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Report to the 88th Legislature on Feasibility of Requiring All Components of Voting Systems Used in Texas Elections to be Manufactured, Stored, and Held in the United States

Pursuant to Senate Bill 1387, 87th Legislature, R.S., the Office of the Texas Secretary of State (SOS) has prepared the following report on the feasibility of requiring each voting system used in an election in this state to have all components of the voting system, including all software and hardware, manufactured, stored, and held in the United States.

Background

Under Section 2 of Senate Bill 1387, 87th Legislature, R.S. (SB 1387), the SOS was directed to conduct a comprehensive study to determine the feasibility of requiring each voting system used in an election in this state to have all components of the voting system, including all software and hardware, manufactured, stored, and held in the United States.

Section 1 of SB 1387 requires a voting system used in Texas to be manufactured, stored, and held in the United States and sold by a company whose headquarters are located in the United States and whose parent company's headquarters, if applicable, are located in the United States. For purposes of complying with this requirement, a voting system or voting system equipment is considered to be manufactured in the United States if: (1) final assembly of the voting system or voting system equipment occurs in the United States; and (2) all firmware and software are installed and tested in the United States.

All currently-certified voting systems meet the requirements outlined in Section 1 of SB 1387, as final assembly of the voting system equipment occurs in the United States and all firmware and software is installed in the United States.

The purpose of this study is to determine the feasibility of requiring the individual component parts of those systems to be manufactured in the United States.

Methodology

In conducting this study, the SOS reached out to multiple voting system vendors, including vendors who have systems that are currently certified in Texas and those whose systems are not currently certified in Texas. Our office conducted a phone survey of those vendors to discuss the components that are currently sourced in the United States, and the limitations that prevent those vendors from obtaining other components from sources located in the United States.

Our office also reviewed studies and publications relating to the manufacture of microchips and semiconductors in the United States, as well as reviewing federal legislation that is designed to encourage domestic production of those components, which are used in most modern electronics and voting system equipment.

Discussion

This report will address current vendor sourcing practices and the constraints on obtaining specific components like microchips and semiconductors from domestic sources.

Current Vendor Sourcing Practices

The voting system vendors that responded to the SOS's survey generally indicated that most component parts are sourced from the United States, or could be obtained from sources within the United States at an increased cost to their customers. For example, the vendors indicated that components such as plastics used for the casing and structure of the voting devices are frequently obtained from foreign sources due to the increased cost of obtaining those components from domestic sources. While those components could be obtained from sources within the United States, doing so would result in increased costs for local jurisdictions that purchase voting equipment.

The vendors surveyed indicated that changing their hardware specifications to incorporate only U.S.-produced components (for those components that can be produced domestically) would take approximately two years to accommodate design and certification requirements.

In surveying these vendors, the general consensus was that most components used in the voting systems could be obtained from domestic sources at an increased cost, with the exception of microchips and semiconductors. According to the surveyed vendors, those components are not widely produced in the United States, and are generally not available to be obtained domestically by voting system vendors.

Issues Relating to U.S. Production of Microchips and Semiconductors

Current estimates state that the U.S. share of global chip manufacturing makes up approximately 12% of the global total, with foreign manufacturers making up the majority of the global manufacturing capacity.[1] The Semiconductor Industry Association (SIA) has also reported that demand for semiconductors and chips remains at an all-time high. Demand for semiconductors by government entities increased by 26.4% in 2021, while general demand for semiconductors

[1] Congressional Research Service, *Semiconductors, CHIPS for America, and Appropriations in the U.S. Innovation and Competition Act (S. 1260)* (Jan. 13, 2022), available at https://crsreports.congress.gov/product/pdf/IF/IF12016; Congressional Research Service, *Semiconductors: U.S. Industry, Global Competition, and Federal Policy* (Oct. 26, 2020), available at https://crsreports.congress.gov/product/pdf/R/R46581; Center for Strategic & International Studies, *Semiconductors and National Defense: What are the Stakes?* (June 8, 2022), available at https://www.csis.org/analysis/semiconductors-and-national-defense-what-are-stakes.

increased by 26.2%.[2] However, government entities make up only 1% of the total demand for semiconductors compared to commercial consumers.[3]

Recent federal legislation has provided government incentives to promote domestic production of semiconductors. The CHIPS for America Act recently appropriated $50.2 billion to improve manufacturing, supply chain security, and research and development for domestic semiconductor production, including $39 billion for semiconductor production incentives.[4] SIA estimates that these incentives will result in 46 new semiconductor projects across the United States, including the construction of new facilities and expansion of existing facilities.[5] The cost to create a new semiconductor fabrication facility is estimated to range from $7 billion - $20 billion.[6]

The voting system vendors who participated in the SOS's survey noted that voting systems make up a very small portion of the overall demand for chips and semiconductors. Those vendors expressed concern about their ability to compete against other sectors for the small supply of domestically-produced components. Reports have suggested that larger government sectors like the defense industry also struggle to compete for the domestic supply of chips due to their relatively small market share and difficulty competing with commercial consumers.[7]

Conclusions

It would be feasible for voting system vendors to source the majority of their components from U.S. sources, though doing so would likely result in increased costs to counties and local jurisdictions purchasing those systems.

It would not be feasible for voting system vendors to source chips and semiconductors from U.S. sources at this time, as the lack of domestic manufacturing capacity and high demand for domestically-produced chips make those components generally unattainable for voting system vendors, who make up too small of a share of the market to be competitive in obtaining those components.

For voting system components to be wholly produced in the United States, substantial steps would need to be taken to improve domestic production of semiconductors. Recent federal legislation has provided significant government incentives to encourage domestic production and allow for additional manufacturing facilities to begin construction, but it will likely be several

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[2] Semiconductor Industry Association (SIA), *2022 State of the U.S. Semiconductor Industry* (2022), available at https://www.semiconductors.org/wp-content/uploads/2022/11/SIA_State-of-Industry-Report_Nov-2022.pdf.
[3] Semiconductor Industry Association (SIA), *2022 State of the U.S. Semiconductor Industry* (2022), available at https://www.semiconductors.org/wp-content/uploads/2022/11/SIA_State-of-Industry-Report_Nov-2022.pdf.
[4] Congressional Research Service, *Semiconductors, CHIPS for America, and Appropriations in the U.S. Innovation and Competition Act (S. 1260)* (Jan. 13, 2022), available at https://crsreports.congress.gov/product/pdf/IF/IF12016.
[5] Semiconductor Industry Association (SIA), *2022 State of the U.S. Semiconductor Industry* (2022), available at https://www.semiconductors.org/wp-content/uploads/2022/11/SIA_State-of-Industry-Report_Nov-2022.pdf.
[6] Congressional Research Service, *Semiconductors: U.S. Industry, Global Competition, and Federal Policy* (Oct. 26, 2020), available at https://crsreports.congress.gov/product/pdf/R/R46581.
[7] Center for Strategic & International Studies, *Semiconductors and National Defense: What are the Stakes?* (June 8, 2022), available at https://www.csis.org/analysis/semiconductors-and-national-defense-what-are-stakes.

years before those facilities are completed and domestic supply improves. Additional incentives would likely result in increased production capacity.

It is possible that voting system vendors will still be unable to obtain components from the forecasted additional supply that these efforts will produce, due to the relatively small market for voting systems compared to the defense industry and commercial industries who will also be seeking domestic components. Providing specific incentives for chip manufacturers to make domestic supply available to voting system manufacturers could address this issue.

If domestic supply of all component parts is available to voting system manufacturers, then it would take approximately two years for those vendors to redesign their systems to accommodate component changes and to navigate the certification process for the newly redesigned systems.