PRIVATE TAXPAYER RULING LR20-002

February 7, 2020

Thank you for your letter dated September 17, 2019, requesting a private taxpayer ruling ("PTR") on behalf of your client, *** ("Taxpayer"). Specifically, you requested a ruling for a determination regarding what portion of income derived by Taxpayer from the construction of a solar power plant is deductible from its tax base. Pursuant to Arizona Revised Statutes ("A.R.S.") § 42-2101, the Department may issue private taxpayer rulings to taxpayers and potential taxpayers on request.

ISSUES:

To determine what portion of Taxpayer's gross proceeds of sales or gross income derived from the construction of a solar energy plant is deductible, the following issues must be examined:

1. Whether mounting and module system, the electrical collection system and the substation and generation interconnect ("Gen-tie") systems qualify as machinery and equipment used *directly* in producing and transmitting electrical power.
2. Whether the energy storage system ("ESS") qualifies as machinery and equipment *used directly* in producing or transmitting electrical power.
3. Whether the ESS is a component of a solar energy system as defined in A.R.S. § 42-5001(20) and thus exempt when sold by a registered solar energy retailer registered with the Department.
4. Whether the exempt machinery or equipment also have independent functional utility ("IFU") and qualify for the exemption under A.R.S. § 42-5075(B)(7).

RULING:

The Department Rules as follows:

1. The mounting and module system and electrical collection system constitute the solar electrical generation plant, as that is the part of the system that is essential for electrical power generation. A substation will be used to change the voltage of the electricity generated by the plant from lower to higher voltage. The Gen-tie system augments, integrates or ties together the sources of power supply for connection to the substation. As a result, all machinery and equipment used in the mounting,

module and collection systems, and the substation and Gen-tie qualify as machinery and equipment are used directly in producing electrical power.

2. The ESS does not produce electrical power, and is part of the power plant's configuration as a result of the requirements of an agreement between Taxpayer and a utility company. It does not qualify as a transmission system under A.A.C. R15-5-128(C) because it does not change the voltage of the power and it does not augment, integrate or tie together the sources of power supply. It stores electricity generated by the solar power plant so that it can be released to the grid at a later, scheduled time. Therefore, it does not qualify as machinery and equipment used directly in producing or transmitting electrical power.
3. Because the ESS is included as part of the solar photovoltaic plus storage ("PVS") power plant configuration in this case, it is considered part of the solar energy system as a result of statutory language that provides that a solar energy device may have the capability of storing electricity for future use.
4. Taxpayer may only deduct installation receipts from its tax base where those receipts relate to the installation of exempt machinery and equipment that also have IFU. This means the exempt machinery and equipment must be able to operate without attachment to real property or must be attached to real property in a nonpermanent manner. In this case, a common feature of the installation of the various systems is that they have to be stabilized on concrete pads, vaults or foundations that are of a permanent nature. The gross receipts or gross income derived from the installation of exempt machinery and equipment related to nonpermanent attachment or connection to such foundation, concrete pad or vault or other modifications are exempt. However, the gross receipts or gross income derived from the installation of the permanent concrete pad, vault or other modification work remains taxable. Moreover, because the ESS does not qualify as machinery and equipment used directly in producing and transmitting electrical power, it does not qualify as IFU and its installation, including the installation of the enclosures, are not exempt.

SUMMARY OF FACTS:

The following is a summary of the relevant facts based on your ruling request dated September 17, 2019, and subsequent correspondence with the Department dated October 23, 2019 and November 20, 2019:

Taxpayer will be the contractor responsible to construct a solar power plant for ***. Taxpayer is an affiliate of *** which wholly owns ***. The project, which is known as the *** ("Project"), requires the construction of a 65-megawatt alternating current photovoltaic solar ("PV") power plant with an integrated 50 megawatts of battery storage. The Project is based on a

contract ("Agreement") entered into between*** and *** ("Utility Company") on February 28, 2018. Construction will commence on May 15, 2020 with a projected completion date of April 15, 2021. The Project will be located outside of ***, Arizona in *** County, and is not within any incorporated Arizona city or town.

