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Ag Tech Poses Difficult State Tax Questions

The agricultural sector is facing radical changes from the deployment of networked digital technology and artificial intelligence designed to enhance operational efficiencies and, in some instances, respond to conservation mandates. Expectations are high for enhanced yields and increased efficiency. These innovative technologies, however, were not in mind when often decades-old tax provisions were enacted. Sales tax exemptions and qualification for certain conservation credits are particularly relevant in making deployment of high-priced new technologies commercially viable. The questions of qualification for tax exemptions and credits turn on the precise language of statutes and regulations and there may be significant ambiguity as applied to new systems.

The Internet-of-things hits the farm. "Ag tech" is something of a catchall term for companies bringing new technologies to agriculture.[1] In this article, we focus on the deployment of networked digital technology to farms. The new products and services can help farmers monitor field conditions, automate certain processes, and identify strategies to maximize yield and conserve resources. For example, a farmer could have an irrigation automation system where field sensors monitor soil moisture and flood-water level, that information will then be communicated to a central computing system and, if certain pre-selected triggers are hit, the system will turn on or off the irrigation system to apply just the right amount of water for the crops. Or a farmer could have mobile equipment precision-dispensing herbicides on weeds based on an artificial intelligence capable of distinguishing crops from weeds based on imaging.

In general, these kinds of systems will have some or all of the following elements:

- *Hardware and software.* Computers somewhere are taking the raw data and converting it into usable reports and analytics for farmers to view. They may also be able to remotely control certain equipment. Such computing may occur on local computers at the farm, in the cloud, or a combination of both.
- *Network equipment and telecommunications.* Farms are big, and current WiFi technology is unlikely to be sufficient. Systems often will have their own local cellular networks or radio modules with connecting antennas and towers. Public cellular data service may also be used where signal strength and data cost make sense.
- *Monitoring sensors.* Sensors deployed on the farm monitor and report on a variety of factors including soil conditions, water levels, weather, pump dynamics, and even the health and growth of crops and livestock.
- *Remote-controlled equipment.* Some equipment can be remotely controlled (and potentially operated) to do work on the farm, such as turning irrigation pumps on or off, opening flood gates, or spraying chemicals. This can include drones or other remote-controlled or robotic-mobile equipment.

In essence, these types of systems are examples of the deployment of the Internet of Things (IoT) in an agricultural context.

Sales tax systems did not anticipate ag tech. States' sales tax systems were designed for an agricultural world of tractors and combines well before the introduction of computer- and Internet-based technologies. Most states have some sort of agricultural equipment exemption for farmers' purchases of equipment from sales tax. Louisiana, for example, has an exclusion from state sales tax for purchases of farm equipment for production of food or fiber of up to $50,000 (any excess price is taxable).[2] Or California has a partial (state-level only) exemption for farm equipment and machinery used primarily in producing and harvesting agricultural products.[3]

In many instances, these equipment exemptions will have a requirement that the equipment purchased be "used directly" in agriculture. Mississippi, for example, has a partial exemption for implements "used directly in the production" of crops and livestock.[4] For these purposes, a farm implement is a "complete unit that performs a specialized mechanical function and is identifiable as a specific piece of equipment that is ordinarily and customarily used on a farm."[5] The Louisiana exemption has a "used directly" concept requiring that the equipment "must have an immediate effect upon the production, processing, or storing of food, fiber, or timber."[6] Indiana, likewise, allows its farm equipment exemption only if the equipment is for "direct use in the direct produc-

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tion, extraction, harvesting, or processing of agricultural commodities."[7]

Such direct use requirements raise the question of whether the entirety of the purchase of an ag tech system can qualify for the exemption. Automated or remote-controlled equipment that is acting directly on a farm certainly would seem to qualify but the rest of the system raises significant questions: Back-office hardware and software may be necessary for operation of a system but are not themselves doing physical work on the farm, as is the case for wireless communication systems. Field sensors that merely monitor and report on conditions also are not themselves doing physical work on the farm.

