

Calculation and Socialism

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Calculation and Socialism

- Humans act to relieve dissatisfaction.
- Action exchanges one condition for another, and in so doing compares values of two needs.
- Lengthy and complex production processes require calculation.
- Prices are the unit of calculation in an exchange economy.
- Money does not measure value.
- Misuse of money calculations is common.
- Money allows calculations of values of many goods of higher orders (imputed value).
- Under socialism, economic calculation is impossible.

SOCIALISM

An Economic and Sociological Analysis

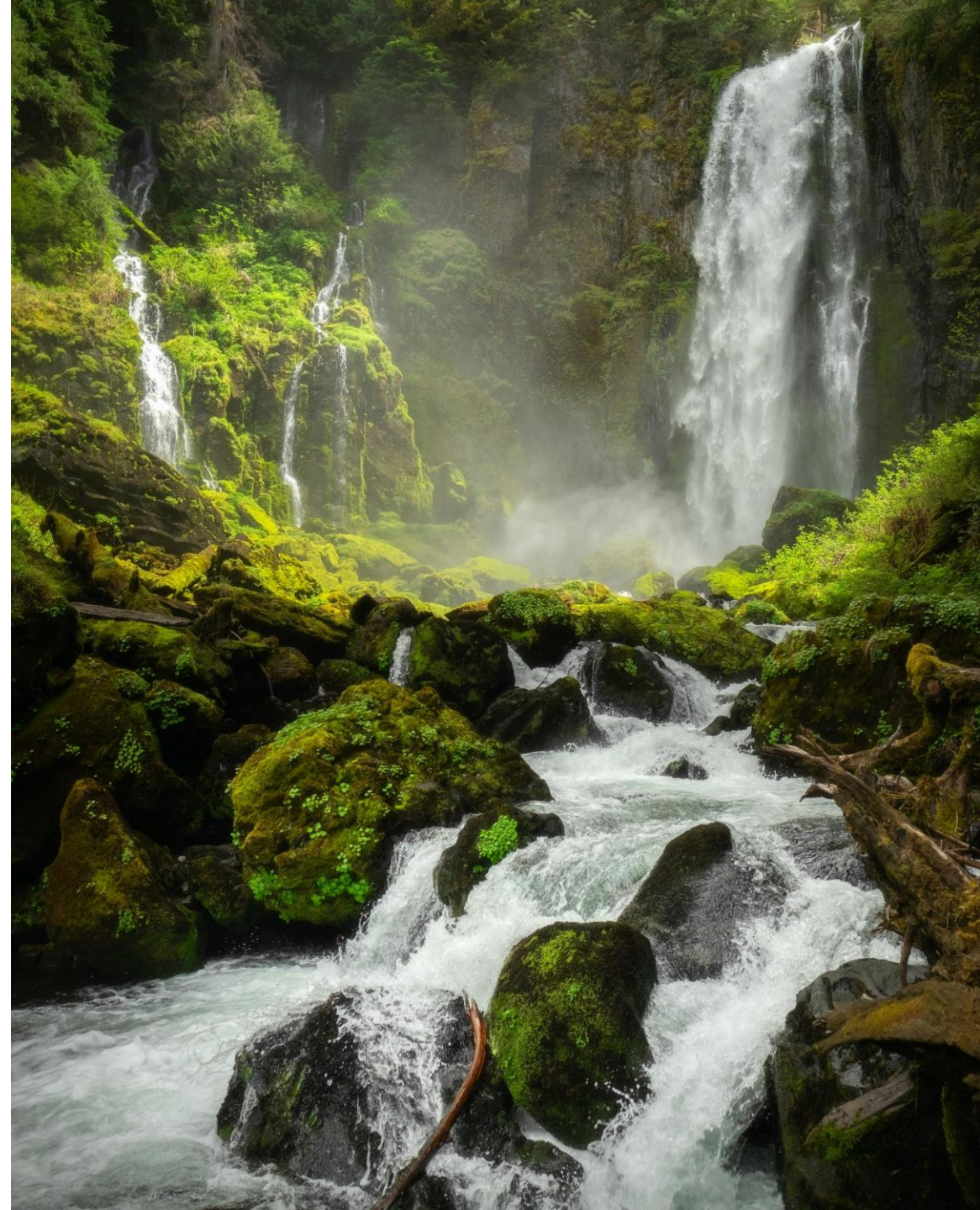
Ludwig von Mises



“Deficiencies of Money Calculations”

“The deficiencies of money calculations arise for the most part, not because they are made in terms of a general medium of exchange, money, but because they are based on exchange values rather than on subjective use-values. For this reason all elements of value which are not the subject of exchange elude such computations. If, for example, we are considering whether a hydraulic power-works would be profitable we cannot include in the computation the damage which will be done to the beauty of the waterfalls unless the fall in values due to a fall in tourist traffic is taken into account. Yet we must certainly take such considerations into account.”

