Before 1/1/20	Before 1/1/24	30%
	1/1/20 – 12/31/20	Before 1/1/24	26%
	1/1/21 – 12/31/21	Before 1/1/24	22%
	Before 1/1/22	On or after 1/1/24	0%
	On or after 1/1/22	Not applicable	0%
Geothermal	Any	Any	10%
Qualified Fuel Cell	Before 1/1/20	Before 1/1/24	30%
	1/1/20 – 12/31/20	Before 1/1/24	26%
	1/1/21 – 12/31/21	Before 1/1/24	22%
	Before 1/1/22	On or after 1/1/24	0%
	On or after 1/1/22	Not applicable	0%
Qualified Microturbine	Before 1/1/22	Any	10%
	On or after 1/1/22	Not applicable	0%
CHP	Before 1/1/22	Any	10%
	On or after 1/1/22	Not applicable	0%
Qualified Small Wind	Before 1/1/20	Before 1/1/24	30%
	1/1/20 – 12/31/20	Before 1/1/24	26%
	1/1/21 – 12/31/21	Before 1/1/24	22%
	Before 1/1/22	On or after 1/1/24	0%
	On or after 1/1/22	Not applicable	0%
Geothermal Heat Pump	Before 1/1/22	Any	10%
	After 1/1/22	Not applicable	0%

Section 48(d)(1) provides that in the case of any energy property with respect to which the Secretary of the Treasury (Secretary) makes a grant under § 1603 of the American Recovery and Reinvestment Tax Act of 2009 (§ 1603 Grant), no § 45 or § 48 credit can be determined with respect to such energy property for the taxable year in which such grant is made or any subsequent taxable year. Section 48(d)(2) also provides for the recapture of a § 48 credit for qualified progress expenditures made before a § 1603 grant.

.02 Energy Property. Section 48(a)(3) provides that the term "energy property" means any property (A) listed in § 48(a)(3)(A), (B) the construction, reconstruction, or erection of which is completed by the taxpayer, or which is acquired by the taxpayer if the original use of such property commences with the taxpayer, (C) with respect to which depreciation (or amortization in lieu of depreciation) is allowable, and (D) which meets the performance and quality standards (if any) which have been prescribed by the Secretary by regulations (after consultation with the Secretary of Energy), and are in effect at the time of the acquisition of the property. Notably, the term "energy property" does not include any property which is part of a facility the production from which is allowed as a credit under § 45 for the taxable year or any prior taxable year.

.03 Types of Energy Property.

(1) Solar Energy Property. Section 48(a)(3)(A)(i) provides that energy property includes equipment which uses solar energy to generate electricity, to heat or cool (or provide hot water for use in) a structure, or to provide solar process heat, excepting property used to generate energy for the purposes of heating a swimming pool.

January 1, 2024, the energy percentage is 26 percent; and for fiber-optic solar energy property the construction of which begins after December 31, 2020, and before January 1, 2022, and which is placed in service before January 1, 2024, the energy percentage is 22 percent. For fiber-optic solar energy property the construction of which begins after December 31, 2021, and for fiber-optic solar energy property the construction of which begins before January 1, 2022, but that is not placed in service before January 1, 2024, the ITC is eliminated.

(3) Geothermal Property. Section 48(a)(3)(A)(iii) provides that energy property includes equipment used to produce, distribute, or use energy derived from a geothermal deposit (within the meaning of § 613(e)(2)), but only, in the case of electricity generated by geothermal power, up to (but not including) the electrical transmission stage. Section 48(a)(2)(A)(ii) provides that the energy percentage for geothermal property is 10 percent.

(4) Qualified Fuel Cell Property. Section 48(a)(3)(A)(iv) provides that energy property includes qualified fuel cell property. Section 48(c)(1) generally defines qualified fuel cell property as a fuel cell power plant, which is an integrated system comprised of a fuel cell stack assembly and associated balance of plant components that converts a fuel into electricity using electrochemical means. To qualify for the ITC, qualified fuel cell property must have a nameplate capacity of at least 0.5 kilowatt of electricity using an electrochemical process and an electricity-only generation efficiency greater than 30 percent. Section 48(c)(1)(D) provides that qualified fuel cell property does not include any property the construction of which does not begin before January

1, 2022.

Section 48(a)(2)(A)(i)(I) provides that the energy percentage for qualified fuel cell property is 30 percent. However, § 48(a)(7) overlays a phase-down of the ITC for qualified fuel cell property the construction of which begins after December 31, 2019. For qualified fuel cell property the construction of which begins after December 31, 2019, and before January 1, 2021, and which is placed in service before January 1, 2024, the energy percentage is 26 percent; and for qualified fuel cell property the construction of which begins after December 31, 2020, and before January 1, 2022, and which is placed in service before January 1, 2024, the energy percentage is 22 percent. For qualified fuel cell property the construction of which begins before January 1, 2022, but that is not placed in service before January 1, 2024, the ITC is eliminated.

