

Green tech startups see boost in patents and investment when partnering with government

March 18 2019

Latest research on hundreds of new green technology companies in the US shows the patenting activity of a startup climbs by over 73% on average every time they collaborate with a government agency on "cleantech" development—from next-generation solar cells to new energy storage materials.

The study also found that every time a cleantech startup licensed a technology developed by a [government agency](#), the company secured—on average—more than double the amount of financing deals when compared to similar startups: a 155% increase one year after taking out a licence.

Collaboration with universities and [private firms](#) are a familiar path for many startups, yet government partnerships are significantly undervalued when it comes to green technologies, say researchers.

While the role of public-private partnerships in sectors such as biotech and IT is well known, they say that—until now—there has been a lack of data on the effectiveness of these alliances in cleantech. The study is published in the journal *Research Policy*.

"Our findings suggest that some of the signs commonly used to track innovation and business success, such as patents and financing, increase when new cleantech companies partner with US government departments or labs," said study co-author Laura Diaz Anadon, Professor of Climate Change Policy at the University of Cambridge.

Prof Claudia Doblinger, study first author from the Technical University of Munich, said: "Government research laboratories have a major role to play in the climate challenge but also the growth of small businesses—twin objectives at the heart of many policy discussions, such as the Green New Deal in the United States."

The researchers built a new dataset of 657 US cleantech startups and the more than 2,000 partnerships those companies established between 2008 and 2012, to gauge the different outcomes for private and public alliances.

Around 66% of the startups were less than five years old in 2008, with the remaining 34% commencing during the selected study period. The research included companies across the sustainable sector: from wind to marine power, and recycling to batteries.

In addition to the benefits seen in patenting and investment, researchers also found that alliances with some of the stronger innovation outcomes were outside of major tech hubs such as Silicon Valley—suggesting the potential for building "regional ecosystems".

The National Renewable Energy Laboratory (NREL), for example, part of the US Department of Energy and situated in Colorado, is a "prominent example of government organisations in the US partnering with cleantech startups", say researchers.

A major player in the development of green technologies, NREL it worked throughout the 2000s with [startup](#) companies in "thin film" such as First Solar, which in 2009 became the largest producer of Cadmium Telluride solar technology.

Researchers point out that NREL has granted more than 260 licenses since 2000, and this study shows the value of government agencies such

as this have on startups in particular.

The study's authors argue that the scale, facilities, and longer-term perspective of state agencies, such as the US Department of Energy and its seventeen national laboratories, naturally complement the nimble startups that can sniff out and adapt technological developments to market opportunities at a faster rate.

"Governments can and should have longer-term perspectives when compared to the private sector, and thus play a critical role in energy innovation," said study co-author Prof Kavita Surana, from the University of Maryland.

"Beyond grants and supporting the early markets, it is the joint development and transfer of knowledge that government agencies are able to foster with startups that makes a difference.

"As the US Congress and civil society prepare to debate the substance of the policies like the Green New Deal, facilitating public-private partnerships could well be an important, and relatively inexpensive, part of any forward-looking policy package," said Surana.

Doblinger says that to forge lasting partnerships with emerging businesses, government agencies should test out incentives that support collaborative projects.

"Initiatives such as investing more in technology transfer capabilities, starting entrepreneurs in residence programs, or allowing government scientists to take temporary leave to work with a private firm, could reduce information asymmetry and provide incentives to researchers," she said.

Anadon believes that the lessons from the study are worth considering in

national contexts beyond the US. "For the agencies of any [government](#) to successfully work with startups, sufficient and stable funding is vital—along with technology transfer and communication support."

"Our findings should be taken into consideration whenever funding for public research into sustainable energy is being debated. Cleantech that comes from public-private partnerships will be essential for meeting global climate and sustainability goals," she said.

More information: Claudia Doblinger et al, Governments as partners: The role of alliances in U.S. cleantech startup innovation, *Research Policy* (2019). [DOI: 10.1016/j.respol.2019.02.006](https://doi.org/10.1016/j.respol.2019.02.006)

Provided by University of Cambridge

Citation: Green tech startups see boost in patents and investment when partnering with government (2019, March 18) retrieved 28 April 2024 from <https://phys.org/news/2019-03-green-tech-startups-boost-patents.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.