-- Mises, *Socialism*, pp. 115, 116



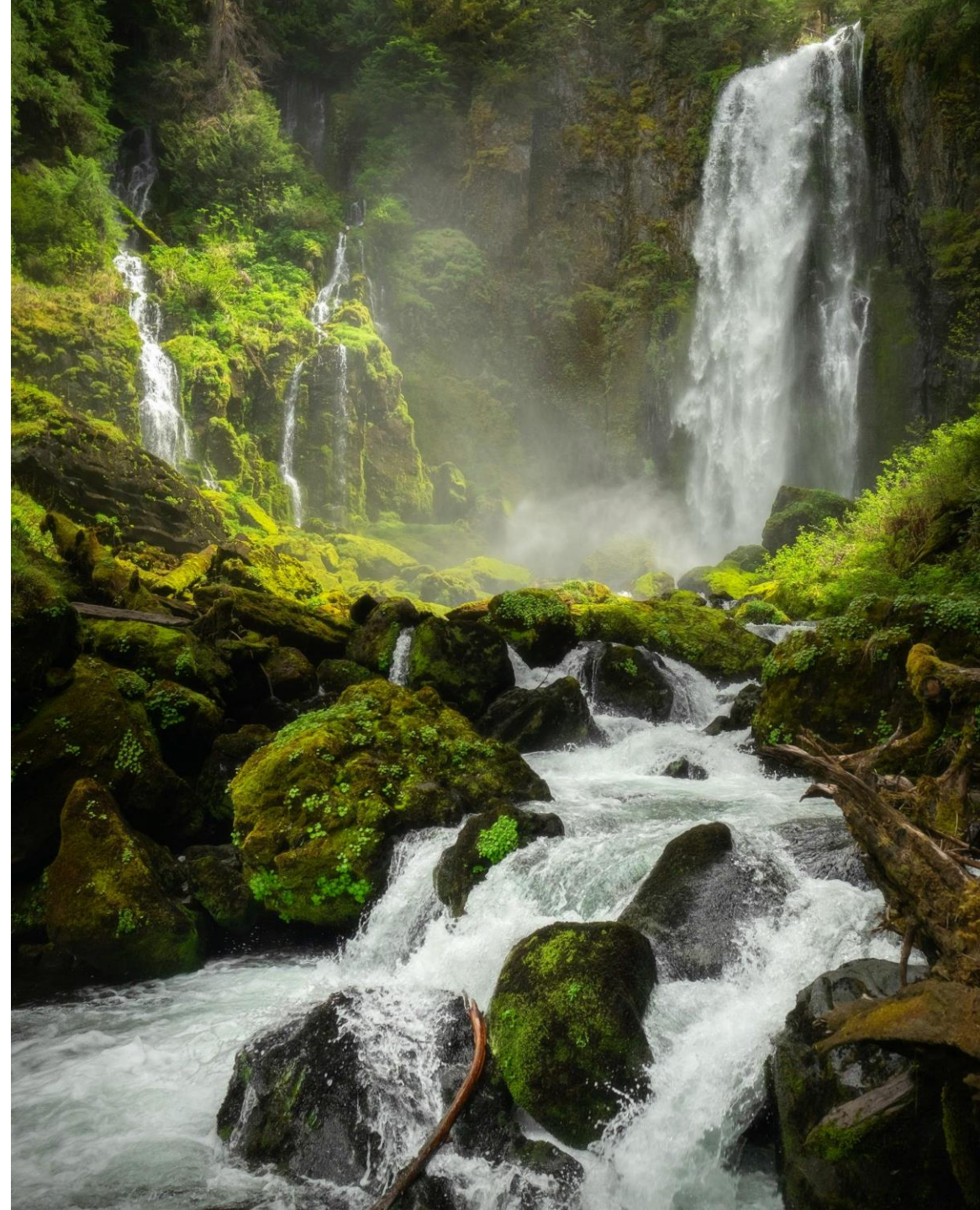
“Deficiencies of Money Calculations”

“...Considerations such as these are often termed ‘non-economic.’

“...But this does not in the least lessen the value of money calculations in ordinary economic matters. For all such moral goods are goods of the first order. We can value them directly, and therefore have no difficulty in taking them into account, even though they lie outside the sphere of money computations.

“...If we know precisely how much we have to pay for beauty, health, honour, pride, and the like, nothing need hinder us from giving them due consideration.”

-- Mises, *Socialism*, p. 116



How Does Socialism Survive?

- “...a surrounding system of free pricing...” (p. 119)
 - “...it is possible to observe the effects... in similar private undertakings at home and abroad.”
- “For some time possibly the accumulated tradition of thousands of years of economic freedom would preserve the art of economic administration from complete disintegration. (p. 119)
 - “In the meantime... changing conditions would make them irrational.” (p. 120)

