

GAO@100 Highlights

Highlights of [GAO-21-202](#), a report to the Honorable Joseph Manchin, U.S. Senate

Why GAO Did This Study

Researchers at DOE and its 17 national labs regularly make contributions to new energy technologies, such as more efficient batteries for electric vehicles. Technology transfer officials at the labs help these researchers license intellectual property and partner with private-sector companies to bring these technologies to market. However, several recent reports have highlighted barriers and inconsistencies in technology transfer at DOE, including a 2015 commission report that found barriers related to the costs of collaboration and low maturity level of many DOE technologies.

This report examines (1) steps DOE has taken to address barriers to technology transfer and (2) the extent to which DOE plans and tracks the performance of its technology transfer and commercialization activities. GAO analyzed DOE documents on technology transfer and spoke with officials at DOE and seven national labs, as well as with representatives of universities and private-sector companies. GAO selected labs across a range of DOE activities and based on their technology transfer activities.

What GAO Recommends

GAO recommends that DOE assess researchers' needs for commercialization training and develop objective, quantifiable, and measurable performance goals and a limited number of related performance measures for its technology transfer efforts. DOE concurred with the recommendations.

View [GAO-21-202](#). For more information, contact Candice Wright at (202) 512-6888 or WrightC@gao.gov.

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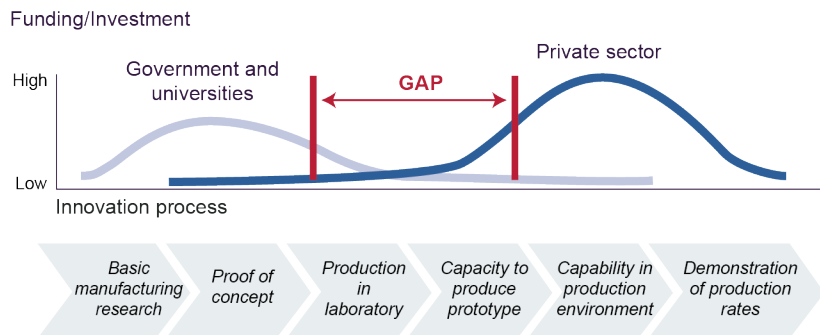
DEPARTMENT OF ENERGY

Improved Performance Planning Could Strengthen Technology Transfer

What GAO Found

The Department of Energy (DOE) and its national labs have taken several steps to address potential barriers to technology transfer—the process of providing DOE technologies, knowledge, or expertise to other entities. GAO characterized these barriers as (1) gaps in funding, (2) legal and administrative barriers, and (3) lack of alignment between DOE research and industry needs. For example, the “valley of death” is a gap between the end of public funding and start of private-sector funding. DOE partly addresses this gap with its Technology Commercialization Fund, which provides grants of \$100,000 to \$1.5 million to DOE researchers to advance promising technologies with private-sector partners. Further, DOE’s Energy I-Corps program trains researchers to commercialize new technologies and to identify industry needs and potential customers. However, DOE has not assessed how many and which types of researchers would benefit from such training. Without doing so, DOE will not have the information needed to ensure its training resources target the researchers who would benefit most.

Illustration of Funding Gap for Commercializing New Technologies



Source: GAO adapted from Executive Office of the President. | GAO-21-202

DOE plans and tracks the performance of its technology transfer activities by setting strategic goals and objectives and annually collecting department-wide technology transfer measures, such as the number of patented inventions and licenses. However, the department does not have objective and measurable performance goals to assess progress toward the broader strategic goals and objectives it developed. For example, without a performance goal for the number of DOE researchers involved in technology transfer activities and a measure of such involvement, DOE cannot assess the extent to which it has met its objective to encourage national laboratory personnel to pursue technology transfer activities. Internal control standards for government agencies call for management to define objectives in measurable terms, either qualitative or quantitative, so that performance toward those objectives can be assessed. Moreover, DOE has not aligned the 79 existing measures that it collects with its goals and objectives, nor has it prioritized them. Some lab stakeholders said that collecting and reporting these measures is burdensome. Prior GAO work has found that having a large number of performance measures may risk creating a confusing excess of data that will obscure rather than clarify performance issues.