(5) Qualified Microturbine Property. Section 48(a)(3)(A)(iv) also provides that energy property includes qualified microturbine property. Section 48(c)(2) generally defines qualified microturbine property as a stationary microturbine power plant, which is an integrated system comprised of a gas turbine engine, a combustor, a recuperator or regenerator, a generator or alternator, and associated balance of plant components which converts a fuel into electricity and thermal energy. Such term also includes all secondary components located between the existing infrastructure for fuel delivery and the existing infrastructure for power distribution, including equipment and controls for meeting relevant power standards, such as voltage, frequency, and power factors.

To qualify for the ITC, qualified microturbine property must have a nameplate capacity of less than 2,000 kilowatts, and an electricity-only generation efficiency of not

less than 26 percent at International Standard Organization conditions. Section 48(a)(2)(A)(ii) provides that the energy percentage for qualified microturbine property is 10 percent. Under section 48(c)(2)(D), the term "qualified microturbine property" shall not include any property the construction of which does not begin before January 1, 2022.

(6) Combined Heat and Power System (CHP) Property. Section 48(a)(3)(A)(v) provides that energy property includes CHP property. Section 48(c)(3) generally defines CHP property as property comprising a system that uses the same energy source for the simultaneous or sequential generation of electrical power, mechanical shaft power, or both, in combination with the generation of steam or other forms of useful thermal energy (including heating and cooling applications).

To qualify for the ITC, CHP property must produce at least 20 percent of its total useful energy in the form of thermal energy which is not used to produce electrical or mechanical power (or combination thereof), and at least 20 percent of its total useful energy in the form of electrical or mechanical power (or combination thereof). Additionally, CHP property must have an energy efficiency percentage that exceeds 60 percent, except in the case of CHP systems that use biomass (as provided in § 48(c)(3)(D)). The construction of CHP property must begin before January 1, 2022. Section 48(a)(2)(A)(ii) provides that the energy percentage for CHP property is 10 percent, though § 48(c)(3)(B) provides a special formula for determining the ITC of CHP property with certain electrical capacity, and § 48(c)(3)(D)(ii) provides a special formula for determining the ITC of CHP systems that use biomass.

(7) Qualified Small Wind Energy Property. Section 48(a)(3)(A)(vi) provides that energy property includes qualified small wind energy property. Section 48(c)(4) defines qualified small wind energy property as property which uses a qualifying small wind turbine to generate electricity. To qualify for the ITC, a qualifying small wind turbine must have a nameplate capacity of not more than 100 kilowatts. For additional information on performance and quality standards that certain small wind energy property must meet to qualify for the ITC under § 48 see Notice 2015-4, 2015-5 I.R.B. 407, as modified by Notice 2015-51, 2015-31 I.R.B. 133. Section 48(c)(4)(C) provides that qualified small wind energy property does not include any property the construction of which does not begin before January 1, 2022.

Section 48(a)(2)(A)(i)(IV) provides that the energy percentage for qualified small wind energy property is 30 percent. However, § 48(a)(7) overlays a phase-down of the ITC for qualified small wind energy property the construction of which begins after December 31, 2019. For qualified small wind energy property the construction of which begins after December 31, 2019, and before January 1, 2021, and which is placed in service before January 1, 2024, the energy percentage is 26 percent; and for qualified small wind energy property the construction of which begins after December 31, 2020, and before January 1, 2022, and which is placed in service before January 1, 2024, the energy percentage is 22 percent. For qualified small wind energy property the construction of which begins prior to January 1, 2022, but that is not placed in service before January 1, 2024, the ITC is eliminated.

(8) Geothermal Heat Pump Property. Section 48(a)(3)(A)(vii) provides that

energy property includes geothermal heat pump equipment which uses the ground or ground water as a thermal energy source to heat a structure or as a thermal energy sink to cool a structure, but only with respect to property the construction of which begins before January 1, 2022. Section 48(a)(2)(A)(ii) provides that the energy percentage for geothermal heat pump property is 10 percent.

SECTION 3. METHODS FOR ESTABLISHING BEGINNING OF CONSTRUCTION

.01 In general. This notice provides two methods for a taxpayer to establish that construction of energy property has begun for purposes of the ITC under § 48. A taxpayer may establish the beginning of construction by starting physical work of a significant nature as set forth in section 4 of this notice (Physical Work Test). Alternatively, a taxpayer may establish the beginning of construction by meeting a safe harbor based on having paid or incurred five percent or more of the total cost of the energy property as set forth in section 5 of this notice (Five Percent Safe Harbor).

Both methods require that a taxpayer make continuous progress towards completion once construction has begun (Continuity Requirement). Section 6 of this notice discusses the Continuity Requirement and provides a safe harbor for satisfying this requirement (Continuity Safe Harbor).

.02 Combination of methods. Although a taxpayer may satisfy both methods of establishing the beginning of construction, construction will be deemed to have begun on the date the taxpayer first satisfies one of the two methods. For example, if a taxpayer performs physical work of a significant nature on energy property in 2018, and then pays or incurs five percent or more of the total cost of the energy property in 2019,

construction will be deemed to begin in 2018 under the Physical Work Test, not in 2019 under the Five Percent Safe Harbor. Thus, the Continuity Safe Harbor will be applied beginning in 2018, not in 2019. This section 3.02 applies to energy property the construction of which begins, as determined under the earlier of either the Physical Work Test or the Five Percent Safe Harbor, after December 31, 2018.