PV Power Plants

PV power plants are power plants that generate power by capturing sunlight through the use of solar panels, converting it into electricity, and delivering that electricity to the electrical utility transmission system or grid.

PV modules, which produce energy when exposed to sunlight, are grouped in rows to form PV arrays. Solar energy is initially collected as direct current ("DC"). PV inverters then convert the electricity generated from DC to alternating current ("AC"). Transformers increase the AC voltage to 34kV to increase the efficiency of AC collection to match the voltage of the transmission system. The PV plant can then deliver electricity directly to the grid through the project's substation.

A PV plant may also include battery storage capability through an energy storage system ("ESS"), allowing temporary diversion of the electricity to the ESS, for later delivery to the grid. This allows energy that the plant would otherwise be unable to deliver to the grid at a given time due to equipment limitations or interconnection agreement limits, to be stored and delivered when possible, rather than lost. The ESS allows the plant to provide firm, on demand energy supply (as opposed to only when the sun is shining). Without an ESS, a PV plant cannot provide power output after sundown. The PV power plant controller ("PPC") continuously controls both the PV inverters and the ESS inverters and instructs the plant when and how much electricity to deliver to the grid.

An ESS can be a standalone system, but in such cases, it stores energy obtained from whatever power source is available (e.g. nuclear, wind etc.) to supply the system, and this stored energy is used to supply the grid. A standalone ESS that is not an integrated component of a generation system will be charged with a mix of the generation on the broader grid system. In Arizona, this often will include a mix of electrical generation from natural gas, coal, nuclear, and renewables.

The Project and Power Purchase Agreement

The Project will be a PV *plus* storage power plant ("PVS power plant") meaning that the PV plant includes battery storage capabilities to regulate both the supply of energy that is

released into the grid and the timing of that delivery. It will have a substation that will step-up the voltage from 34.5kV to the 500kV required for interconnection and transmission. A short Gen-tie will interconnect the Project substation with an existing substation approximately one mile away. Transfer of ownership of the electricity will occur at the substation in accordance with the Agreement.

The Agreement was developed under a specific Utility Company resource solicitation, which required that the plant be capable of reliably delivering energy at certain periods of the year and hours of the day, including after sundown. A PVS system with no ESS would not be able to satisfy this requirement given the intermittency of the solar resource. Therefore, the Project was designed to include the ESS to deliver the energy during the requested delivery times.

The Agreement defines the amount of power to be delivered at a particular point in time, and the timing of its delivery to the grid. The PPC determines how to best use the plant to deliver power as required by Agreement, either directly from the PV or by way of the ESS.[1] The interconnection meter measures the amount of power released to the grid.

Detailed Project Component Description

The Project will have the following components:

- Site preparation prior to installation of the PVS power plant.
- Mounting system and module installation:
    - Solar modules are mounted on a tracker system that rotates the PV modules towards the sun. The tracker system requires steel posts to be driven into the ground. The exact depth depends on the topography of the land. If the site does not support driven posts, an embedded foundation, consisting of concrete piers 18 to 24 inches in diameter will be used to support the posts. A bearing or torque tube is attached to the post and operates as the single axis for rotation of the PV modules. An actuator and small motor assembly are also mounted on the post to drive the movement of the PV module. Typically, steel table frames are bolted to the tilt bracket or torque tube, and then the PV modules are mechanically fastened to the table frames. Alternatively, the PV modules may include a frame that can be directly fastened to the mounting system.

[1] For example, the PPC will send a signal to the ESS inverter to charge the ESS with the power generated from the solar arrays during hours that the power is not needed by the utility and later will send a signal to the ESS inverter to discharge the ESS during hours when the power is needed.

