



Why Does Policy Matter?

It will take more than just scientists and innovators to reach net zero emissions by 2050. The world will need to see governments around the globe take leadership and direction in this endeavor by investing in ideas and technologies that will allow for more sustainability. Only with the help of the world's governments will we be able to move forward.



0:11

*Clip showing solar panels;
clip of weather changes on
a map*

*Labels pointing out the US,
China, and Europe*

*Video of windmills, a man
charging his car; Reichert
appears on screen with a
textbox showing her name*

Of all the tools we have to reach net zero emissions by 2050, one of the most important is government because of the numerous ways it can drive or impede success.

At the highest level, leaders around the world will be responsible for setting net zero targets by providing a vision of how their countries will transition to clean technologies, and they will also have to make sure that their populations are ready for the changes that are ahead.

But the role of government is more than just delivering leadership and direction. It must also supply the capital to help turn the ideas of today into the technologies of tomorrow. Emily Reichert is the CEO of Greentown Labs, the largest climate technology incubator in North America. In her role, she sees first-hand the impact that government investment can have in furthering innovation.

1:09

*Video of men walking
down a hallway and
working in a lab at MIT*

EMILY: There are quite a few barriers today to developing climate technology solutions. First and foremost, there's capital. Capital is, of course, the money that you need in order to do experiments in a laboratory, test things, hire staff, and bring to the table expertise that you might need to develop your technology.

That running a lab piece that is incredibly expensive—all of those things require capital in order to be successful in developing your solution.

The importance of having R&D and having technologists working on these problems cannot be understated.

1:53

*Clips of construction
workers building new
technologies*

Today, we have a lot of solutions that we can apply to addressing climate change and reducing greenhouse gas emissions, but we don't have all of the solutions, so we do need the innovators that are working in laboratories across the country, whether it be universities, or national laboratories, or government laboratories, to continue to be trying to address these challenges.

Early government investment is key when developing the really difficult technologies we'll need to reach net zero. These areas can carry a higher than normal risk a failure, or they may take an extended period of time to build and improve. And while a certain percentage of these projects funded with tax dollars won't pan out, that's to be expected. It's worth the price for those ideas that succeed.

2:46

*Photo of the building of
new innovations*

EMILY: There's a lot of what we call technology risk inherent in a very early stage climate technology. There is uncertainty in whether this technology will actually become a product someday and make a return on an investment.

Textbox for “seed capital”

So, at the very beginning, what government is really needed to do is catalyze, to provide some “seed capital”, we call it, to de-risk that technology a bit, to do some of that early testing to get it to the point where we’re reducing the technology risk enough that it makes sense for the private sector to invest.

There are definitely several areas where investment by the government could be especially useful, and those areas are ones that there tends to be a lot of science and engineering, a lot of trial and error, a lot of testing in laboratories and with scientists and engineers and other experts.

3:44

Clips of new innovations at work

This is something that takes years and takes really smart people in order to make happen. So some of those areas would be, for example, in energy storage. We need utility scale energy storage, so that solar and wind, which are intermittent in nature, can deliver power to our homes and our businesses continuously at a scale that really makes a difference.

Videos of construction men at work

Other examples are industrial processes, manufacturing processes, such as manufacturing cement, which releases a lot of carbon dioxide today, manufacturing steel—that’s another really big one that we need to be thinking about.

Video of people working on computers

So, these are a couple examples, there are many, many more, but you need to think about the government’s role in really helping these technologies.

4:38

Clips of innovators developing ideas; video of windmills

In addition to funding high-risk, high reward ideas, government can also provide support at critical stages once a technology is proven, but it is not developed enough for venture capital or private investment to back.

Textbox: grand funding

EMILY: Young companies and innovators benefit from grant funding that can be available to address critical gaps that happen during the journey of building a company. So, early stage, seed capital, before private sector partners are willing to take a risk on this technology. There’s actually another gap though, beyond that very early stage when we need to de-risk the technology and that is when we need to scale the technology.

