

Fusion Energy in New Mexico

Science and Technology and Telecommunication Committee
9.9.2026



Agenda

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| 01 | Fusion energy |
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| 02 | Fusion in New Mexico's energy portfolio |
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| 03 | Pacific Fusion's plans in the state |
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01

Fusion energy

Fusion has been the holy grail of energy for 70+ years.



Affordable, reliable on-demand power



Carbon-free energy

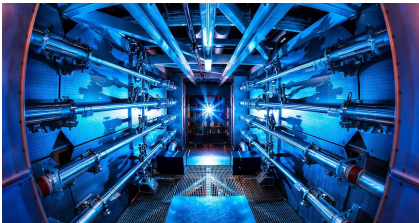


Inexpensive, limitless fuel

Three breakthroughs in 2022 created a new path to practical inertial fusion energy:

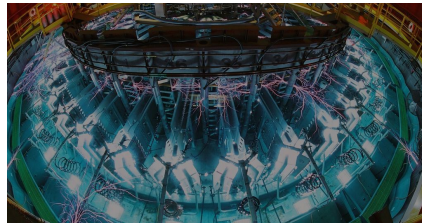
01

First-ever controlled
fusion ignition



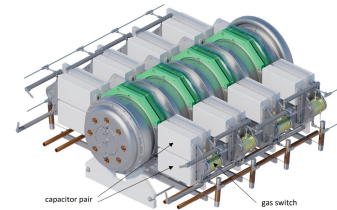
02

Efficient path to ignition
using electric pulsed



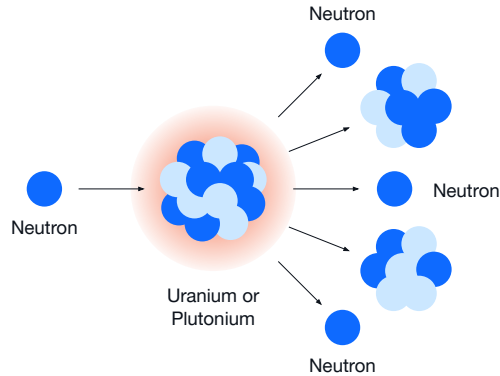
03

Mass-manufacturable,
modular electric pulsed

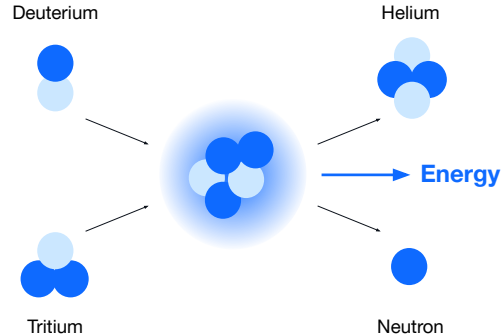


Fusion $\neq$ Nuclear Fission

Fission



Fusion



No risk of meltdown.

No long-lived waste.

Does *not* use uranium/plutonium.

ADVANCE Act (Accelerating Deployment of Versatile, Advanced Nuclear for Clean Energy Act of 2024)



As a result: Fusion has a more streamlined regulatory framework, similar to medical facilities, due to passing of the [ADVANCE Act](#) in 2024.

Fusion is safe



No risk of runaway reactions or meltdown.

Fusion immediately stops as soon as you stop driving it.



Any use of radioactive materials is regulated by the State of New Mexico.

The State's Department of the Environment Radiation Control Bureau ensures all radioactive materials are regulated, shielded, and monitored for safe operations.



Universities and hospitals safely use radioactive materials for research and treatments.

Major medical centers routinely employ beta and gamma emitters to destroy cancer cells.

Universities use radioisotopes in devices such as tritium-filled neutron generators for materials testing and bacterial sterilization studies.

Fusion power provides abundant energy with limited environmental impact

Water

- Fusion power is not water intensive. Our research and manufacturing campus will use the same amount of water as a white collar office facility of a similar size, and future power plants will operate in a closed loop system that uses dry cooling.

Low-impact fuel

- Fusion fuel is energy dense. Just a pound of fusion fuel can power over 1,000 homes for a year. The primary source of fuel is refined from seawater: deuterium and lithium (to produce tritium).

Limited, short-lived waste

- Fusion power plants will produce orders of magnitude less waste than fission power, and fusion waste cools quickly, enabling safe disposal by existing routes used by hospitals and research facilities.
-

What is Tritium?