SECTION 4. PHYSICAL WORK TEST

.01 In general. Construction of energy property begins when physical work of a significant nature begins. Work performed by the taxpayer and work performed for the taxpayer by other persons under a binding written contract that is entered into prior to the manufacture, construction, or production of the energy property or components of energy property for use by the taxpayer in the taxpayer's trade or business (or for the taxpayer's production of income) is taken into account to determine whether construction has begun. Whether and when a taxpayer has begun construction of energy property will depend on the relevant facts and circumstances. The Service will closely scrutinize energy property and may determine that construction has not begun on that property if a taxpayer does not maintain a continuous program of construction (as determined under section 6.01 of this notice).

.02 Physical Work of a Significant Nature. The Physical Work Test requires that a taxpayer begin physical work of a significant nature. This test focuses on the nature of the work performed, not the amount or the cost. Assuming that physical work performed is of a significant nature, there is no fixed minimum amount of work or monetary or percentage threshold required to satisfy the Physical Work Test. Both off-

site and on-site work may be taken into account for purposes of demonstrating that physical work of a significant nature has begun (see section 7.04 of this notice).

(1) Off-Site Physical Work of a Significant Nature. Generally, off-site physical work of a significant nature may include the manufacture of components, mounting equipment, support structures such as racks and rails, inverters, and transformers (used in electrical generation that step up the voltage to less than 69 kilovolts) and other power conditioning equipment.

(2) On-Site Physical Work of a Significant Nature. This non-exclusive list of examples is intended to illustrate on-site physical work of a significant nature for different types of energy property:

(a) Solar Energy Property. On-site physical work of a significant nature may include the installation of racks or other structures to affix photovoltaic (PV) panels, collectors, or solar cells to a site.

(b) Fiber-Optic Solar Energy Property. On-site physical work of a significant nature may include the installation of collectors, concentrators, tracking systems, bundles of optical fibers, or fixtures within a structure.

(c) Geothermal Property. On-site physical work of a significant nature may include physical activities that are undertaken at a project site after a valid discovery such as the installation of piping, turbines, generators, flash tanks, or heat exchangers.

(d) Qualified Fuel Cell Property. On-site physical work of a significant nature may include the installation of components of a fuel cell stack assembly such as electrodes, gas diffusion layers, membranes, gasketing, or plates.

(e) Qualified Microturbine Property. On-site physical work of a significant nature may include the installation of a gas turbine engine, combustor, recuperator, regenerator, generator, alternator, or other plant components.

(f) CHP Property. On-site physical work of a significant nature may include the installation of a heat engine, generator, heat recovery components, or electrical interconnections.

(g) Qualified Small Wind Energy Property. On-site physical work of a significant nature may include the installation of a foundation, tower, wiring, or grounding systems.

(h) Geothermal Heat Pump Property. On-site physical work of a significant nature may include the installation of ground heat exchangers, heat pump units, or air delivery systems (ductwork).

.03 Preliminary Activities. Physical work of a significant nature does not include preliminary activities, even if the cost of those preliminary activities is properly included in the depreciable basis of the energy property. Generally, preliminary activities include, but are not limited to:

(a) planning or designing;

(b) securing financing;

(c) exploring;

(d) researching;

(e) conducting mapping and modeling to assess a resource;

(f) obtaining permits and licenses;

(g) conducting geophysical, gravity, magnetic, seismic and resistivity surveys;

(h) conducting environmental and engineering studies;

(i) performing activities to develop a geothermal deposit prior to valid discovery;

(j) clearing a site;

(k) conducting test drilling to determine soil condition (including to test the strength of a foundation);

(l) excavating to change the contour of the land (as distinguished from excavation for a foundation); and

(m) removing existing foundations, turbines, and towers, solar panels, or any components that will no longer be part of the energy property (including those on or attached to building structures).

.04 Inventory. Physical work of a significant nature does not include work (performed either by the taxpayer or by another person under a binding written contract) to produce components of energy property that are either in existing inventory or are normally held in inventory by a vendor.

SECTION 5. FIVE PERCENT SAFE HARBOR

.01 In general. Construction of energy property will be considered as having begun if:

(1) a taxpayer pays or incurs (within the meaning of Treas. Reg. § 1.461-1(a)(1) and (2)) five percent or more of the total cost of the energy property, and

(2) thereafter, the taxpayer makes continuous efforts to advance towards completion of the energy property (as determined under section 6.02 of this notice).

.02 Total Cost of Energy Property. All costs properly included in the depreciable

basis of the energy property are taken into account to determine whether the Five Percent Safe Harbor has been met. The total cost of the energy property does not include the cost of land or any property not integral to the energy property, as described in section 7.02 of this notice.

.03 Cost Overruns. (1) Single Project. If the total cost of an energy property that is a single project comprised of multiple energy properties (as described in section 7.01(2) of this notice) exceeds its anticipated total cost, so that the amount a taxpayer actually paid or incurred with respect to the single project turns out to be less than five percent of the total cost of the single project at the time it is placed in service, the Five Percent Safe Harbor is not fully satisfied. However, the Five Percent Safe Harbor will be satisfied and the § 48 credit may be claimed with respect to some, but not all, of the energy properties (as described in section 7.01(1) of this notice) comprising the single project, as long as the total aggregate cost of those energy properties is not more than twenty times greater than the amount the taxpayer paid or incurred.

