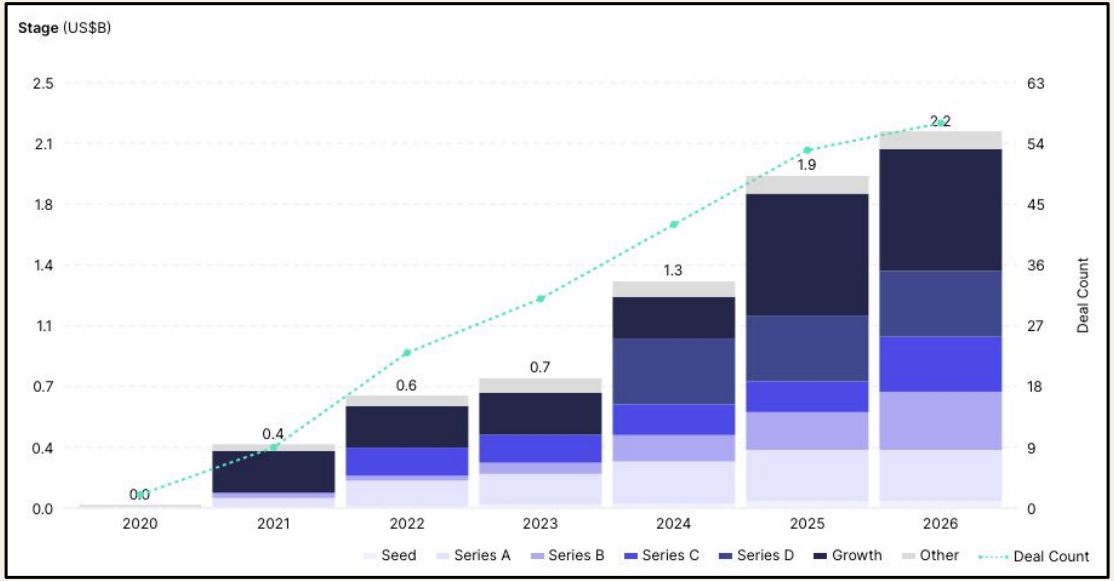
DOCKETED	
Docket Number:	26-IEPR-04
Project Title:	Geothermal
TN #:	271327
Document Title:	Overcoming Barriers to Geothermal Financing
Description:	Presentation by Mike O'Conner at the July 9, 2026, IEPR Commissioner Workshop on California's Geothermal Energy Resources
Filer:	Stephanie Bailey
Organization:	Mike O'Conner
Submitter Role:	Other Interested Person
Submission Date:	7/8/2026 2:45:49 PM
Docketed Date:	7/8/2026


Mountain West
Geothermal Consortium
Overcoming Barriers to Geothermal Financing
IPER Workshop
July 9, 2026

The pipeline of geothermal projects has dramatically accelerated

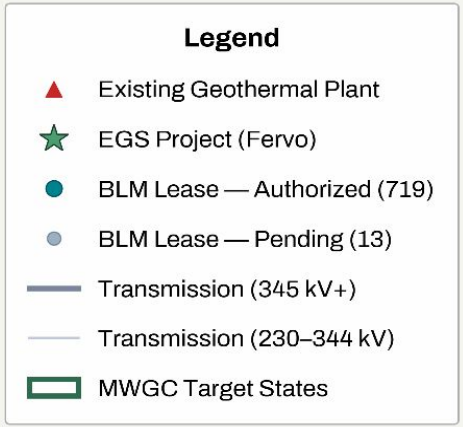
In the last year alone:

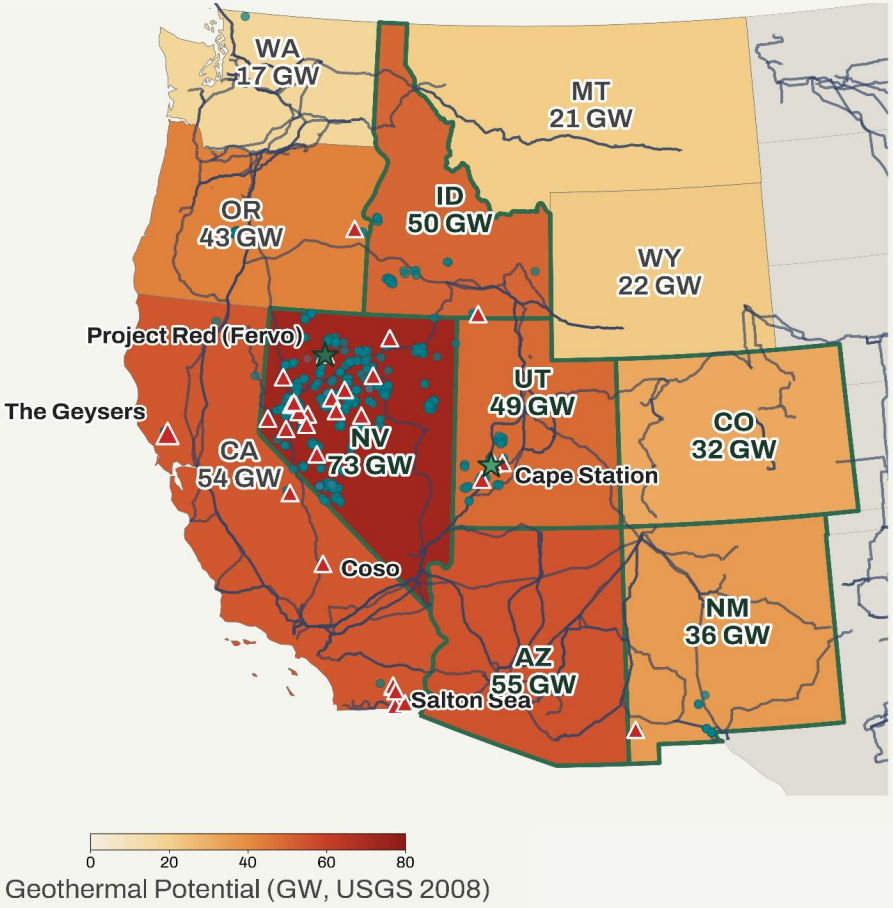
- Ormat
  - $875 M debt financing
- Fervo
  - $462 M Series E
  - $421 M non-recourse debt
  - Filed for IPO
- Zanskar
  - $115 M Series C
  - $40 → $100 M dev facility
- Sage
  - $97 M Series B
- Mazama
  - Amidst a $100 M Series C (*Axios*)