- Electrical collection system installation:
    - The DC collection system which includes combiner boxes, converters and other small equipment may be mounted on posts, concrete pads or vaults. Larger converters may be installed on concrete foundations or vaults.
    - The AC collection system may include conductors installed either overhead or underground. Switchgear, sectionalizing cabinets or combiner boxes are installed on concrete foundations or vaults. Overhead collection systems are usually mounted on wood poles driven into the ground, but steel poles or concrete foundations may be used where needed.
        - For both the AC and DC collection systems, conduit may be installed with cabling for protection. Cabling may be buried underground and if cabling transitions overhead, this is usually done via a riser pole embedded in the ground or on a concrete foundation.
    - PV equipment, including inverters, transformers, and monitoring equipment may be integrated throughout the site. DC feeders are run into the vault for connection to the inverter, and the AC feeders exit the transformer to the AC collection system.
    - Power Conversion Station ("PCS") equipment which includes inverters, transformers and monitoring equipment is typically installed on a pre-cast concrete vault.
    - Meteorological stations are installed either on posts or on towers which have concrete foundations.
    - Fiber optic communications lines are also installed with the collection system to connect the meteorological stations and PV equipment to the PPC.
- Substation installation:
    - Includes high voltage transformers to "step up" voltages and also includes inverters, circuit breakers filled with sulfur hexafluoride (SF6) gas, buswork connections, and capacitor banks, among other equipment.
    - PPC equipment is typically installed in temperature-controlled enclosures near the substation. PPC communication lines connect the PVS plant to the grid operator, the utility, the meteorological monitoring equipment and other equipment.
- Gen-tie installation:
    - Construction of a one mile, single circuit 500kV Gen-tie (transmission line) to connect the plant's substation to the existing substation. The Gen-tie will require engineered support structures.
- ESS Installation:

- Includes enclosures around battery racks, batteries, and associated equipment to protect the batteries from the environment and regulate operating temperature.
- Enclosures may be a dedicated building, containerized enclosures or modular systems.

DISCUSSION AND LEGAL ANALYSIS:

A.R.S. § 42-5075 imposes TPT on “the business of prime contracting.” The tax base for the prime contracting classification is sixty-five percent of a prime contractor's gross receipts derived from the business. See A.R.S. § 42-5075(B). The tax base for TPT generally includes gross income without any deductions for any business expense unless specifically so provided by statute.

The term “contracting” means “engaging in business as a contractor.” A.R.S. § 42 5075(R)(3) provides that a “contractor" is synonymous with the term "builder" and means any person or organization that undertakes to or offers to undertake to, or purports to have the capacity to undertake to, or submits a bid to, or does personally or by or through others, modify any building. Under A.R.S. § 42-5075(R)(6) "modification" means construction, grading and leveling ground, wreckage or demolition. Under A.R.S. § 42-5075(R)(7), "modify" means to make a modification or cause a modification to be made. In general, modification is considered ground up construction work.

A.R.S. § 42-5075(B), which details deductions from the prime contracting base, allows the income attributable to the purchase of certain tangible personal property purchased in connection with prime contracting projects, and in some cases, *income* from certain contracting projects, to be deducted from the prime contracting tax base.

A.R.S. § 42-5075(B)(8)(b) provides a deduction from the tax base for the gross income or gross proceeds attributable to the purchase of certain machinery, equipment or other property that is exempt from the retail tax base[2] under A.R.S. § 42-5061(B).

A.R.S. § 42-5061(B)(4) provides a deduction for machinery, equipment or transmission lines used directly in producing or transmitting electrical power, but *not* distribution. Arizona

[2] A.R.S. § 42 5061 imposes the TPT on the business of selling tangible personal property at retail. "Selling at retail" is defined by A.R.S. § 42 5061(V)(4) as a sale for any purpose other than for resale in the regular course of business. The tax base is the gross proceeds of sales or gross income derived from the business.

Administrative Code ("A.A.C.") R15-5-128 provides that the machinery and equipment used to generate electricity may be considered part of a transmission or distribution system.

A.R.S. § 42-5061(M) provides a deduction for the sale of solar energy devices sold by a solar energy retailer registered with the Department.