(a) Example. In 2018, taxpayer incurs $25,000 in costs to construct Project A, comprised of five energy properties that will be operated as a single project. Taxpayer anticipates that each energy property will cost $100,000 for a total cost for Project A of $500,000. Thereafter, the taxpayer makes continuous efforts to advance towards completion of Project A. The taxpayer timely places Project A in service in a later year. At that time, the actual total cost of Project A amounts to $600,000, with each energy property costing $120,000. Although the taxpayer did not pay or incur five percent of the actual total cost of Project A in 2018, the taxpayer will be treated as satisfying the

Five Percent Safe Harbor in 2018 with respect to four of the energy properties, as their actual total cost of $480,000 is not more than twenty times greater than the $25,000 in costs incurred by the taxpayer. Thus, the taxpayer may claim the § 48 credit based on $480,000, the cost of four of the energy properties.

(2) Single Energy Property. If the total cost of a single energy property, which is not part of a single project comprised of multiple energy properties (as described in section 7.01(2) of this notice) and cannot be separated into multiple energy properties, exceeds its anticipated total cost so that the amount a taxpayer actually paid or incurred with respect to the single energy property as of an earlier year is less than five percent of the total cost of the single energy property at the time it is placed in service, then the taxpayer will not satisfy the Five Percent Safe Harbor with respect to any portion of the single energy property in such earlier year.

(a) Example. In 2018, a taxpayer incurs $25,000 in costs to construct Project B, an energy property. The taxpayer anticipates that the total cost of Project B will be $500,000. Thereafter, the taxpayer makes continuous efforts to advance towards completion of Project B. The taxpayer places Project B in service in a later year. At that time, its actual total cost amounts to $600,000. Because Project B is a single energy property that is not a single project comprised of multiple energy properties, the taxpayer will not satisfy the Five Percent Safe Harbor as of 2018. However, if the construction of Project B satisfies the requirements of the Physical Work Test, the taxpayer may be able to demonstrate that construction began in 2018 and claim the § 48 credit with respect to Project B.

SECTION 6. CONTINUITY REQUIREMENT

.01 Physical Work Test: Continuous Construction Test. A continuous program of construction involves continuing physical work of a significant nature (as described in section 4.02 of this notice). Whether a taxpayer maintains a continuous program of construction to satisfy the Continuity Requirement will be determined by the relevant facts and circumstances.

.02 Five Percent Safe Harbor: Continuous Efforts Test. Whether a taxpayer makes continuous efforts to advance towards completion of an energy property to satisfy the Continuity Requirement will be determined by the relevant facts and circumstances. Facts and circumstances indicating continuous efforts to advance towards completion of an energy property may include, but are not limited to:

(a) paying or incurring additional amounts included in the total cost of the energy property;

(b) entering into binding written contracts for the manufacture, construction, or production of components of property or for future work to construct the energy property;

(c) obtaining necessary permits; and

(d) performing physical work of a significant nature (as described in section 4.02 of this notice).

.03 Excusable Disruptions to Continuous Construction and Continuous Efforts Tests. Certain disruptions in a taxpayer's continuous construction or continuous efforts to advance towards completion of an energy property that are beyond the taxpayer's

control will not be considered as indicating that a taxpayer has failed to satisfy the Continuity Requirement. However, these disruptions will not extend the Continuity Safe Harbor Deadline as provided in section 6.05 of this notice.

The following is a non-exclusive list of construction disruptions that will not be considered as indicating that a taxpayer has failed to satisfy the Continuity Requirement:

(a) delays due to severe weather conditions;

(b) delays due to natural disasters;

(c) delays in obtaining permits or licenses from federal, state, local, or Indian tribal governments, including, but not limited to, delays in obtaining permits or licenses from the Federal Energy Regulatory Commission (FERC), the Environmental Protection Agency (EPA), the Bureau of Land Management (BLM), and the Federal Aviation Agency (FAA);

(d) delays at the written request of a federal, state, local, or Indian tribal government regarding matters of public safety, security, or similar concerns;

(e) interconnection-related delays, such as those relating to the completion of construction on a new transmission or distribution line or necessary transmission or distribution upgrades to resolve grid congestion issues that may be associated with a project's planned interconnection;

(f) delays in the manufacture of custom components;

(g) delays due to labor stoppages;

(h) delays due to the inability to obtain specialized equipment of limited availability;

(i) delays due to the presence of endangered species;

(j) financing delays; and

(k) delays due to supply shortages.

.04 Timing of Excusable Disruption Determination. In the case of a single project comprised of a single energy property, whether an excusable disruption has occurred for purposes of the beginning of construction requirement of § 48 must be determined in the calendar year during which the energy property is placed in service. In the case of a single project comprised of multiple energy properties, whether an excusable disruption has occurred for purposes of the beginning of construction requirement of § 48 must be determined in the calendar year during which the last of multiple energy properties is placed in service.