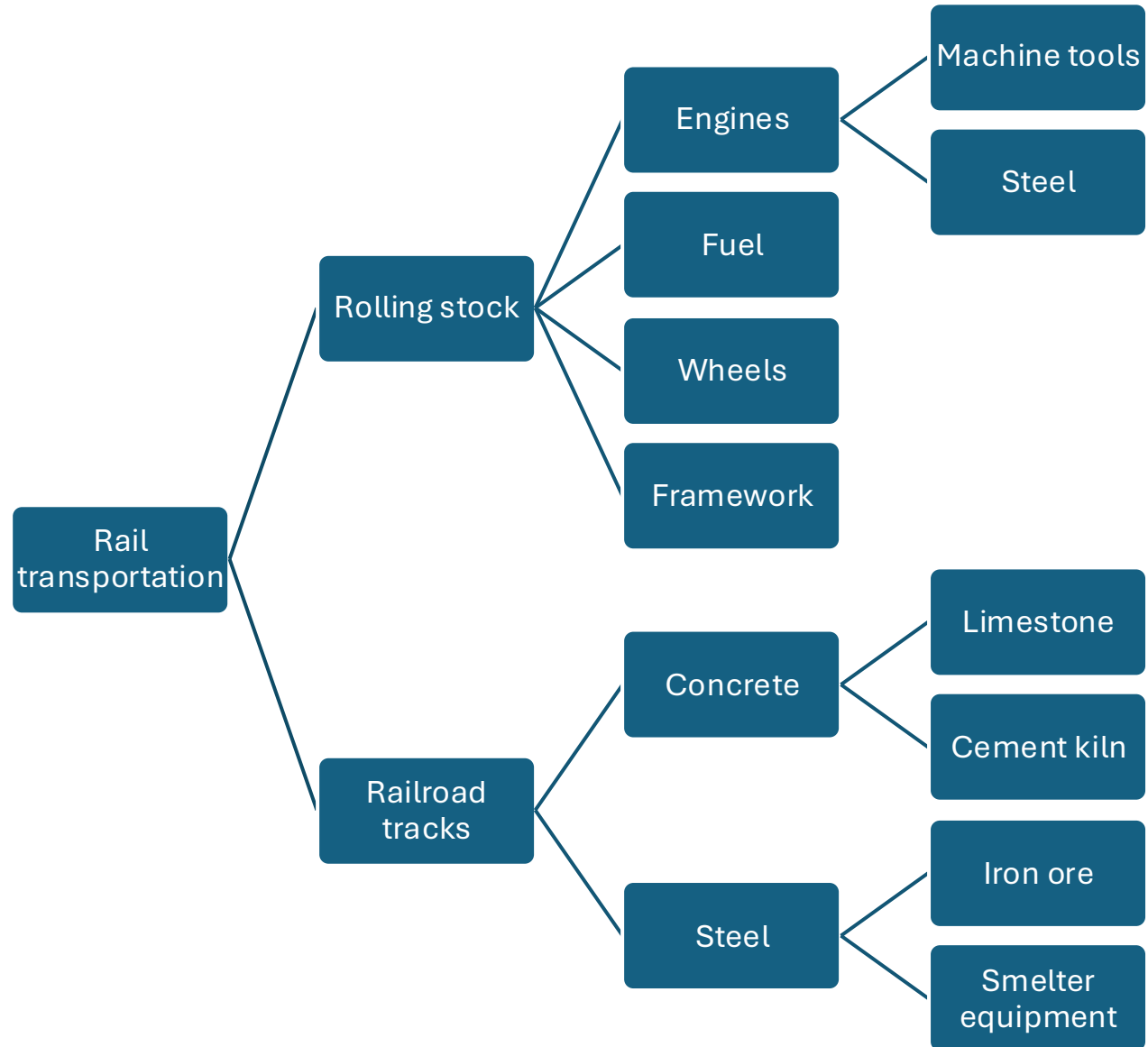


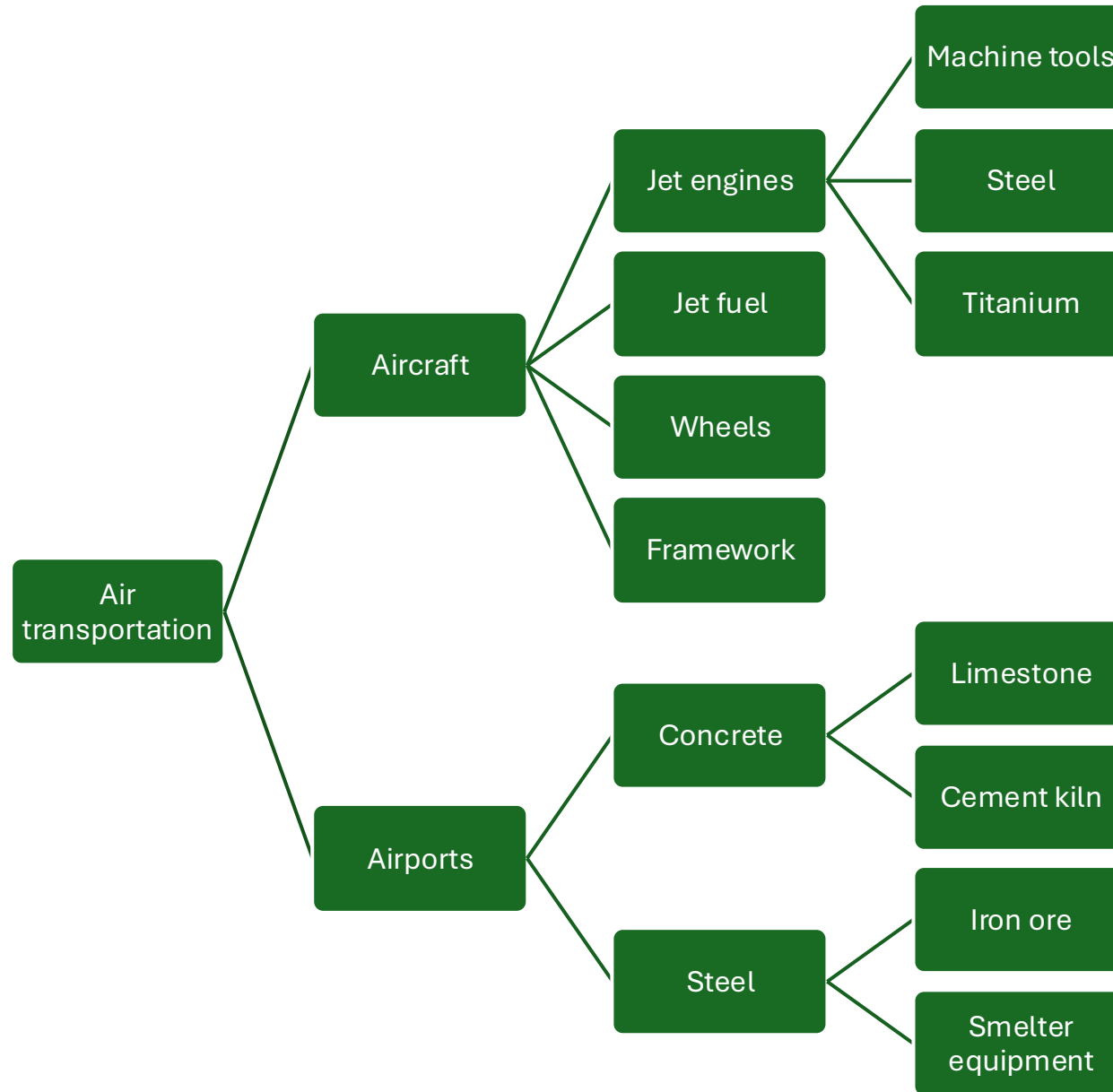
How Does Socialism Survive?

- “How would [the economic administration] discover which of two processes was the more satisfactory.? At best, it could compare the quantity of ultimate products. But only rarely could it compare the expenditure incurred in their production.” (p. 120)
- “...the valuation of the means of production [is a problem] it cannot solve.” (p. 121)