The critical argument in seeking exemptions for these kinds of supporting equipment is that what is being sold is a single, integral system that requires these supporting elements in order to function, or at least in order to function most effectively. One state, California, has clear regulatory language that "[f]arm equipment and machinery also includes any equipment or device used or required to operate, control, or regulate machinery not limited to computers, data processing equipment, and computer software, including both operating programs and application programs."[8] Most states, however, do not have such clear authority. Arguments about the supporting equipment being necessary for the system to function generally can and should be made in other states. For example, Arkansas recently issued a letter opinion allowing the farm equipment exemption for the entirety of a smart irrigation system, treating all of the components as being "used directly."[9]

The often modular nature of ag tech systems can make arguments about exempting supporting equipment more difficult. No two farms are alike, and different farms will have different equipment needs depending on size, geography and layout. That fundamental fact lends itself to modular, itemized pricing, including add-on purchases to expand the original system set up, rather than all-inclusive, single bundled charges. Such pricing may encourage auditors to try to carve out the supporting equipment and limit the farming equipment exemption to solely that equipment doing physical work on the farm.

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There may also be fixture issues for ag tech systems. Some states limit their exemptions to tangible personal property and equipment that becomes part of the realty cannot qualify. Depending on the equip-

1 *See generally* "The Ag Tech Market Map: 100+ Start-ups Powering the Future of Farming and Agribusiness," CB Insights Research Brief (May 18, 2017), *available at* https://www.cbinsights.com/research/agriculture-tech-market-map-company-list/.

2 La. Rev. Stat. Ann. § 47:305.25.A.

3 Cal. Rev. & Tax Code § 6356.5; Cal. Code Regs. tit. 18, § 1533.1.

4 Miss. Code Ann. § 27-65-17(1)(c)(i).

5 Miss. State Tax Comm'n. Notice 72-09-006, "Notice to Farmers and Dealers of Farm Tractors and Farm Implements" (Sept. 24, 2009).

6 La. Admin. Code tit. 61, § 4301 (paragraph h.ii(b) of the definition of "cost price").

ment involved, this could be an issue for ag tech systems, particularly where equipment attaches to real property but later may be removed and relocated on the farm.

In addition to questions about initial equipment sales, ag tech systems often involve recurring charges for cloud-based analytics or supporting services or telecommunications services. The taxability of such charges will vary from state-to-state and may at times be unclear. Such issues, however, generally will not be agriculture-specific but rather will depend on the state's overall tax regime.

Conservation incentives vary substantially but can provide significant benefits. Besides sales tax, another important state tax issue for ag tech is potential eligibility for conservation incentives. Many states have programs in place to support conservation of soil, water, and other natural resources. Virginia, for example, has an agricultural best management practices ("BMP") income tax credit of 25% of the first eligible $70,000 expended on practices that will reduce runoff pollution.[10] It also offers income tax credits calculated at 25% of the purchase price on conservation tillage equipment and precision pesticide and fertilizer application equipment.[11] Arizona has an income tax credit of 75% of the cost of purchase and installation of agricultural water conservation systems when consistent with a filed conservation plan.[12] Pennsylvania has its resource enhancement and protection ("REAP") credits of up to $150,000 for 50% or 75% of a project's cost if the project is pursuant to a conservation plan.[13]

Such credits are generally governed by state or local agricultural conservation agencies that have to certify eligibility. Clearly they have more farming expertise than state revenue agencies, and typically the conservation agencies are enthused about the benefits that the new technologies will bring. The specific drafting of state conservation credit provisions is extremely variable, however. This may lead to frustration between farmers and agencies that both want to see such technology implemented, but are hindered by outdated statutory language that does not contain the language necessary to include such technological advancements. While flexible credit provisions for implementing conservation plans that include ag tech systems may often be feasible, eligibility for more specific conservation credits will depend on the specific credit provision's language and the characteristics of the ag tech system at issue.

Policy considerations often support favorable guidance. While the application of the tax code to new ag tech systems is often ambiguous, state departments of revenue and conservation agencies may be receptive to guidance efforts. Farmers often have influential friends in the state policy world, and allowing exemptions for ag tech systems is generally consistent with the policy principles of not taxing farming business inputs and of supporting conservation. Where startup budgets allow, businesses should consider seeking rulings or other guidance to clarify the tax treatment instead of facing surprises—or having customer farmers face surprises—on audit.■

[7] Ind. Code § 6-2.5-5-2(a).

[8] Cal. Code Regs. tit. 15, § 1533.1(b)(1)(A).

[9] Ark. Dep't Fin. & Admin., Opinion no. 20170903 (Oct. 19, 2017).

[10] *See* Va. Code Ann. § 58.1-439.5.

[11] Va. Code Ann. § § 58.1-432, 58.1-436.

[12] Ariz. Rev. Stat. § 43-1084.

[13] 72 Penn. Stat. Ann. § § 8703-E, 8704-E.