.05 Continuity Safe Harbor: Deemed Satisfaction of Continuity Requirement. Except as provided in this section, if a taxpayer places an energy property in service by the end of a calendar year that is no more than four calendar years after the calendar year during which construction of the energy property began (the Continuity Safe Harbor Deadline), the energy property will be considered to satisfy the Continuity Safe Harbor. The excusable disruption rules in section 6.03 do not apply for purposes of applying the Continuity Safe Harbor. However, if an energy property is not placed in service before the end of the fourth calendar year after the calendar year during which construction of the energy property began, whether the energy property satisfies the

Continuity Requirement under either the Physical Work Test or the Five Percent Safe Harbor will be determined by the relevant facts and circumstances.

For example, if construction begins on an energy property on January 15, 2018, and the energy property is placed in service by December 31, 2022, the energy property will be considered to satisfy the Continuity Safe Harbor. If the energy property is not placed in service before January 1, 2023, whether the Continuity Requirement was satisfied will be determined by the relevant facts and circumstances.

Under section 48(a)(7), fiber-optic solar, qualified fuel cell, and qualified small wind energy property must be placed in service before January 1, 2024 to qualify for the ITC. Similarly, section 48(a)(6) reduces the ITC to 10 percent for any solar energy property placed in service after January 1, 2024. The Continuity Safe Harbor does not extend either of these deadlines.

SECTION 7. OTHER RULES APPLICABLE TO PHYSICAL WORK TEST AND FIVE PERCENT SAFE HARBOR

.01 Energy Property. (1) In general. An energy property generally includes all components of property that are functionally interdependent (unless such equipment is an addition or modification to an energy property). Components of property are functionally interdependent if the placing in service of each component is dependent upon the placing in service of each of the other components in order to generate electricity. Functionally-interdependent components of property that can be operated and metered together and can begin producing electricity separately from other components of property within a larger energy project will be considered an energy property. See Rev. Rul. 94-31, 1994-1 C.B. 16.

Generally, energy property is comprised of all components of property necessary to generate electricity up to and including the inverter. This may include PV panels (or other arrangements of solar cells), fiber-optics, fuel cells, turbines, boilers, mounting equipment, support structures, tracking equipment, monitoring equipment, transformers (used in electrical generation that step up the voltage to less than 69 kilovolts) and other power conditioning equipment, and inverters. For rooftop solar energy property, property integral to the generation of electrical energy that is installed on a single rooftop is considered a single unit of property.

(2) Single project. Solely for purposes of determining whether construction of energy property has begun for purposes of the § 48 credit, multiple energy properties that are operated as part of a single project (along with any components of property, such as a computer control system, that serves some or all such energy properties) will be treated as a single energy property. Whether multiple energy properties are operated as part of a single project will depend on the relevant facts and circumstances.

(a) Factors of Single Project Determination. Factors indicating that multiple energy properties are operated as part of a single project may include:

(i) the energy properties are owned by a single legal entity;

(ii) the energy properties are constructed on contiguous pieces of land;

(iii) the energy properties are described in a common power purchase agreement or agreements;

(iv) the energy properties have a common intertie;

(v) the energy properties share a common substation;

(vi) the energy properties are described in one or more common environmental or other regulatory permits;

(vii) the energy properties were constructed pursuant to a single master construction contract; or

(viii) the construction of the energy properties was financed pursuant to the same loan agreement.

(b) Example. A taxpayer is developing Project C, an energy property that will consist of 50 energy properties. Project C will connect to the power grid through a single intertie, and power generated by Project C will be sold to a local utility through a single power purchase agreement. In 2020, for 10 of the 50 energy properties, the taxpayer installs supporting structures to affix components of the energy property to the foundation. Thereafter, the taxpayer completes the construction of all 50 energy properties and related equipment pursuant to a continuous program of construction. For purposes of the § 48 credit, Project C is a single project that will be treated as a single energy property, and the taxpayer performed physical work of a significant nature that constitutes the beginning of construction of Project C in 2020.

(3) Timing of Single Project Determination. The determination of whether multiple energy properties are operated as part of a single project and are therefore treated as a single energy property for purposes of the beginning of construction requirement of § 48 must be determined in the calendar year during which the last of the multiple energy properties is placed in service.

(4) Disaggregation. Multiple energy properties that are operated as part of a

single project and treated as a single energy property under section 7.01(2) of this notice for purposes of determining whether construction of an energy property has begun may be disaggregated and treated as multiple separate energy properties for purposes of determining whether a separate energy property satisfies the Continuity Safe Harbor. Those disaggregated separate energy properties that are placed in service prior to the Continuity Safe Harbor Deadline will be eligible for the Continuity Safe Harbor. The remaining disaggregated separate energy properties may satisfy the Continuity Requirement under a facts and circumstances determination.

(a) Example. A taxpayer is developing Project D, an energy property that will consist of 50 separate energy properties. Project D will connect to the power grid through a single intertie, and power generated by Project D will be sold to a local utility through a single power purchase agreement. Under the single project rule in section 7.01(2) of this notice, Project D is a single project that will be treated as a single energy property. In 2020, for 10 of the 50 separate energy properties, the taxpayer installs racks and other supporting structures to affix components of the energy property to the foundation. Accordingly, the taxpayer has performed physical work of a significant nature that constitutes the beginning of construction of Project D for purposes of § 48.