A hydrogen isotope

Tritium (abbreviated as 3H) is a hydrogen atom that has two neutrons and one proton in the nucleus, and decays to helium (3He) with a 12.3 year half life.

Source

Lithium

Common current uses

Tritium is used to create glow-in-the-dark lighting for products such as exit signs and watch dials. It is also a tracer in biomedical research to study and diagnose heart disease, cancer, and AIDS.

Power system use

Our future power plants will use a small starting supply of tritium (e.g., < 1 pound) to commission the system. After that, the closed loop system will breed (from lithium) and consume its own tritium.

What is Deuterium?

A hydrogen isotope

Deuterium is a stable isotope of hydrogen, representing 1 out of every 6420 hydrogens.

Source

Seawater

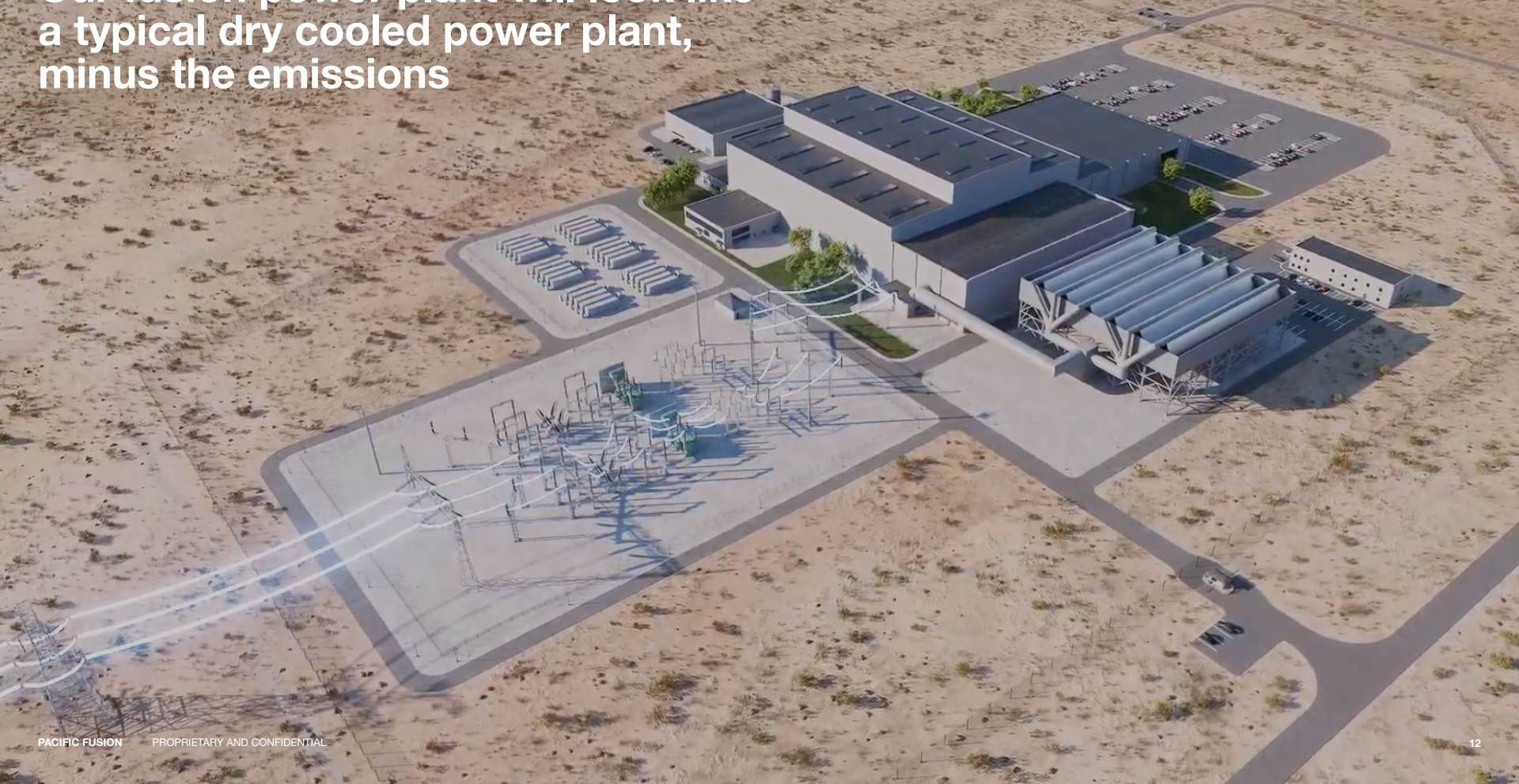
Common current uses

Deuterium is used across a variety of industries, including energy, pharmaceuticals, scientific research, and semiconductor processing.