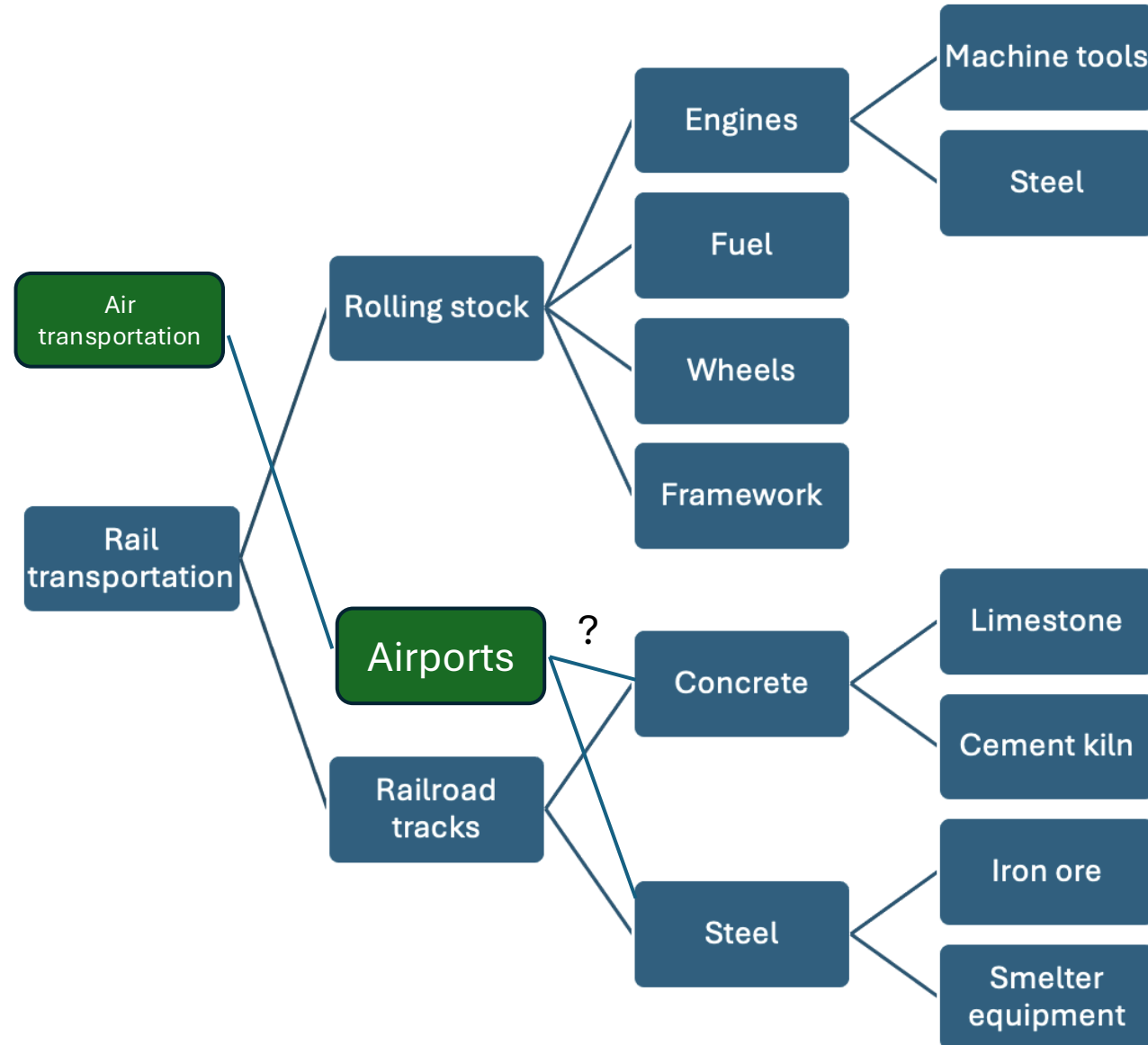


Socialists sometimes think of production problems as simply involving physical engineering.





- Should goods be moved by air or by rail?
- Should steel and concrete be used for airport tarmacs or railroad tracks?
- Should natural gas be used for making electricity or for heating cement kilns?
- How fuel-efficient should the aircraft engines be, if fuel efficiency requires scarcer metals and different machining techniques?
- Should oil be refined into Jet A or diesel?



- Should people be trained to make machine tools or to make steel? How many? To what level of expertise?
- Should large, expensive machines be used to mine iron ore, or cheaper machines that are simpler to repair but produce less iron ore in a day?
- What energy source should be used in the smelters?

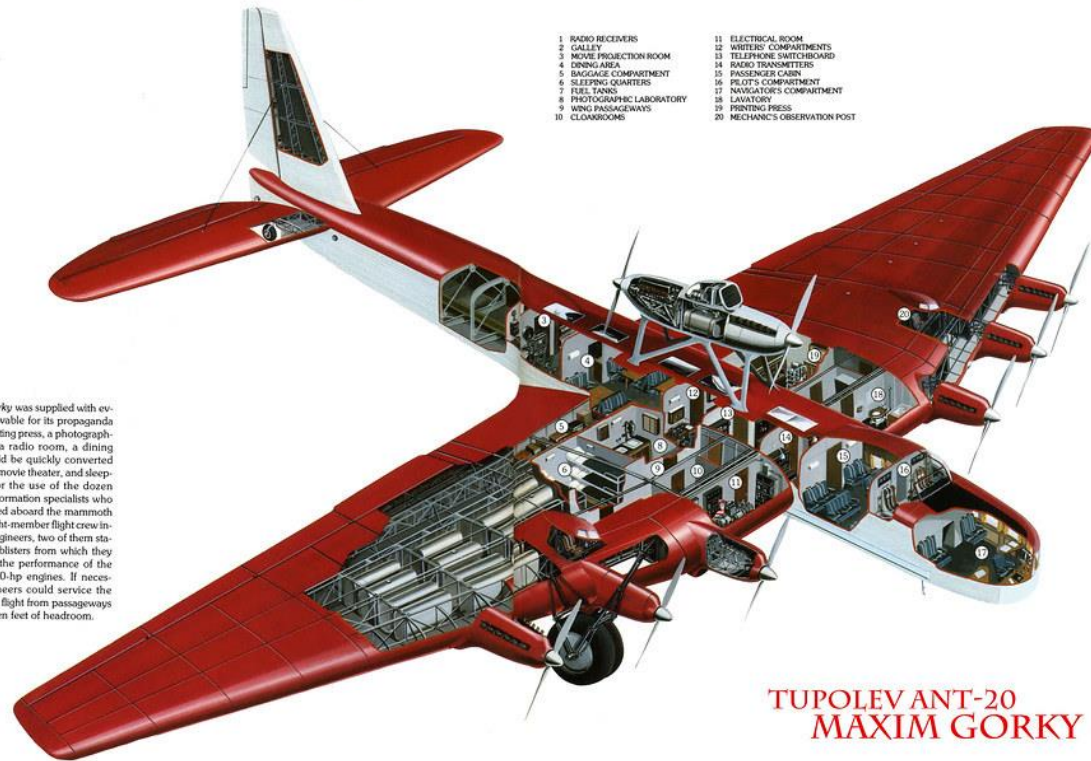


Calculation without Prices?

- “Suppose, for instance, that the socialist commonwealth was contemplating a new railway line. Would a new railway line be a good thing? If so, which of many possible routes should it cover?”
- “Under a system of private ownership we could use money calculations to decide these questions. The new line would cheapen the transportation of certain articles, and, on this basis, we could estimate whether the reduction in transport charges would be great enough to counterweigh the expenditure which the building and running of the line would involve.” (p. 121)

Туполев АНТ-20 "Максим Горький"

- | | |
|---------------------------|--------------------------------|
| 1 RADIO RECEIVERS | 11 ELECTRICAL ROOM |
| 2 GALLERY | 12 WRITING COMPARTMENTS |
| 3 MOVIE PROJECTION ROOM | 13 TELEPHONE SWITCHBOARD |
| 4 DINING AREA | 14 RADIO TRANSMITTERS |
| 5 BAGGAGE COMPARTMENT | 15 PASSENGER CABIN |
| 6 SLEEPING QUARTERS | 16 PILOT'S COMPARTMENT |
| 7 FUEL TANKS | 17 NAVIGATOR'S COMPARTMENT |
| 8 PHOTOGRAPHIC LABORATORY | 18 LAVATORY |
| 9 WING PASSAGEWAYS | 19 PRINTING PRESS |
| 10 CLOAKROOMS | 20 MECHANIC'S OBSERVATION POST |



The Maxim Gorky was supplied with everything conceivable for its propaganda missions: a printing press, a photographic laboratory, a radio room, a dining room that could be quickly converted into a compact movie theater, and sleeping quarters for the use of the dozen government information specialists who lived and worked aboard the mammoth aircraft. The eight-member flight crew included three engineers, two of them stationed in wing blisters from which they could observe the performance of the 12-cylinder, 900-hp engines. If necessary, the engineers could service the wing engines in flight from passageways with five to seven feet of headroom.