Thereafter, the taxpayer places in service only 40 of the 50 separate energy properties in 2024. The taxpayer disaggregates Project D under section 7.01(4) of this notice; 40 of the 50 separate energy properties satisfy the Continuity Safe Harbor. For the remaining 10 separate energy properties, the taxpayer may demonstrate that it satisfies the Continuous Construction Test described in section 6.01 of this notice based

on the facts and circumstances.

.02 Property Integral to Energy Property. (1) In general. Only physical work of a significant nature on tangible personal property and other tangible property used as an integral part of the activity performed by an energy property will be considered for purposes of determining whether a taxpayer has begun construction of the energy property. This includes property integral to the production of electricity, but does not include property used for the transmission of electricity. For purposes of the Five Percent Safe Harbor, the cost of any property not integral to an energy property is not included in the total cost of the energy property under section 5.02 of this notice.

Thus, physical work on, or costs paid or incurred for, a transmission tower located at the site where the energy property is located will not be considered for purposes of determining whether a taxpayer has begun construction because transmission is not an integral part of the activity performed by the energy property. However, physical work on, or costs paid or incurred for, a custom-designed transformer that steps up the voltage of electricity produced at an energy property to the voltage needed for transmission (69 kilovolts or greater) will be considered for purposes of determining whether a taxpayer has begun construction of the energy property because power conditioning equipment is an integral part of the activity performed by the energy property.

(2) Roads. Roads that are integral to an energy property are integral to the activity performed by the energy property; these include onsite roads that are used for equipment to operate and maintain the energy property. Starting construction on, or

paying or incurring costs for, these roads will be taken into account for purposes of determining whether a taxpayer has begun construction of the energy property. Roads primarily for access to the site, or roads used primarily for employee or visitor vehicles, are not integral to the activity performed by an energy property; therefore, physical work on, or costs paid or incurred for, these roads is not taken into account for purposes of determining whether a taxpayer has begun construction of the energy property.

(3) Fencing. Generally, fencing is not an integral part of an energy property because it is not integral to the activity performed by the energy property.

(4) Buildings. Generally, buildings are not integral parts of an energy property because they are not integral to the activity of the energy property. However, the following structures are not treated as buildings for this purpose: (a) a structure that is essentially an item of machinery or equipment, or (b) a structure that houses property that is integral to the activity of an energy property if the use of the structure is so closely related to the use of the housed energy property that the structure clearly can be expected to be replaced when the energy property it initially houses is replaced. See Treas. Reg. § 1.48-1(e).

.03 Construction by Contract. For components of energy property that are manufactured, constructed, or produced for the taxpayer by another person under a binding written contract (as described in section 7.03(1) of this notice), the work performed and amounts paid or incurred under the contract are taken into account in determining when construction begins, provided the contract is entered into prior to the work taking place or the amounts paid or incurred.

(1) Binding Written Contract. A written contract is binding only if it is enforceable under local law against the taxpayer or a predecessor and does not limit damages to a specified amount (for example, by use of a liquidated damages provision). For this purpose, a contractual provision that limits damages to an amount equal to at least five percent of the total contract price will not be treated as limiting damages to a specified amount. For additional guidance regarding the definition of a binding written contract, see Treas. Reg. § 1.168(k)-1(b)(4)(ii)(A)-(D).

(2) Master Contract. If a taxpayer enters into a binding written contract for a specific number of components of property to be manufactured, constructed, or produced for the taxpayer by another person under a binding written contract (master contract), and then through a new binding written contract (project contract) the taxpayer assigns its rights to certain components of property to an affiliated special purpose vehicle that will own the energy property for which such components of property are to be used, work performed or amounts paid or incurred with respect to the master contract may be taken into account in determining when construction begins with respect to the energy property.

.04 Look-through Rule. (1) Physical Work Test. Both on-site and off-site work (performed either by the taxpayer or by another person under a binding written contract) may be taken into account for purposes of demonstrating that physical work of a significant nature has begun with respect to an energy property.

(a) Example. In the case of an energy property, on-site physical work of a significant nature may begin with the beginning of the installation of racks or other

structures to affix components of the energy property to the foundation. If the energy property's racks or other structures are to be assembled on-site from components of property manufactured off-site by a person other than the taxpayer and delivered to the site, physical work of a significant nature begins when the manufacture of the components of property begins at the off-site location, but only if (i) the manufacturer's work is done pursuant to a binding written contract and (ii) these components of property are not held in the manufacturer's inventory. If a manufacturer produces components of property for multiple energy properties, a reasonable method must be used to associate individual components of property with a particular purchaser.

(2) Five Percent Safe Harbor. For an energy property or components of energy property that are manufactured, constructed, or produced for the taxpayer by another person under a binding written contract with the taxpayer, amounts paid or incurred with respect to the energy property by the other person before the energy property is provided to the taxpayer are deemed paid or incurred by the taxpayer when the amounts are paid or incurred by the other person under the principles of § 461.