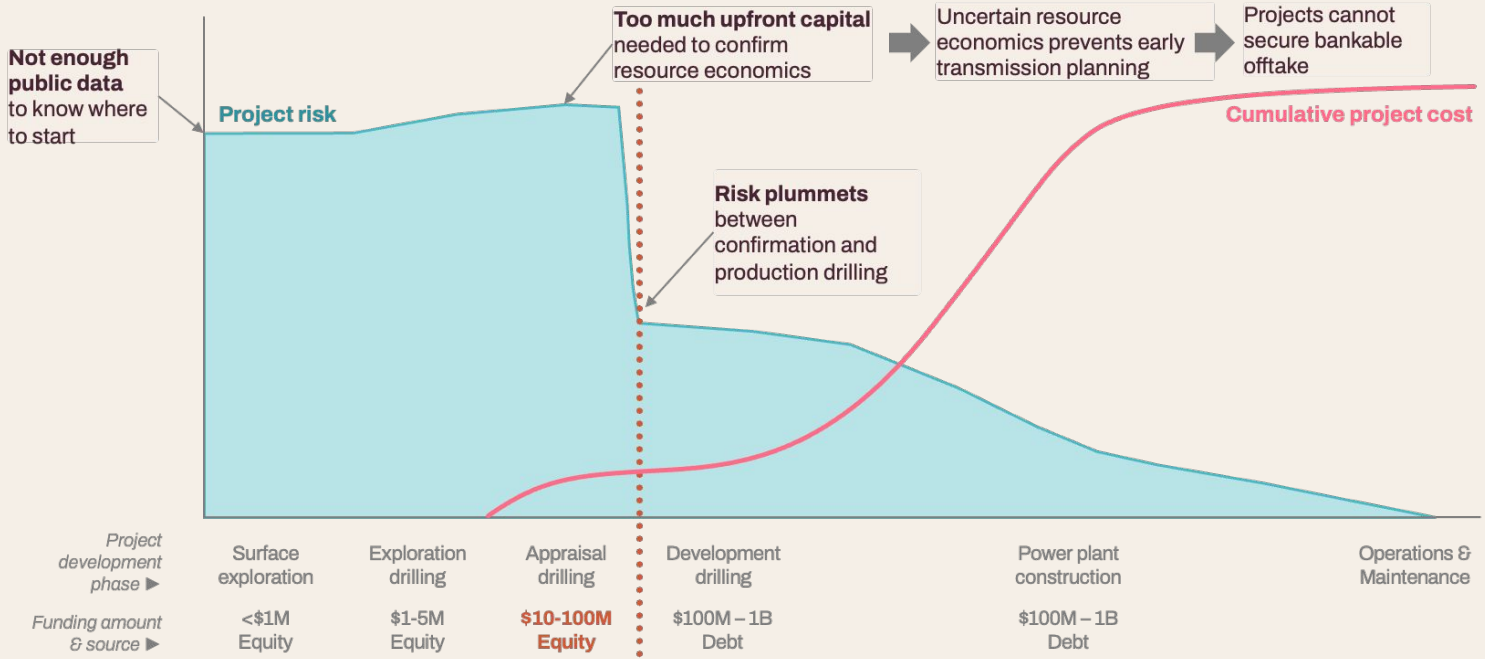
Source: Sightline Climate

But geothermal deals aren't expanding the map like we need them to.





Early project risks are throttling the potential pipeline



Appraisal drilling in oil & gas is similarly risky but the industry had key advantages

The shale boom faced similar risks to geothermal…

	Conventional	Shale
Exploration Success Rate	20-40%	~100%
Appraisal Success Rate	60-85%	40-70%

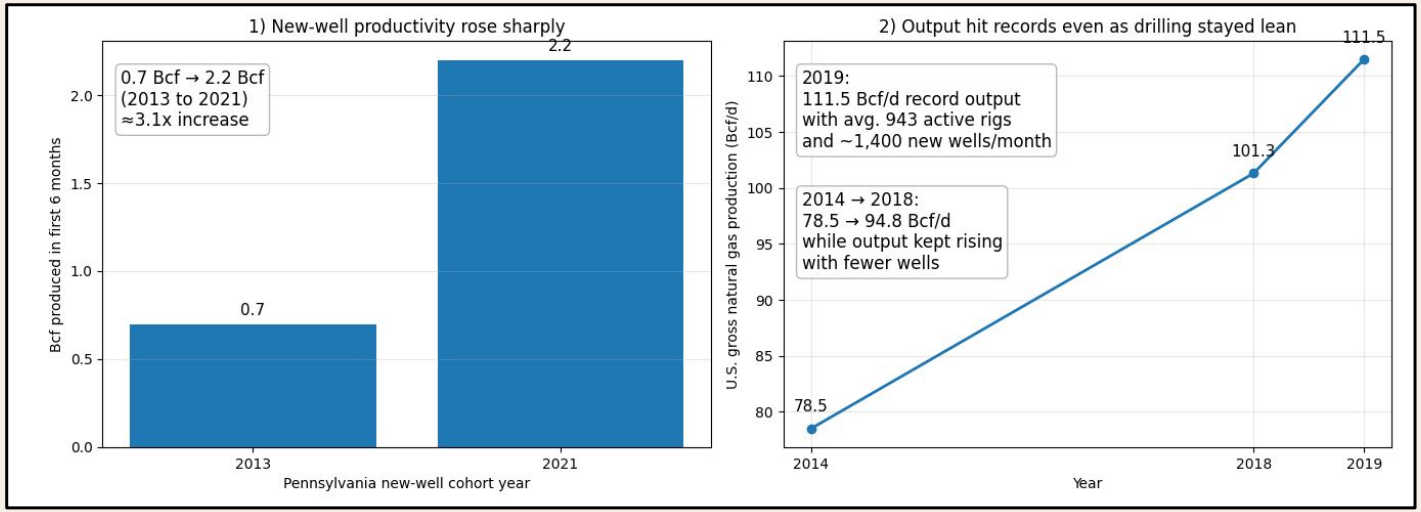
… but had access to key tax writeoffs and large balance sheets