Power system use

A 300 MW power plant would consume about 80 pounds of deuterium per year. A coal power plant would burn over a million tons of coal per year to generate the same amount of electricity.

Our fusion power plant will look like
a typical dry cooled power plant,
minus the emissions



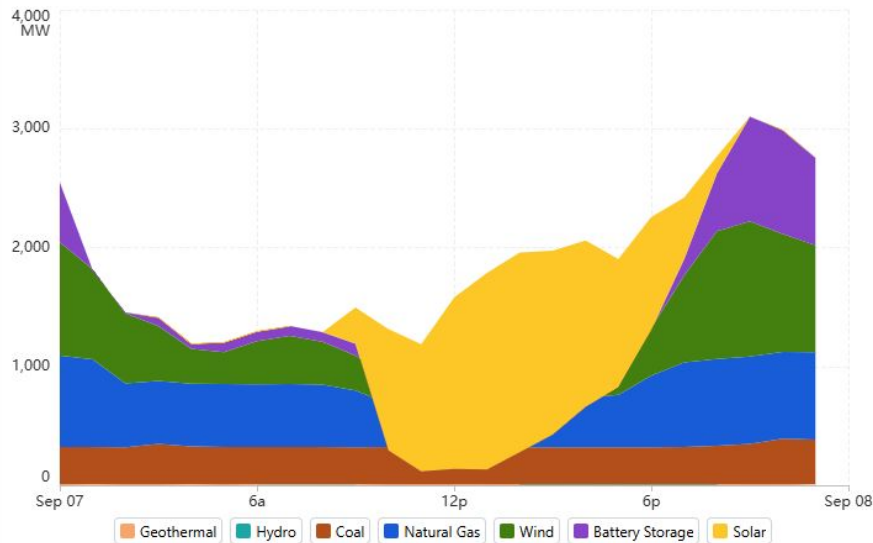
02

Fusion in New Mexico's energy portfolio

New Mexico's future energy portfolio needs new sources of zero-carbon energy

- **Firm and dispatchable sources of generation are critical to maintaining a reliable and resilient electric grid**
 - *Firm: Available when needed*
 - *Dispatchable: Flexibility to be turned on and off or have output increased or decreased as needed*
- **Solar and wind resources provide a significant amount of zero-carbon energy to New Mexico's grid, but...**
 - They are intermittent (not available on demand, do not contribute to grid resiliency)
 - They often require long transmission lines and significant amounts of land use
- **The Energy Transition Act (ETA) requires 100% zero carbon generation by 2040**