Whether Taxpayer will be entitled to any deduction from its tax base will depend primarily on whether any of the machinery and equipment comprising the systems described above are used directly in producing or transmitting electrical power. If the machinery and equipment are used directly in producing or transmitting electrical power, then Taxpayer may purchase such machinery tax exempt under A.R.S. § 42-5061(B)(4) and may deduct from its tax base the income attributable to the purchase of such machinery and equipment under A.R.S. § 42-5075(B)(8)(b). Additionally, Taxpayer's gross proceeds of sale or gross income derived from the installation of those systems may be deductible under A.R.S. § 42-5075(B)(7) if those systems are exempt *and* in fact, have IFU.

1. Whether the mounting and module system, the electrical collection system and the substation and gen-tie systems qualify as machinery and equipment used directly in producing or transmitting electrical power.

Neither the statute nor A.A.C. R15-5-128 provides any details about what is considered an electrical production system. Also, no specific definition is provided in the statute or rules for what is meant by "producing." The dictionary meaning of "producing" means "to cause to have existence or to happen, to make, to bring about, to give being, form, or shape to."[3] Additionally with respect to electricity, the International Labor Organization's ("ILO") Encyclopedia provides:

> Most electricity is generated at 13,200 to 24,000 volts [13.2kV to 24kV]….
>
> When electricity comes out of a generating station, the transmission substation… "steps up" the voltages to the range of 138,000 – 765,000 volts [138kV to 765kV]…
>
> The distribution system connects the transmission system to the customer's equipment… The distribution substation reduces the transmitted electrical voltage to 2,400 – 19,920 volts [2.4kV to 19.92 kV]…[4]

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[3] "Produce." Merriam-Webster.com. Merriam-Webster, Jan. 16, 2020.

[4] See https://iloencyclopaedia.org/part-xi-36283/power-generation-and-distribution/item/616-electric-power-generation-transmission-and-distribution-safety-a-us-example .

Similarly, on the US Department of Labor's Occupational Safety and Health Administration ("OSHA") website the following information can be found:[5]

- Transmission system voltages are typically from 69kV up to 765kV.
- Distribution systems typically operate in a voltage range of 4kV to 46kV. However, distribution also includes secondary voltage systems, which operate at less than 1,000V (1kV), that typically connect to electric customers' homes and offices.

Thus, generally, transmission of electrical power takes place at higher voltages and the distribution of electrical power takes place at lower voltages. Systems that generate up to 34,500 volts (34.5kV) are considered part of a distribution system,[6] and systems that generate more than 34,500 volts (34.5kV) may be either a distribution or transmission system depending on the use of machinery and equipment.[7,8] There might be some overlap between transmission and distribution voltages as may be seen above, but such an overlap is seen in a small range. For example, the ILO describes distribution ranges from 2.4 kV to 19.92 kV and OSHA describes distribution as taking place from 4kV to 46 kV and transmission from 69kV up to 765kV.

A.A.C. R15-5-128(C)(1) provides that a "transmission system" comprises:

a. All land, conversion structures, and equipment employed at a primary source of supply[9] *to change the voltage or frequency of electricity* for the purpose of its more efficient or convenient transmission;
b. All land, structures, lines, switching and conversion stations, high tension apparatus and their control and protective equipment *between a generating or receiving point and the entrance to a distribution center or wholesale point*; and
c. All lines and equipment whose primary purpose is to augment, integrate, or tie together the sources of power supply.

A.A.C. R15-5-128(C)(2) provides that a "distribution system" means all land, structures, conversion equipment, lines, line transformers, and other facilities employed *between the primary source of supply and of delivery to customers*, which are not includible in a transmission system whether or not such land, structures, and facilities are operated as part of a transmission system or as part of a distribution system. It also provides that stations

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[5] https://www.osha.gov/SLTC/etools/electric_power/transmission_dist.html.
[6] See A.A.C. R15-5-128(B).
[7] See A.A.C. R15-5-128(C).
[8] There are generally three stages in the production of electrical power[8]: production or generation, transmission and distribution. See, for example https://www.eia.gov/Energyexplained/index.cfm?page=electricity_delivery; also see Private Taxpayer Ruling ("PTR") LR12-001.
[9] A.A.C. R15-5-128(C)(3) provides that "primary source of supply" means a generating station or point of receipt in the case of purchased power.

which change electricity from transmission to distribution voltage[10] shall be classified as distribution stations.