Oftentimes, there is a gap in the funding available for going from the stage where we’ve proven it on a technical basis, but now we need to prove it really at the scale it needs in order to be adopted in a big way.

5:38

Video of a solar-powered neighborhood

And so that is another role that the government, both at a state level in the United States and a federal level can play.

Clips of solar panels being used

Another area where government can have an important role is by creating markets for clean technologies. This can be done by offering incentives like tax credits and loan guarantees to the private sector. As well as by using the government’s position as a massive consumer to drive emerging technologies into the marketplace.

Clips of construction sites and new green technologies

6:31

Governments at all levels buy huge quantities of fuel, cement, and steel, purchase fleets of vehicles, and use enormous amounts of electricity. By giving priority to low emission and emission-free technologies, such policies can create market certainty, as well as help to reduce green premiums.

EMILY: Policy plays a very important role in helping to accelerate innovation. When you think about why an entrepreneur decides to do a particular startup, you have to assume that there is going to be not only a technology at the beginning, but a market to sell a product into at the end.

And so, policy, through frameworks that incentivize or create a structure for there to be lower greenhouse gas emission, products, and services, tend to help entrepreneurs understand that their technology will ultimately have a market.

Clips of construction workers putting structures together

7:26

To assist people in affected communities, government policies can provide retraining opportunities to transition people from fossil fuel related jobs, into emission-free industries.

Policies can also provide incentives for clean technology businesses to relocate or build new facilities in these communities and thereby allow people to remain where they've planted roots. But government policies cannot do everything, nor should they. Some of the changes we can expect will be easy to make, others will be quite difficult.

Clip of a construction worker studying a tablet and two workers talking; clip of green buildings

Hans appears on screen; textbox introducing him; video of two women gardening; video of crops and two farmers conversing; video of sustainable farms

8:25

HANS: This is not going to happen in government only or in the headquarters of big companies, we need to understand that we will need social innovation, we will need citizenship that is aligned with that sort of direction, and we need to tap into the creative forces in our society. You cannot decide this stop down, we are living in vibrant, creative societies where people are thinking about what type of lifestyle they want to have in a sustainable future, what type of life they want their kids to have.

Let's try to connect those thoughts and understand that we need systemic change to go in that direction.

Clip of the globe rotating; clips of scientists working in labs

8:54

Is this challenging? It's very challenging. Is it possible? Yes, it's possible, but we need to know that the window of opportunity to do this is rather quickly closing so we don't have much time to lose. To reach net zero emissions by 2050, we'll need innovations across many sectors.

But innovation can be more than inventing a new technology. It can also mean coming up with new policies to help ideas out of the research and development phase and into the marketplace, or rewriting policies to ensure that the technologies we need can compete on a level playing field.

Videos of new potential innovations; video of a government building

Clip of a United Nations conference, scientists conducting research; the US capital

Innovation is both new tools and new ways of doing things. Government is in a unique position to help us reach our climate goals. It can fund the high-risk and potentially high-reward projects that the private sector typically does not because government can take chances on ideas and mega-size projects that might fail or might not pay off right away.

And to increase the chances of success, government can also provide the long-term stability that these kinds of projects often need.

9:48

Clip of a large United Nations conference; graphic showing factories producing pollution and a carbon tax

In addition to these critical roles, government has many other measures it can deploy: for instance, it can establish policies like a carbon tax or a cap and trade system to limit carbon emissions, as well as a carbon border adjustment tax to limit the presence of countries acting as free riders on the global stage.

Prime Minister of the UK speaking at United Nations meeting

Each of these send strong signals about the need to limit greenhouse gases and can help to move us closer to net zero.

Clip of factories emitting smog and clips showing green technologies being produced

Finally, government has the power to assist people as we transition away from a fossil fuel-based economy by offering tax incentives for clean technology businesses to build new facilities near affected communities, or by providing retraining opportunities.

Clip of the globe rotating on its axis

Government can ensure that everyone can benefit as we address the challenges of climate change.



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