TUPOLEV ANT-20 MAXIM GORKY

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Final Decision BLM Terminates American Prairie's Bison Grazing Permits

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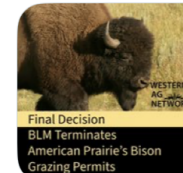


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Last week, the BLM kicked bison off 63,000 acres of government land, favoring cattle interests. Bureaucrats, deprived of market benefit-cost information, base land use decisions on politics. Mises's socialist calculation problem again.

[westernagnetwork.com/blm-terminates...](https://westernagnetwork.com/blm-terminates-american-prairies-bison-grazing-permits-582026)
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BLM Terminates American Prairie's
Bison Grazing Permits
westernagnetwork.com

10:58 AM · 5/13/26 · **1.9K** Views

<https://westernagnetwork.com/blm-terminates-american-prairies-bison-grazing-permits-582026>



Final Decision

BLM Terminates American Prairie's Bison Grazing Permits

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Should grazing land be used for bison or cattle?

- “Eat more beef!”
- ”Don’t waste allotments on bison!”
- “We like seeing bison!”
- “If you don’t call them buffalo, you clearly don’t know what you’re talking about!”
- *Without real markets and profit and loss signals, the information isn’t there for government.*

<https://westernagnetwork.com/blm-terminates-american-prairies-bison-grazing-permits-582026>

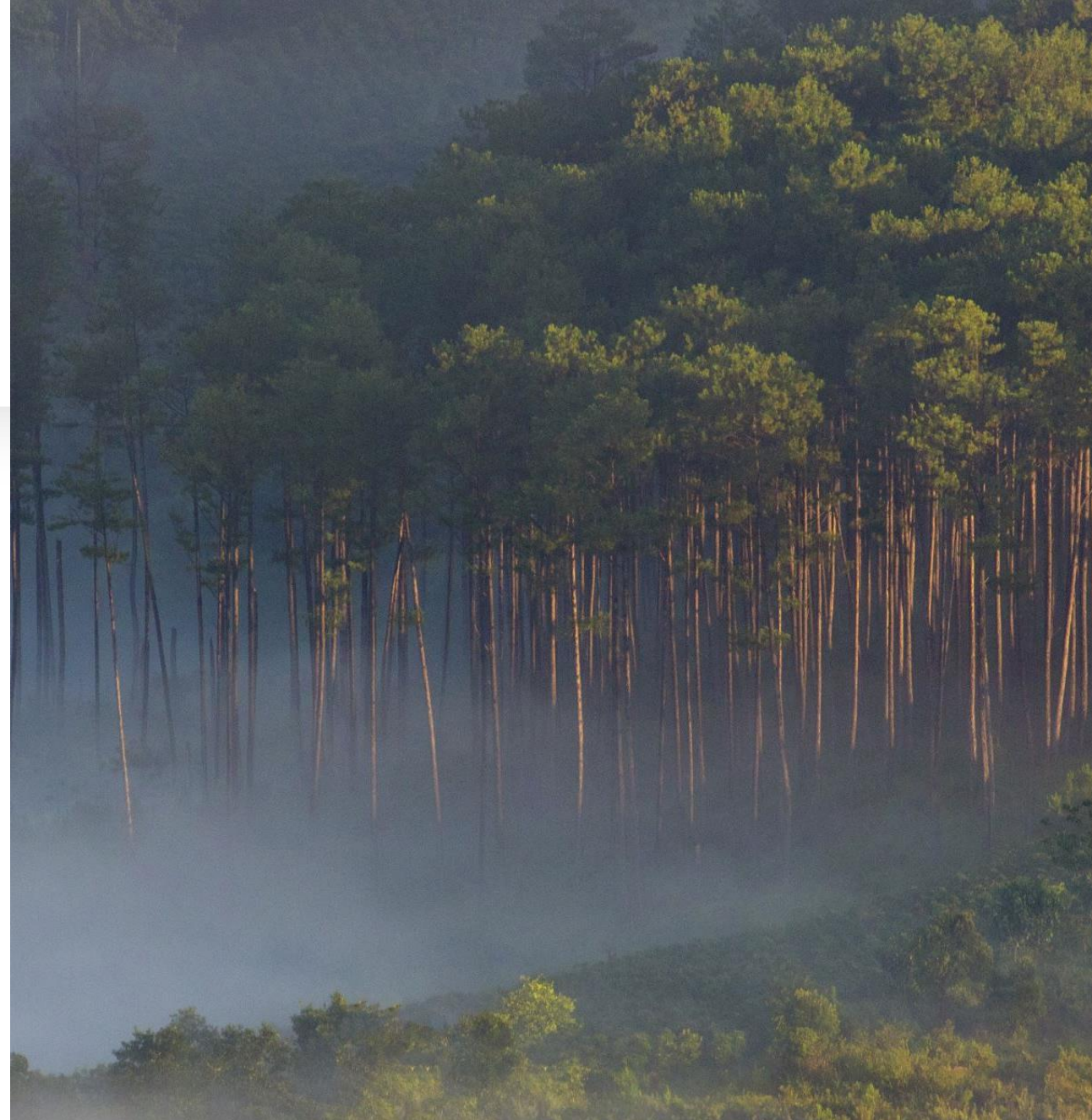
Competing Uses

- Recreation
 - More visitors with more crowding, or fewer visitors with less crowding?
 - More facilities with higher costs, or fewer facilities with lower costs?
 - Optimize for motor vehicle travel, hiking, camping, wildlife viewing, hunting...?
- Wilderness
 - Managed to avoid negative effects on people nearby, or unmanaged and left without human intervention?
- Housing
- Industry
- Agriculture



A Bureaucratic Tinderbox

- Forests can accumulate fuel on the forest floor.
- Natural fires normally burn off this fuel periodically.
- The prevailing policy of federal and state governments was aggressive fire suppression.
- Foresters better understand the role of fire than they once did, but historically poor mgt. decisions will take decades to undo.
- Unfortunately, environmental review procedures mandated by NEPA delay treatment



Source: <https://perc.org/2022/06/14/does-environmental-review-worsen-the-wildfire-crisis/>

A Contrast in Management

- In 2021, the Bootleg Fire in Oregon burned more than 400,000 acres
- Fire resilience differences were obvious as the fire moved from the Fremont-Winema National Forest to the Nature Conservancy's Sycan Marsh Preserve
 - The Nature Conservancy had managed the land through thinning and prescribed burns, resulting in survival of the trees.