Fuel Mix - Public Service Company of New Mexico

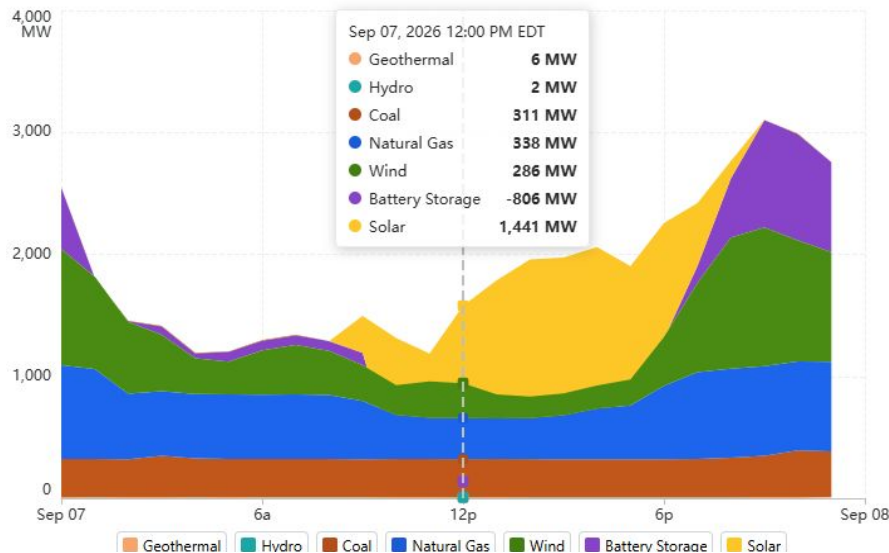


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15

Fuel Mix - Public Service Company of New Mexico



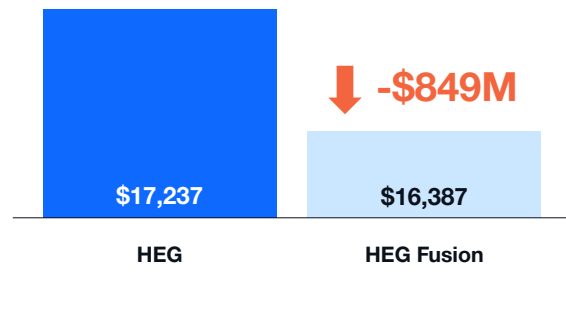
Fusion can provide the low-cost, firm, dispatchable energy which will decarbonize our grid faster and at a substantially lower cost

PNM's recent IRP highlights **fusion's potential to be the most cost-competitive source of firm generation** while achieving key objectives across **affordability, decarbonization and grid resiliency**.

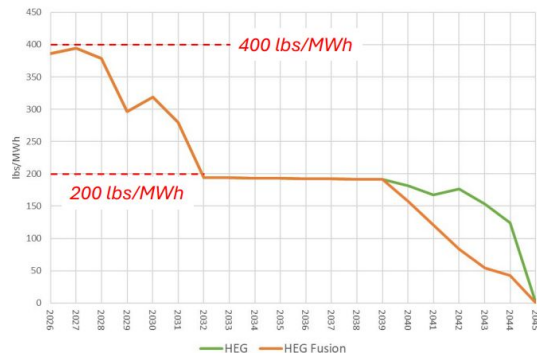
An analysis of including fusion energy in PNM's energy mix under a High Economic Growth Scenario showed that:

- Fusion energy could reduce total system costs by nearly \$850M, and
- Fusion energy could reduce carbon emissions at a faster rate

20-Year Net Present Value (\$M)



Projected Annual Portfolio CO2 Rate (lbs/MWh)



03

Pacific Fusion's plans in New Mexico

Pacific Fusion is a local partner with a clear path to making fusion energy a reality

- Built on established science
- Right people
- Mass manufacturable design that is:
 - Practical
 - Affordable
 - Scalable
- We've raised the capital to execute

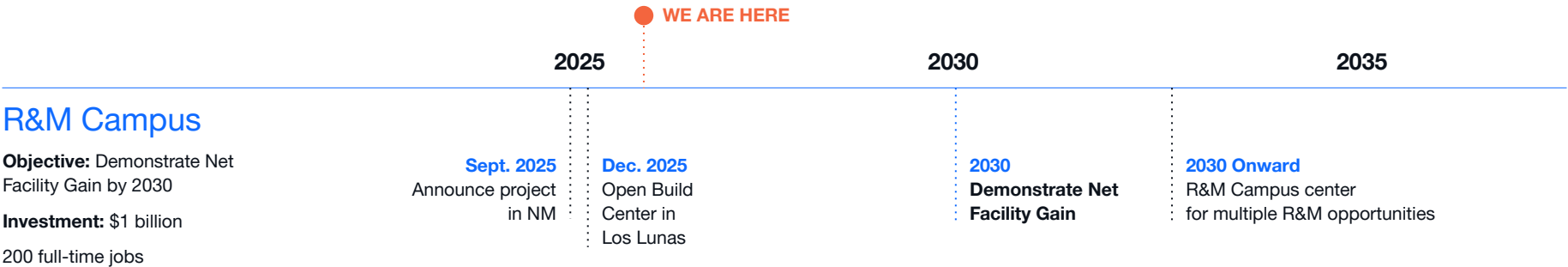


Our vision for a New Mexico fusion economy

1. Establish first-ever fusion factory
2. Build and operate a profitable Research and Manufacturing Campus
 - a. 200 permanent employees from PF
3. Build first power system in New Mexico
 - a. 100-200 operational jobs
4. Expand NM manufacturing to build power plants across the country
 - a. Hundreds of thousands of sq. ft of manufacturing
 - b. Thousands of jobs