Because A.R.S. § 42-5061(B)(4) elects to provide a deduction for producing or transmitting electrical power, but *not* for distributing electrical power, the Department must give meaning to this distinction and therefore has determined that the deduction under A.R.S. § 42-5061(B)(4) relates only to higher levels of electrical power *generated* (i.e. commercial generation of electrical power) for transmission and not electrical power generated for distribution or other purposes. This interpretation is supported by A.A.C. R15-5-128 which presumptively classifies machinery and equipment used to facilitate the *production* of voltages *up to* 34.5kV as part of a distribution system and those used to facilitate the *production* of *more than* 34.5kV as part of a distribution or transmission system depending on how the machinery and equipment are used.

In this case, the mounting and module system and DC and AC electrical collection system as described above constitute the solar electrical generation plant as that is the part of the system that is essential for electrical power generation. The PV modules which are mounted on the mounting system generates electricity when exposed to sunlight and the DC and AC collection system collects all the electrical power generated and converts it from DC to AC current as required. Those systems together generate electricity.

The substation itself does not generate any electricity and so is not part of an electrical production system. Rather, it "steps up" the voltage from lower generation voltage (34kV) to higher, interconnection voltage (500kV). The Gen-tie system comprises of tie lines that deliver energy from the substation to the grid at the point of interconnection. The gen-tie lines run the transmission lines from the substation to other off-site substations.

As a result, all machinery and equipment comprising the mounting, module and collection systems as well as the substation and gen-tie systems constitute machinery and equipment used directly in producing or transmitting electrical power. Pursuant to A.R.S. § 42-5061(B)(4), Taxpayer may purchase such machinery and equipment tax exempt. In addition, pursuant to A.R.S. § 42-5075(B)(8)(b), Taxpayer may deduct from its tax base the income it receives attributable to the purchase of such exempt machinery and equipment.

2. Whether the ESS qualifies as machinery and equipment *used directly* in producing or transmitting electrical power.

The Agreement with the Utility Company requires power delivery to serve peaking capacity during and outside of solar generating hours (e.g. late afternoon and evening). As a result, the Project was designed to utilize the ESS to meet battery storage capacity and power delivery pursuant to the terms of the Agreement.

[10] i.e. steps down the voltage from 34.5kV to between 4kV to 24kV for distributing to customers.

All electricity generated or created by the PVS plant will be generated using the PV arrays. The ESS does not generate or create additional electricity. Power can be released directly to the grid from the PV arrays or released indirectly to the grid after being stored in the ESS. The PPC controls the amount and timing of the power delivered directly from the PV arrays or indirectly from the ESS. The PPC is programmed to follow the delivery timing requirements in the Agreement.

Taxpayer cites the cases of *State ex rel. Arizona Department of Revenue v. Capitol Castings, Inc*.[11], and *Duval Sierrita Corp. v. Arizona Department of Revenue,*[12] for the proposition that the ESS is used directly in the production and transmission of electrical power. Those cases use the integrated test and the ultimate function test to determine whether items constitute machinery and equipment used directly in the manufacturing process. Although process under consideration is not a manufacturing process, the concepts in those cases are applicable here.

Under the ultimate function test, one should examine how the item functions in the industrial process at issue to see whether the item qualifies for the … exemption. This "approach allow[s] some items that would not ordinarily be considered 'machinery' or 'equipment' to qualify for the exemption if they function as a necessary part of an integrated process."[13] The integrated test addresses how the item is used in the industrial process and considers its necessity to the process.[14] The integrated approach exempts only those items that are "essential to [the] operation and which make it an integrated system."[15]

More specifically, the tests analyze items in the following manner:

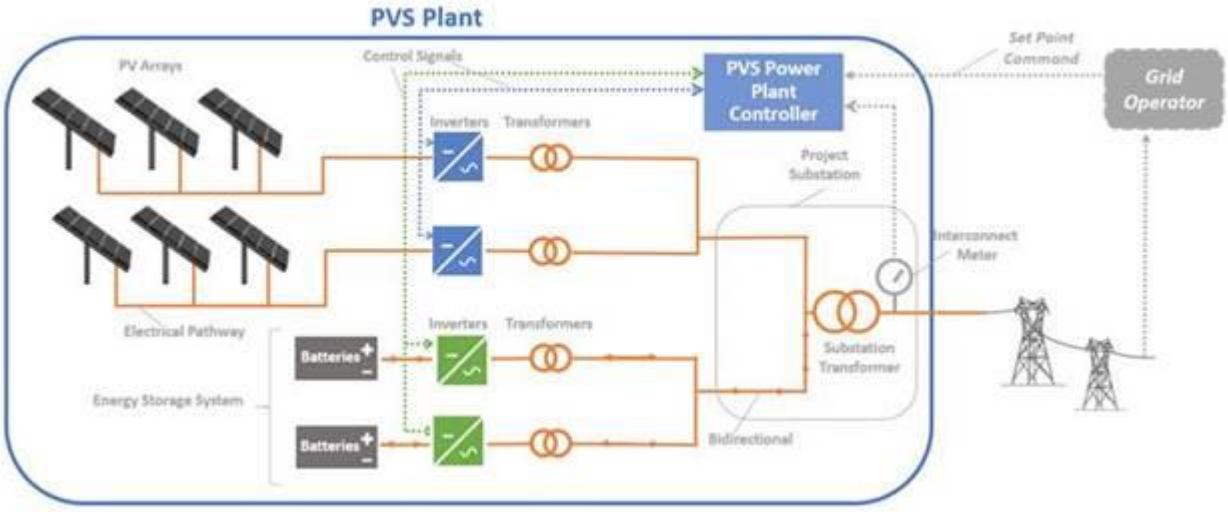
> First, a court must apply flexible and commonly used definitions of machinery and equipment within the relevant industry …
>
> Next, bearing in mind these flexible definitions, a court should examine the nature of the item and its role in the operations. Items essential or necessary to the completion of the finished product are more likely to be exempt. …The prominence of an item's role in maintaining a harmonious "integrated synchronized system" with the indisputably exempt items will also directly correlate with the likelihood that the exemption applies…. The closer the nexus between the item at issue and the process of converting raw materials into finished products, the more likely the item will be exempt. As part of its analysis, the court should consider whether the item physically touches the raw materials or work in process, whether the item manipulates or affects the raw materials or work in process, or whether the item adds value to the raw

[11] 88 P.3d 159, 207 Ariz. 445 (2004).
[12] 116 Ariz. 200, 568 P.2d 1098 (1977).
[13] *Id*., 88 P.3d 159, 164, 207 Ariz. 445, 450.
[14] *Id.*
[15] *Id.*

materials or work in process as opposed to simply reducing costs or relating to post-production activities.[16]

As noted, the ESS does not generate or create any additional electricity, it stores the electricity for later distribution on to the grid. The ESS is a necessity in this particular instance only as a result of the Agreement between the parties. The storage capacity of the ESS is also based on the Agreement between the parties. The analysis of whether an item is essential to a process should not be determined based on the parties' contractual arrangements. Doing so would make irrelevant whether an item was actually used directly in a process, the contractual terms would always necessitate the items in question. Rather, whether an item is used directly in a process should be based on the normal functioning of the process in question without regard to contractual considerations.

As described, the PVS plant can and will create and transmit electricity to the grid without having to pass through the ESS first or at all. Electricity is diverted to the ESS when the PVS plant produces more electricity than is required to be distributed to the grid based on the Agreement between the parties. So even within the operation of the Project, not all electricity will move through the ESS, only that portion representative of excess electrical power based on the Agreement will. Electricity that is delivered directly to the grid never comes into contact with the ESS and has no interaction with the ESS whatsoever.