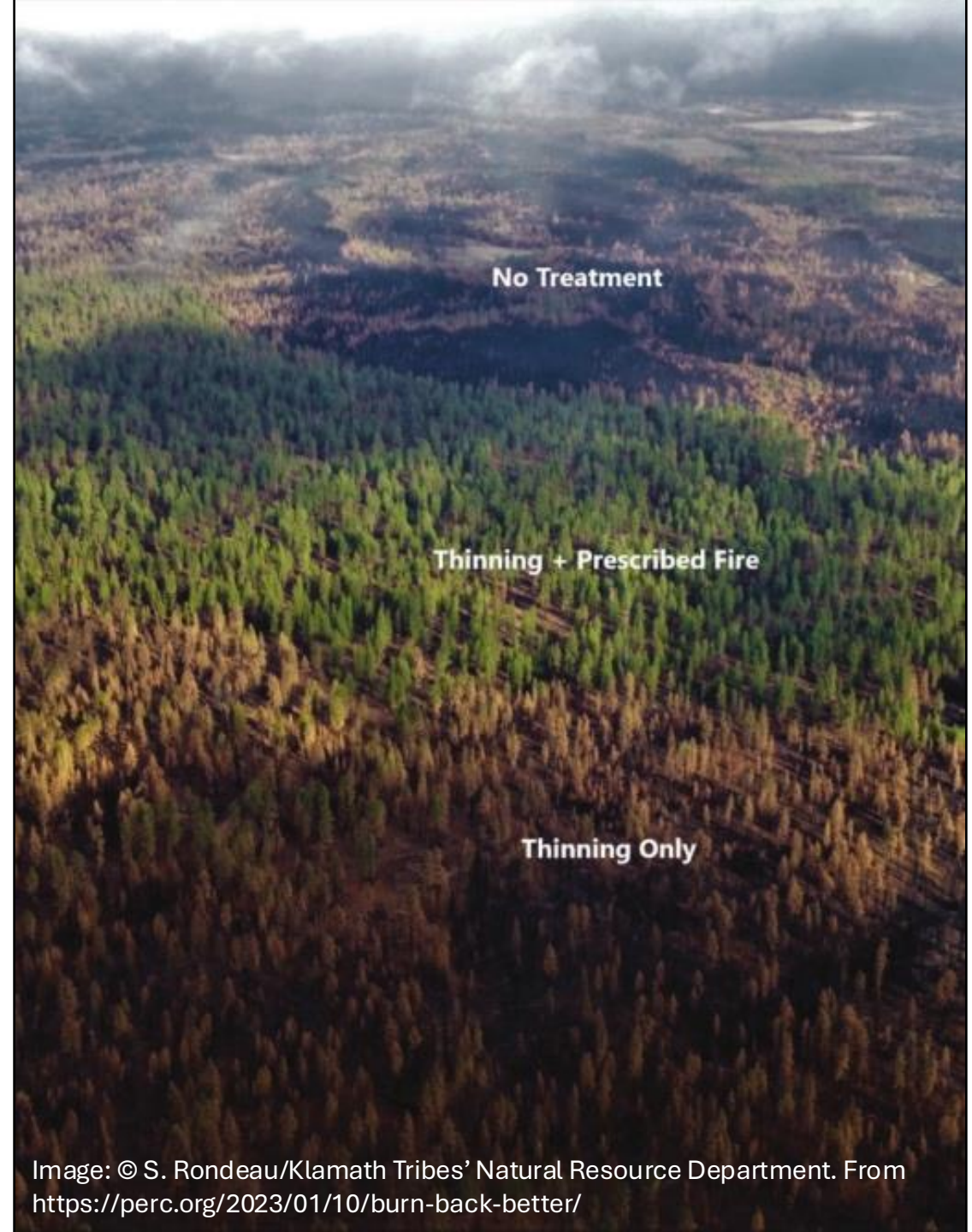


Image: © S. Rondeau/Klamath Tribes' Natural Resource Department. From <https://perc.org/2023/01/10/burn-back-better/>

A Contrast in Management

- The USFS reported in July 2025 that 63 million acres of the 193 million under their control faced a high or very high risk of wildfire.
- In fiscal 2024, only 4 million acres had been treated.
- Additionally, the Clean Air Act historically treated smoke from prescribed burns differently from smoke from wildfires, counting only smoke from prescribed burns against emissions limits.
 - In March, 2025, the new EPA administrator began revising this rule, and states have also started to loosen their restrictions.