Our path toward fusion energy for the grid

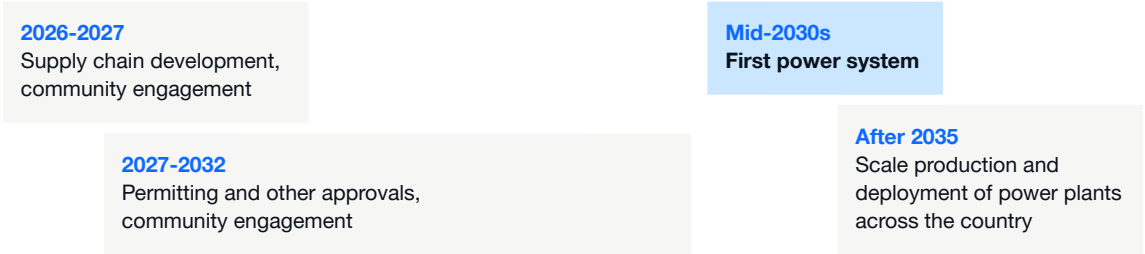


Fusion Energy Systems

Objective: Carbon-free, on-demand power by mid-2030s

Investment: \$10s of billions

1,000s of full-time jobs



Los Lunas Build Center: The world's first fusion factory

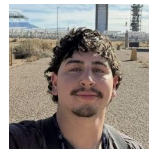
CURRENT STATUS:

- Invested in building for a production-ready manufacturing floor
- Production of Demonstration System components began in May
- 79 employees and growing, with 95% from in-state



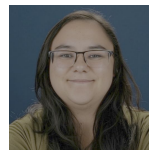
Creating meaningful jobs in Los Lunas:

“The work is hands-on, fast-moving, and meaningful, which is exactly the type of environment I wanted to be in. Working at PF means a lot for my life and career.”



Ethan Alderete
Electro-Mechanical
Technician
Los Lunas Build Center

“The work is challenging, the mission is exciting, and you're surrounded by people who are motivated to solve hard problems. For me, working at PF means being part of something with real purpose.”



Victoria Lujan
Electro-Mechanical
Technician
Los Lunas Build Center

We are assembling the modular components of our system at the Los Lunas Fusion Factory



~50k

100,000 capacitors
+ 50,000 switches



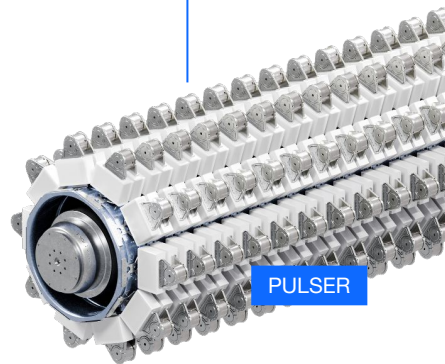
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Identical
bricks/stage



× 32

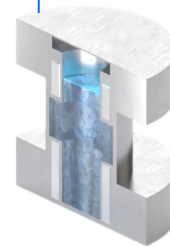
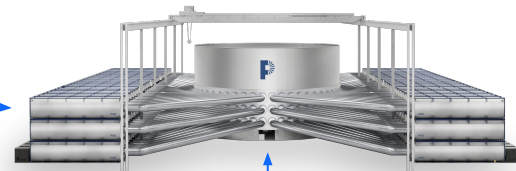
Identical
stages/module



PULSER

× 156

Identical
modules/pulser



TARGET

- Small size (<1 cm)
- Low complexity design enables low manufacturing cost
- Compatible with ~Hz rep rate

The facility will have minimal impact on the environment



Not a drain on local water supply

Our facility will not place unusual demand on the community's water supply – less than other commercial buildings of a similar size.



Limited electricity use

Facility requires ~10 megawatts from Public Service Company of New Mexico (PNM).