(a) Example. In 2018, an accrual-method taxpayer, E, enters into a binding written contract with F pursuant to which E will provide components of energy property to F in June 2020. In 2018, E pays G pursuant to a contract for G to provide parts to E (in March 2019) for use in the components of energy property. E's employees provide E with services necessary to design and plan for the production of the components of energy property in 2018 and with services to manufacture (assemble) the components of energy property in 2020. E incurs the cost to design and plan for the production of

the components of energy property in 2018, incurs the costs for the components of energy property in March 2019 when G delivers the components of energy property to E (even though the components of energy property were paid for in 2018), and incurs the costs for E's employees to manufacture the components of energy property in 2020. See Treas. Reg. §§ 1.461-4(d) and 1.446-1(c)(1)(h). The costs E incurred in 2018 for its employees' performance of design and planning activities with respect to the components of energy property are costs deemed incurred by F in 2018 for purposes of the Five Percent Safe Harbor. The other costs in this example were incurred by E in 2019 and 2020 and are costs that F includes in the total cost of the energy property.

.05 Application of 80/20 Rule to Retrofitted Energy Property. (1) In general. Energy property may qualify as originally placed in service even though it contains some used components of property, provided the fair market value of the used components of property is not more than 20 percent of the energy property's total value (the cost of the new components of property plus the value of the used components of property) (80/20 Rule). In the case of a single project comprised of multiple energy properties, the 80/20 Rule is applied to each energy property comprising the single project. For purposes of the 80/20 Rule, the cost of a new energy property includes all properly capitalized costs of the new energy property.

(2) Beginning of Construction. To satisfy the beginning of construction requirement of § 48, the Physical Work Test or the Five Percent Safe Harbor is applied only with respect to the work performed on, or amounts paid or incurred for, new components of property used to retrofit used components of property or an existing

energy property. For the Five Percent Safe Harbor, all costs properly capitalized in the basis of the energy property are taken into account. The total cost of the energy property does not include the cost of land (including lease payments) or any property not integral to the energy property, as described in section 7.02 of this notice.

SECTION 8. TRANSFER OF ENERGY PROPERTY

.01 In general. Section 48(a)(3)(B) provides that energy property is any property the construction, reconstruction, or erection of which is completed by the taxpayer, or which is acquired by the taxpayer if the original use of such property commences with the taxpayer. A taxpayer that owns energy property on the date it is originally placed in service may elect to claim the § 48 credit with respect to the energy property even if the taxpayer did not own the energy property at the time construction began. Any § 48 credit claimed on energy property will be limited to the taxpayer's basis in the energy property. Accordingly, except as provided in section 8.03 of this notice, a fully or partially developed energy property may be transferred without losing its qualification under the Physical Work Test or the Five Percent Safe Harbor for purposes of the § 48 credit.

(1) Example. In August 2018, a developer acquires a parcel of land on which it intends to build and operate Project H, an energy property. The developer contributes the land to its wholly-owned limited liability company (LLC), which is disregarded as an entity separate from its owner for federal tax purposes, to hold and develop the energy property. In November 2018, the developer incurs 5 percent of the total cost of Project H and thereafter maintains continuous efforts to advance towards the completion of

Project H. In April 2019, to finance the development of Project H, the developer sells 95 percent of the interests in LLC to a group of investors who are not related to the developer, and the developer does not contribute sales proceeds to LLC.

Under Rev. Rul. 99-5, 1999-1 C.B. 434, the developer is treated as selling 95 percent of each of the assets of LLC to the investors, and immediately thereafter the developer and investors are treated as contributing their respective 5 percent and 95 percent interests in those assets to LLC, which is now a partnership and the owner of Project H for federal tax purposes. In October 2019, LLC places Project H in service. Because Project H satisfies the Five Percent Safe Harbor in November 2018 and assuming Project H otherwise satisfies the requirements of the § 48 credit, the LLC is eligible to claim the § 48 credit with respect to Project H.

(2) Example. A taxpayer acquires an energy property (that consists of land and components of energy property) from an unrelated developer that had begun construction of the energy property, and thereafter the taxpayer completes the development of that energy property and places it in service. The work performed or the amounts paid or incurred by the unrelated developer prior to the taxpayer's acquisition of the energy property may be taken into account by the taxpayer for purposes of determining when the energy property satisfies the Physical Work Test or the Five Percent Safe Harbor.

.02 Relocation of Equipment by a Taxpayer. A taxpayer may begin construction of an energy property with the intent to develop the energy property at a certain site, and thereafter transfer components of property of the energy property to a different site,

complete its development, and place it in service. The work performed or the amounts paid or incurred prior to the site transfer by such a taxpayer may be taken into account for purposes of determining when the energy property satisfies the Physical Work Test or the Five Percent Safe Harbor.

.03 Transfers of Equipment Between Unrelated Parties. (1) In general. In the case of a transfer consisting solely of tangible personal property (including contractual rights to such property under a binding written contract) to a transferee not related (within the meaning of § 197(f)(9)(C) and Treas. Reg. § 1.197-2(h)(6)) to the transferor, any work performed or amounts paid or incurred by the transferor with respect to such transferred property will not be taken into account with respect to the transferee for purposes of the Physical Work Test or the Five Percent Safe Harbor.