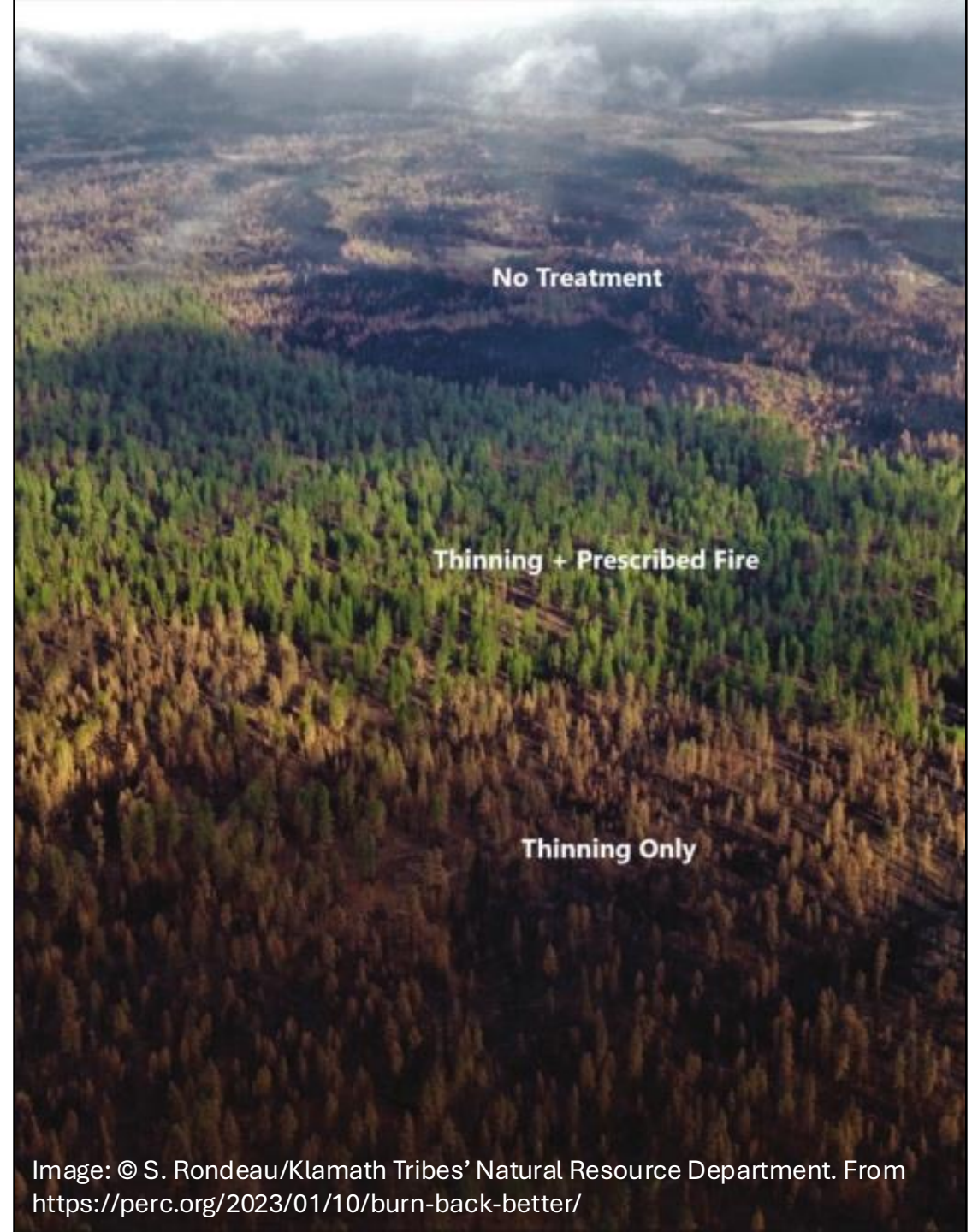


Image: © S. Rondeau/Klamath Tribes' Natural Resource Department. From <https://perc.org/2023/01/10/burn-back-better/>



Only Central Planners Can't Prevent Forest Fires

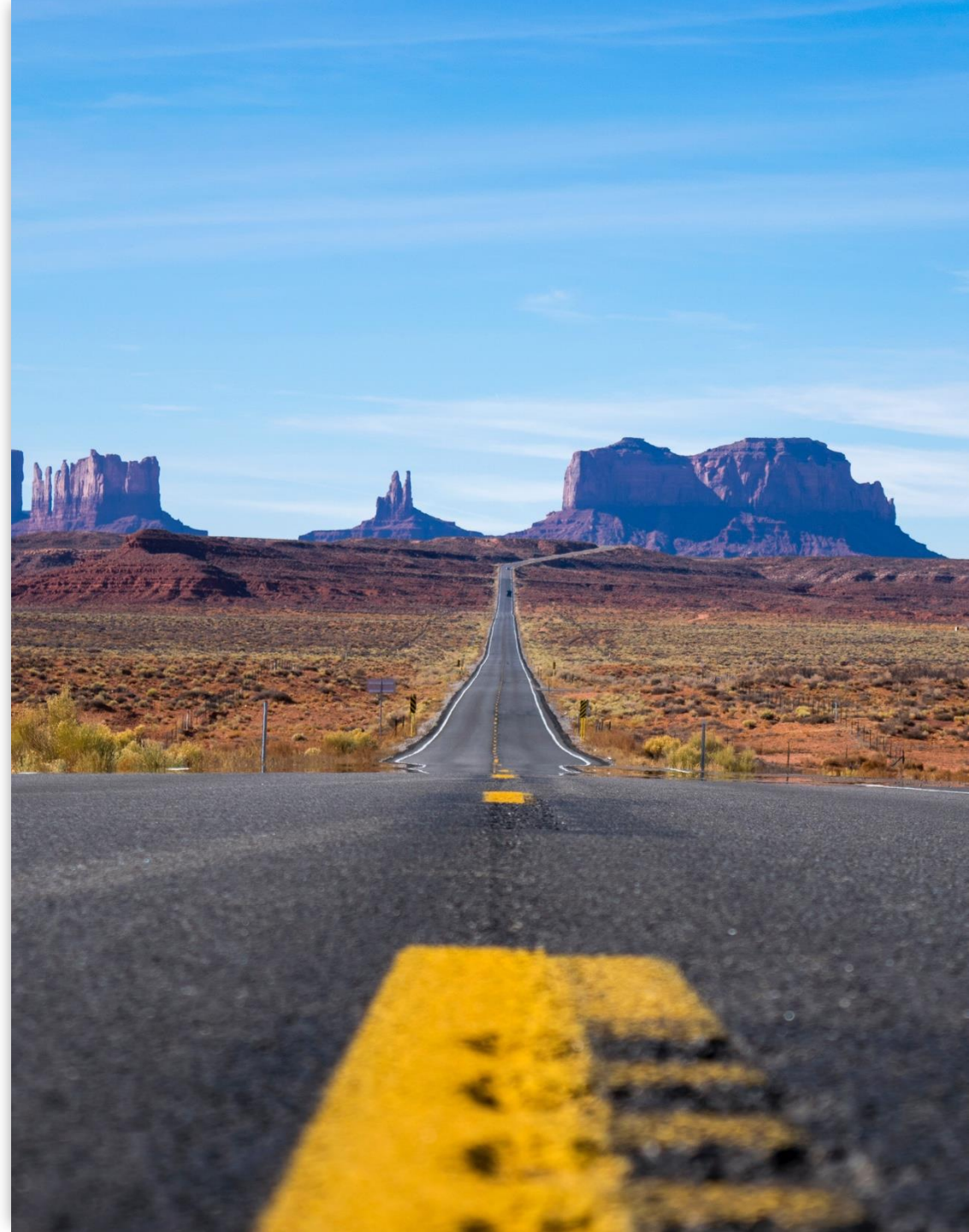
"[California] clears maybe 125,000 acres of brush from its 19 million acres of forest (plus another 14 million that are federally owned). The state requires multiple lengthy approvals for forest clearing projects and impedes property owners who want to fire-harden their homes."