- **Intangible drilling tax credit (IDC)** allows deduction of 80%+ of the cost of drilling
  - If appraisal succeeds, companies collect profit from new resource
  - If appraisal fails, companies benefit from tax write offs on huge balance sheets

AS A RESULT, ALMOST **400,000 WELLS** WERE DRILLED AND **$300 BILLION** IN CAPITAL WAS SPENT ON SHALE DRILLING BETWEEN 2010 - 2020

Those key advantages were critical to the industry's scale and success

The shale boom benefited from a combination of unique incentives, numerous trials, and large balance sheets



Source: EIA Today in Energy (April 17, 2023 and March 14, 2019)

The Geothermal Struggle

Ineffective tax incentive

Geothermal can't monetize the 80%+ writeoff for unsuccessful drilling campaigns

+

Small balance sheets

Can't use balance sheet capital for high-cost appraisal drilling

...and couldn't collect on an IDC if it existed

+

Limited data

Drivers of appraisal uncertainty are not as well understood

= hesitant capital **when we need it most**

Every new cool geo project you know about leverged some concessionary head start

		Concessionary Head Start	
	Tech approach	**Capital**	**Strategy**
Cape Station *Fervo*	EGS	DOE Awards *[$30M]* FORGE *[~$100M]*	Brownfield site *Alongside Utah FORGE & Roosevelt Hot Springs*
Blanford *Fervo*	EGS		50 mi from FORGE
Big Blind *Zanskar*	Conventional	DOE Award for different project *[share of $80M]*	**Truly hidden system… but within DOE "hidden systems" study**
Pumpernickel *Zanskar*	Conventional		Current geothermal plant
Newberry *Mazama*	Hot rock EGS	DOE Award *[$20M]*	Brownfield site *Former AltaRock project*
XGS NM Proj. *XGS*	AGS		Brownfield site *Former Fenton Hill demo area*

Financing Solution:

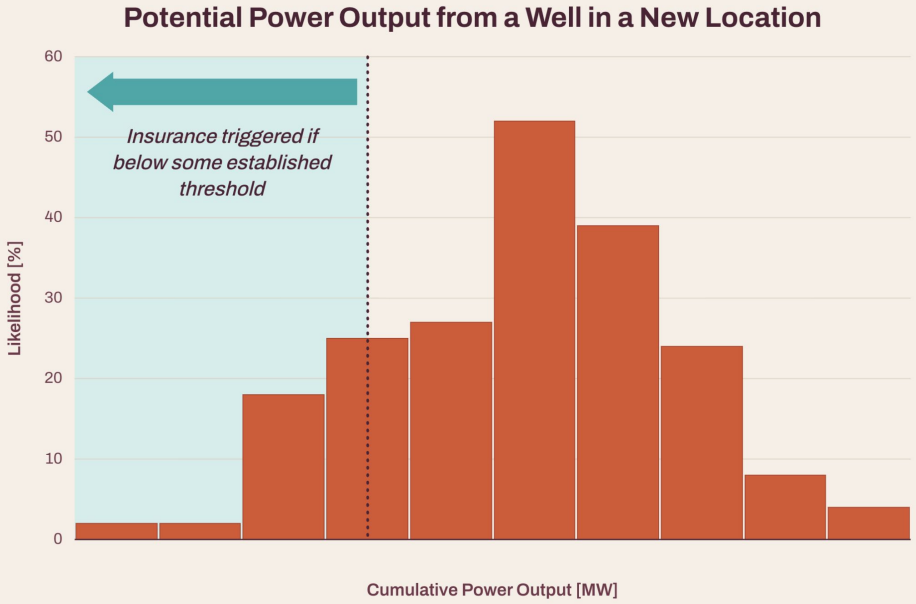
An Appraisal Drilling Derisking Fund

Predictable risks are priceable

The subsurface has randomness, but that randomness has limits. **We can model those limits.**

We took **real** exploration data from a **real** reservoir in Colorado and modeled likely power output outcomes.