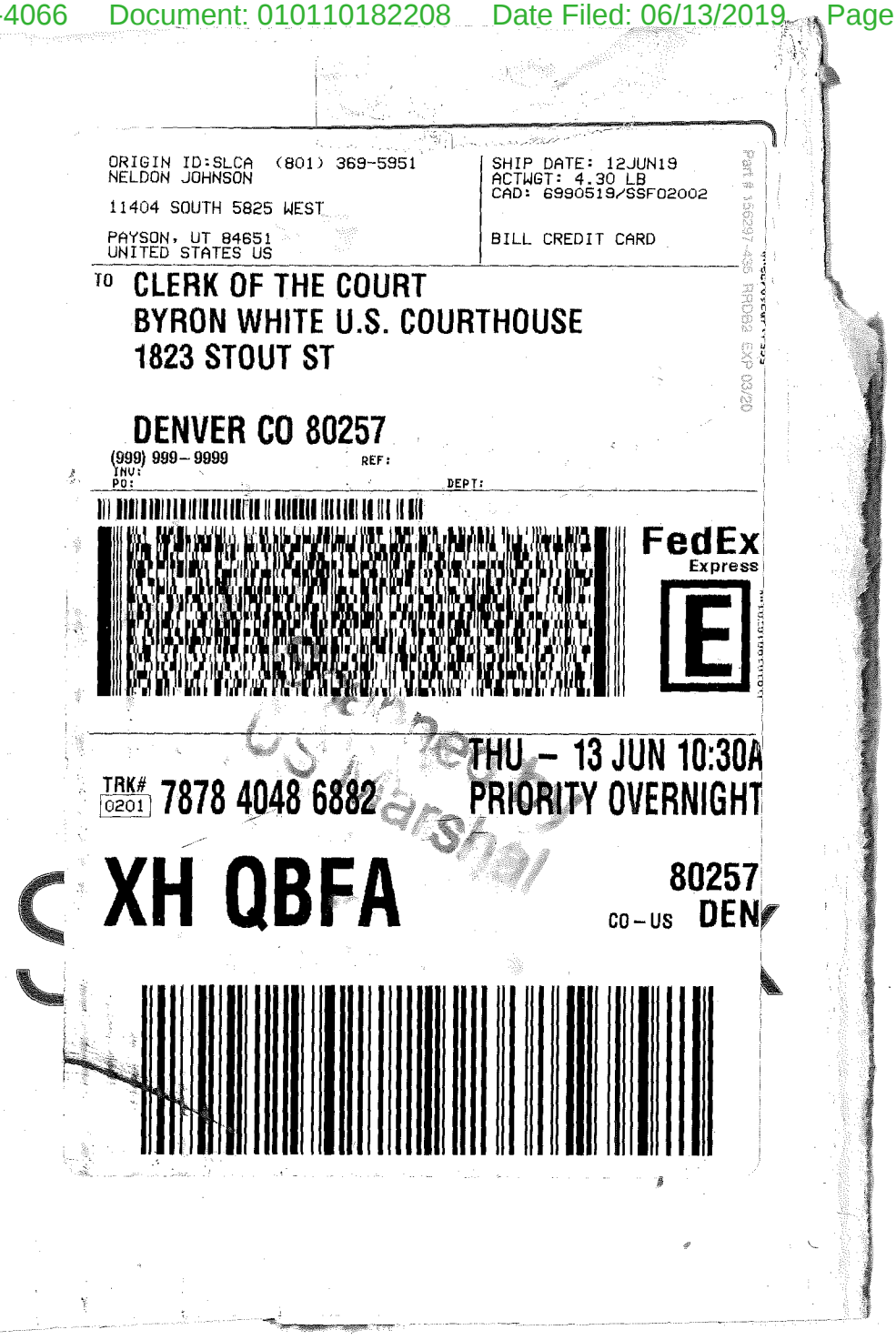
(2) Example. A developer, X, intends to develop and operate Project I at a location to be determined. In 2018, X pays or incurs $60,000 to have tangible personal property integral to Project I manufactured off-site pursuant to a binding written contract. Thereafter X incurs no further development costs and engages in no further development activity with respect to Project I. In January 2019, X sells the tangible personal property to another developer, Y, a party unrelated to X. Y is developing and intends to operate Project J, an energy property located on a parcel of land owned by Y. Y incorporates the tangible personal property acquired from X into Project J. In October 2019, Y places Project J in service on the parcel of land. The total cost of Project J is $1,000,000.

Amounts paid or incurred by X in 2018 for the tangible personal property cannot

be taken into account by Y for purposes of satisfying the Five Percent Safe Harbor with respect to Project J because X and Y are not related persons as described in section 8.03(1) of this notice. However, if without regard to these components of property, Y has otherwise satisfied the Physical Work Test or the Five Percent Safe Harbor with respect to Project J in 2018, Y will be considered to have begun construction in 2018.

SECTION 9. DRAFTING INFORMATION

The principal author of this notice is Jennifer C. Bernardini of the Office of Associate Chief Counsel (Passthroughs & Special Industries). For further information regarding this notice contact Ms. Bernardini on (202) 317-6853 (not a toll-free call).



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