This can be seen clearly in relation to the above PVS Plant chart. Electricity delivered directly to the grid moves from the PV arrays through the inverters and transformer, and then through the substation to the interconnect meter and finally to the grid without ever going through the bidirectional lines to the ESS. Only excess power generated that cannot be immediately be transmitted to the grid (based on the Agreement) is diverted from the substation and goes through a different route through bidirectional lines to the ESS. Thus, the process can function completely without the use of the ESS. The ESS and its storage capacity are only

[16] *Id.*, 88 P.3d 159, 164-5, 207 Ariz. 445, 450-1.

necessary as a result of the requirements of the parties' Agreement that electricity be transmitted to the grid within certain limits and times.

While efficiencies are created through the use of the ESS, the process of producing and transmitting electrical power does not require an ESS and the ESS is not used to generate or transmit electricity. Moreover, the efficiencies created are exactly the type of activity that the integrated test specifies would *not* qualify the item as an essential element of a process. The use of the ESS is more aptly categorized as a post-production activity, not necessary for the production or transmission of electricity. Therefore, the ESS does not qualify as machinery and equipment used directly in electricity generation or transmission. Furthermore, the ESS does not qualify as a transmission system under A.A.C. R15-5-128(C) because it does not change the voltage of the power and it does not augment, integrate or tie together the sources of power supply.

Finally, as will be discussed in the next section, the definition of a solar energy device also indicates that battery storage is not an essential element of a solar energy system. The definition provides that a solar energy system *may* include the capability of storing solar energy for future use. As a corollary therefore, a solar energy system *need not* have the capability to store energy. Thus, even though the ESS could qualify as part of a solar energy system, it is not an essential part of producing or transmitting electrical power.

Because the ESS is not machinery and equipment used directly in producing or transmitting electrical power, the ESS enclosures are likewise not considered machinery and equipment used directly in producing or transmitting electrical power.

3. Whether the ESS is a component of a solar energy device.

A.R.S. § 42-5061(M) provides a deduction from the retail tax base for amounts received from sales of solar energy devices from a solar retailer registered with the Department. A.R.S. § 42-5001(20) defines a solar energy device as "a system or series of mechanisms that are designed primarily to provide heating, to provide cooling, to produce electrical power, to produce mechanical power, to provide solar daylighting or to provide any combination of the foregoing by means of collecting and transferring solar generated energy into such uses either by active or passive means, including wind generator systems that produce electricity." Further, that section provides "[s]olar energy systems may also have the capability of storing solar energy for future use."[17]

The mounting and module system and the electrical collection system as well as the substation and the gen-tie system are an essential part of the electrical generation and transmission system in a solar power plant and are therefore considered part of a solar energy device system. As noted earlier, the fact that the statutory definition of a solar energy device specifically notes that the system ***may*** include the capability of storing solar energy for later use indicates that though storage need not be an essential part of the system, it may

[17] See A.R.S. § 42-5001(20).

nevertheless be included as part of a solar energy device's configuration. Because the ESS is included as part of the PVS power plant configuration in this case, it is considered part of the solar energy system as a result of the statutory language even though it is not an essential part of the electricity generation or transmission system.

4. Whether exempt systems also have IFU so that the receipts from installation of those systems are exempt under A.R.S. § 42-5075(B)(7).

A.R.S. § 42-5075(B)(7)(a) provides a broad deduction from the contracting tax base for the gross income or gross proceeds of sale for income derived from a contract for the installation, assembly, repair or maintenance of machinery, equipment or other tangible personal property that is deducted from the tax base under A.R.S. § 42-5061(B) *and* that has IFU. The deduction includes gross income from:

(i) Any activity performed on exempt machinery, equipment or other tangible personal property with IFU.

(ii) Any activity performed on any tangible personal property relating to exempt machinery, equipment or other tangible personal property with IFU in furtherance of assembling, connecting or stabilizing it.

(iii) Any activity that is related to the activities described in items (i) and (ii) above, including inspecting the installation of or testing the machinery, equipment or other tangible personal property.