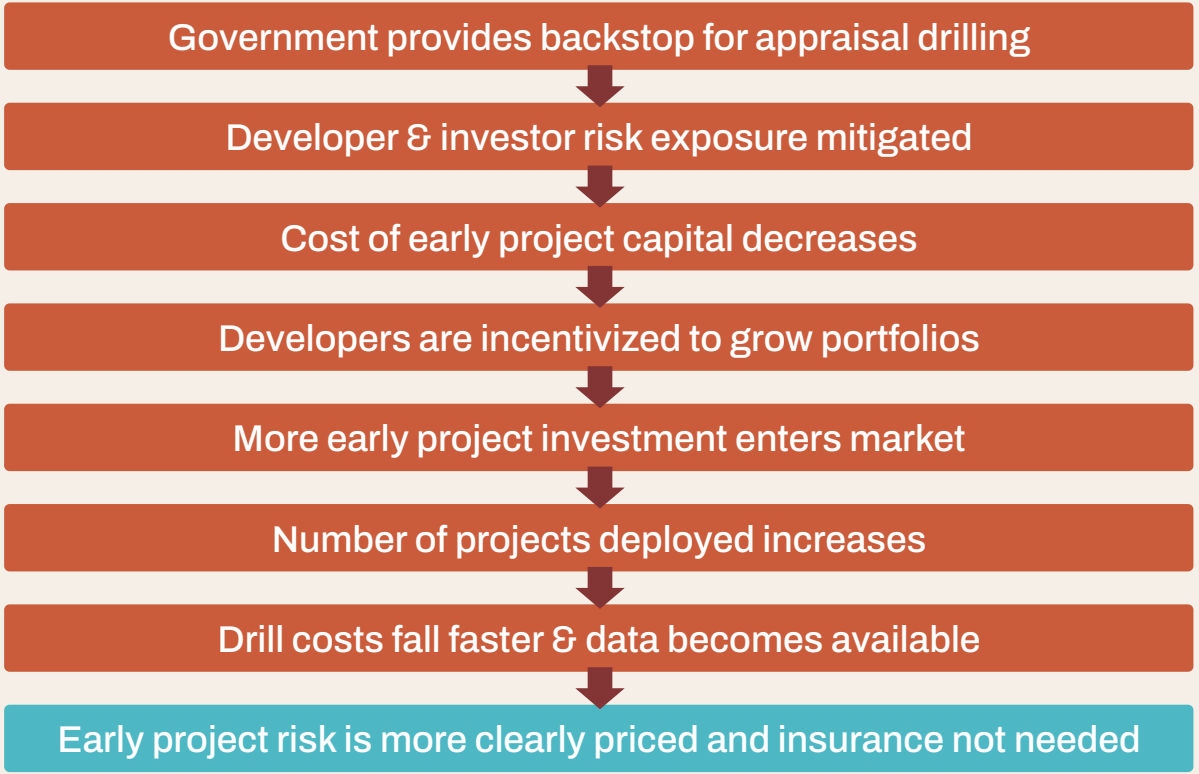
If risk can be modeled, it can be priced.



Modelling of a five well cluster based on real data from a basin in Colorado Courtesy of ResFrac (K. Beckers, A. Zebrowski)

The fastest way to grow the pipeline is to mitigate downside risk

Impact & value to the industry



There are two program structures we're investigating

Option 1:
Risk Sharing

- Capital in *reserve*
- Used if a failure threshold is triggered

Option 2:
Convertible Loan

- Capital *up front*
- Paid back if a success threshold is triggered

Capital for appraisal phase *only*

Same test used for failure threshold & success threshold

PRELIM EXAMPLE: Capitalizing a 5 project portfolio that de-risks $318M in drilling costs

Based on our research, each project has a **~10% chance of failure**. At a portfolio level, that means there is a **~92% chance that 1 project or less will fail.**

Scenario	Probability	Payout	Premium collected	Fund balance[2]
No failure	59%	-	$83.6M	**$83.6M**
1 failure	33%	($80M)	$62M	**$18M**
2 failures	7%	($150M)	$44M	**($106M)**
3 failures	1%	($210M)	$28M	**($182M)**
4 failures	0%	($268)	$13M	**($255M)**
5 failures	0%	($318)	-	**($318M)**

Note: Model assumes projects all have unique start dates and number of months until trigger not shown. Start dates span May 27 to Oct 28. Months to trigger vary from 28 to 40. 1. Premium formula: Premium = (P × Exposure + λ × √[P(1-P)] × Exposure) / [(1+RFR) / (1+WACC)]^(months/12). λ=.5 2. Assumes highest cost project fails


Thank you!