Community partnerships:

Establishing roots for long-term presence

- Village of Los Lunas and City of Albuquerque
- Industry collaboration:
 - New Mexico Fusion Trade Association
 - Greater Albuquerque Chamber of Commerce
 - Valencia Chamber of Commerce
 - Next New Mexico Economy Project
- Workforce development:
 - CNM, UNM-Valencia, NMSU-Grants
 - New Mexico's research universities
- K-12 STEM programming:
 - Explora (sponsored STEM scholarship)



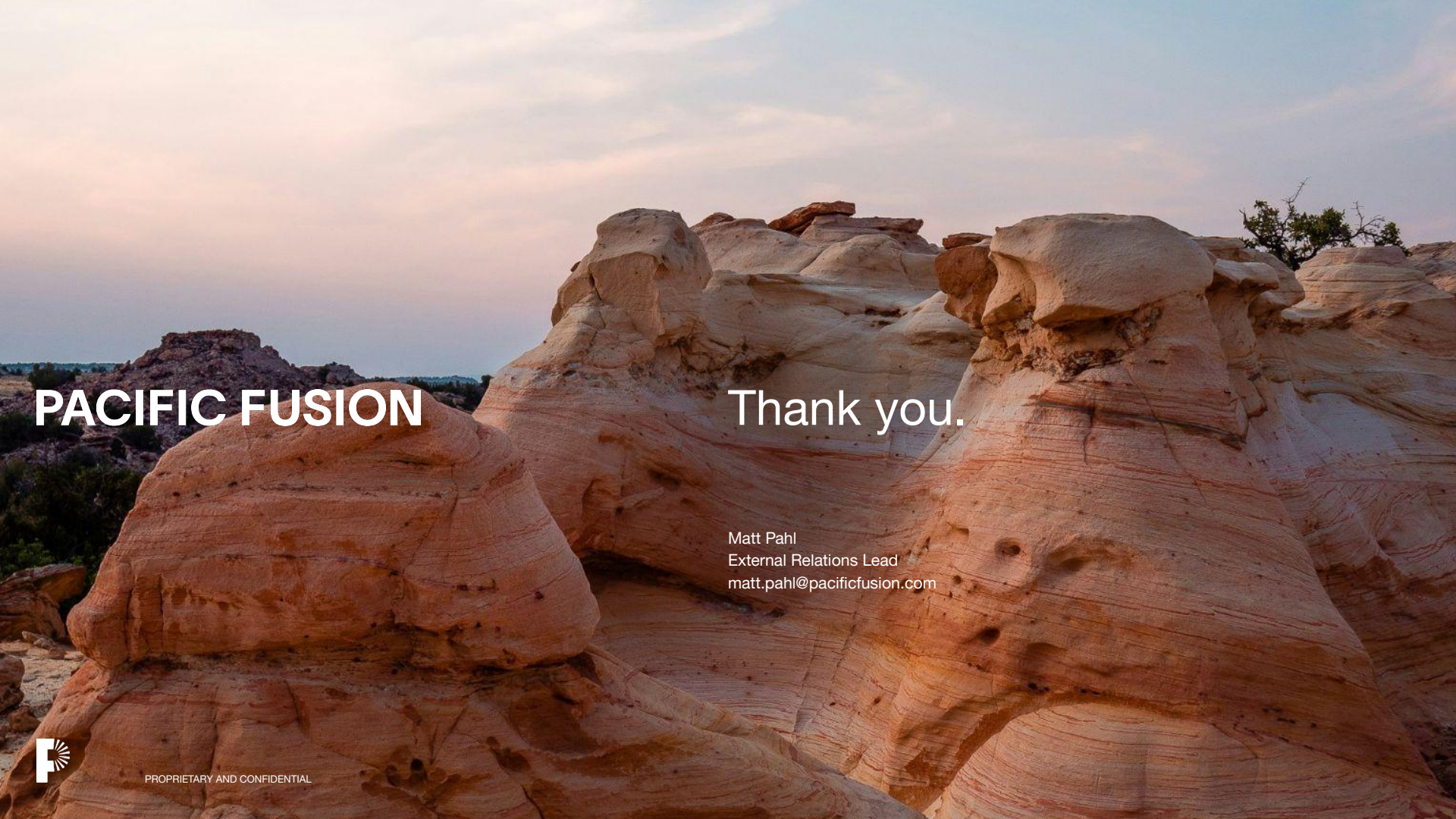
The New Mexico state legislature can support the fusion economy by:

01

Supporting changes
to the R&D tax credit

02

Supporting an emerging
technology development
fund for first of a kind
power plants



PACIFIC FUSION

Thank you.

Matt Pahl
External Relations Lead
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PROPRIETARY AND CONFIDENTIAL