IFU is defined under A.R.S. § 42-5075(B)(7)(d) as "machinery, equipment or other tangible personal property that can independently perform its function *without* attachment to real property." However, it does not preclude attachment for the purposes of assembling, connecting to other tangible personal property or connecting to part of a system, or for stabilizing purposes."[18] A.R.S. § 42-5075(B)(7)(d) also limits the type of attachments for stabilizing purposes specifically to *nonpermanent* attachments.[19] A.R.S. § 42-5075(B)(7)(b) provides that the deduction *does not include* the gross proceeds of sale or gross income from the portion of any contracting activity that consists of the development of, or modification to, real property in order to facilitate the installation, assembly, repair, maintenance or removal of the exempt machinery or equipment.

As discussed above, the following systems are exempt under A.R.S. § 42-5061(B)(4) and are consequently also exempt under A.R.S. § 42-5075(B)(8)(b) because the machinery and equipment used in those systems are used directly in producing or transmitting electrical power:

[18] *Id.*
[19] See A.R.S. § 42-5075(B)(7)(d).

- Mounting system and module systems (generation);
- Electrical collection system (generation);
- Substation and Gen-tie systems (transmission).

In this case, the PV modules produce energy when exposed to sunlight, the AC and DC collection systems collect that energy and converts it. The substation uses transformers to 'step-up' the energy from generating levels to transmission levels, and the Gen-tie system delivers electricity from the substation to the grid at the Point of Interconnection. Accordingly, those systems appear to be able to perform their functions independently; however, they must be attached to the real property. The type of attachment to be utilized depends on the size of the machinery and equipment and the ground conditions.

A common feature of the installation of the systems is that they have to be stabilized on concrete pads, vaults or foundations. Constructing concrete foundations or concrete pads as a means of attaching equipment is generally considered contracting activity of a permanent nature. Such construction activity is taxable under the terms of A.R.S. § 42-5075(B)(7)(b). However, the connection or attachment that secures or stabilizes the exempt machinery and equipment to those concrete slabs or vaults will be exempt in cases where the connection or attachment to the concrete slab or vault is nonpermanent.

Based on the above considerations, Taxpayer's income derived from the installation of the following systems are not exempt:

- The portion of income derived from the installation of the module and mounting system attributable to the construction of concrete foundations. However, where posts are only driven into the ground, the portion of the contract attributable to income derived from the installation of the mounting and module system would be deductible from the tax base.
- The portion of income derived from the installation of the collection system attributable to the construction of concrete pads or vaults. Income attributable to nonpermanent connections or attachment between the collection system and the concrete foundations or pads are exempt.
- The portion of income derived from the installation of concrete foundations for the substations. If no concrete foundations or other modification-type activity takes place or if nonpermanent connections are made between the concrete foundation and the substation, the portion of the contract attributable to income derived from the substation installation or the portion related to the nonpermanent attachment is deductible from the tax base.

- The portion of income derived from the installation of concrete foundations for the gen-tie system attributable to engineered support or other modification-type structures. If no concrete foundations or other modification-type activity takes place, or if nonpermanent connections are made between the concrete foundation and the gen-tie system, the portion of the contract attributable to income derived from the gen-tie installation or the portion related to the nonpermanent attachment is deductible from the tax base.
- The portion of income derived from the installation of the ESS and its enclosures.

This response is a private taxpayer ruling and the determinations herein are based solely on the facts provided in your request. Therefore, the conclusions in this private taxpayer ruling do not extend beyond the facts presented in your correspondence. The determinations are subject to change should the facts prove to be different on audit. If it is determined that undisclosed facts were substantial or material to the department's making of an accurate determination, this private taxpayer ruling shall be null and void. Further, the determination is subject to future change depending on changes in statutes, administrative rules, case law or notification of a different department position.

The determinations in this private taxpayer ruling are only applicable to the taxpayer requesting the ruling and may not be relied upon, cited nor introduced into evidence in any proceeding by a taxpayer other than the taxpayer who has received the private taxpayer ruling. In addition, this private taxpayer ruling only applies to transactions that occur or tax liabilities that accrue from and after the date the taxpayer receives the ruling.