-- Steven Greenhut, *Orange County Register*

(<https://www.ocregister.com/2025/01/24/os-angeles-wildfires-exposed-the-failings-of-californias-leadership/>)

Originary Interest

- *Originary interest*: “the ratio of the value assigned to want-satisfaction in the immediate future and the value assigned to want-satisfaction in remoter periods of the future.” [Mises, *Human Action* (1998), 523]
- Policies with effects across time imply an interest rate that may not correspond to this originary interest.
 - What should that interest rate be?



Politically Determined Discount Rates

Yucca Mountain, Nevada:

- \$9 billion invested in a repository for unspent nuclear fuel
- 2004: A U.S. Court of Appeals ruled that the protections extending for 10,000 years were too short.
- “A National Academy of Sciences panel concluded that in 270,000 years, a person standing just outside the fence could be exposed to sixty times the allowable radiation dose. ...As a result, the panel recommended that the safety standard be extended for 300,000 years.”

-- Viscusi, Harrington, and Sappington, *Economics of Regulation and Antitrust*, 5th ed., p. 782.

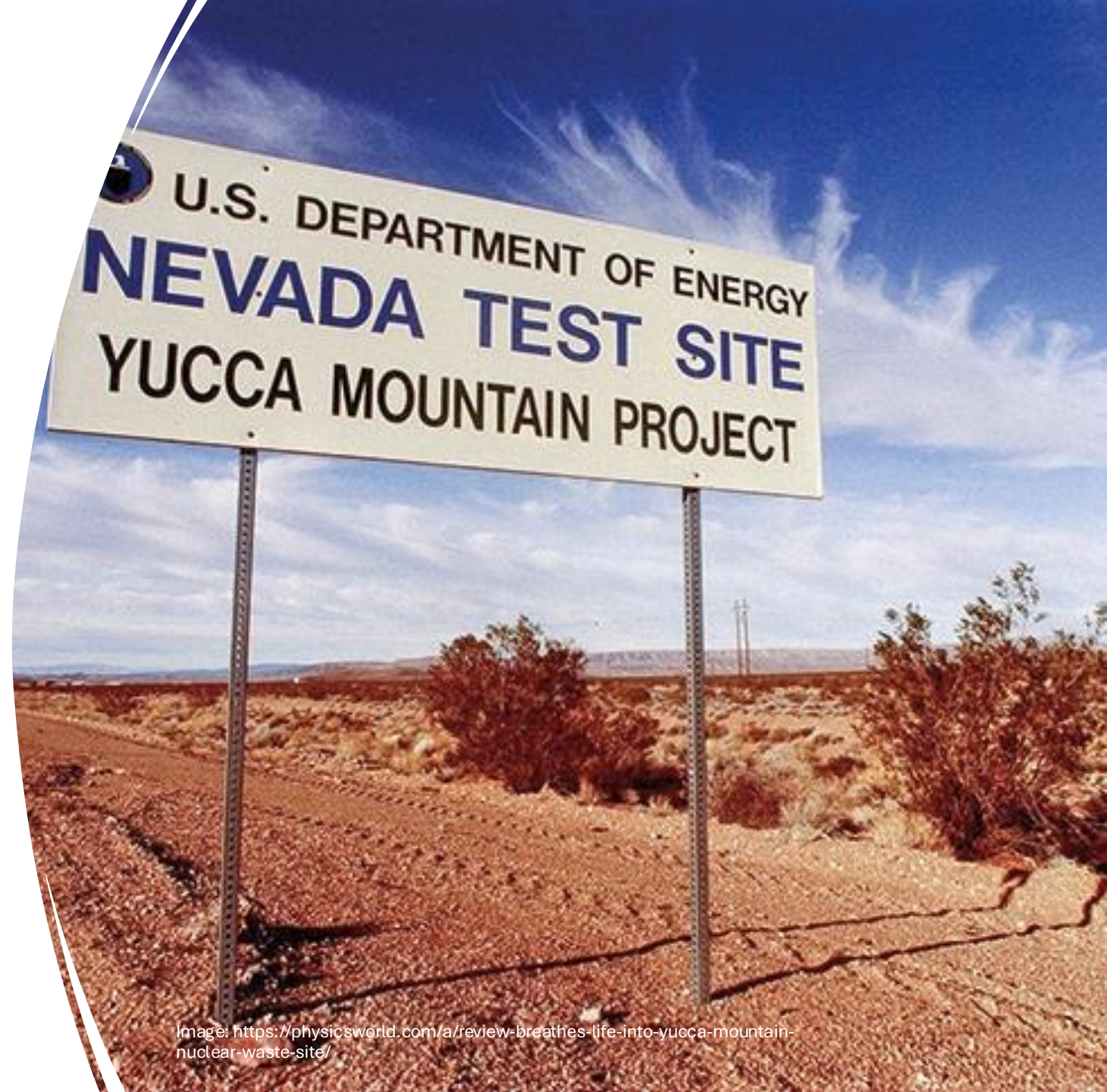


Image: <https://physicsworld.com/a/review-breathes-life-into-yucca-mountain-nuclear-waste-site/>

Politically Determined Discount Rates

What is the present value of \$100 to be received 5 years in the future, assuming a 5% discount rate?

$$PV = \$100 / (1.05)^5 = \$100 / 1.2763 = \$78.35$$

What is the present value of \$100 to be received 270,000 years from now, assuming a 3% discount rate?

$$\mathbf{\$100 / (1.03)^{270,000}}$$

$$\text{\$100}/(1.03)^{270,000} =$$

[illegible]

Politically Determined Discount Rates

Yucca Mountain, Nevada:

- “Instead of having only one person exposed to radiation at the Yucca Mountain fence, suppose we crammed 300 million people up against the fence.
- “Also assume a worst case of radiation exposure that leads all of them to experience fatal doses of cancer.”
- “On a discounted basis, the result of having 300 million people exposed to risk at the site would be the equivalent of a one in 100,000 chance of cancer today for a single person.”

-- Viscusi, Harrington, and Sappington, *Economics of Regulation and Antitrust*, 5th ed., p. 782.

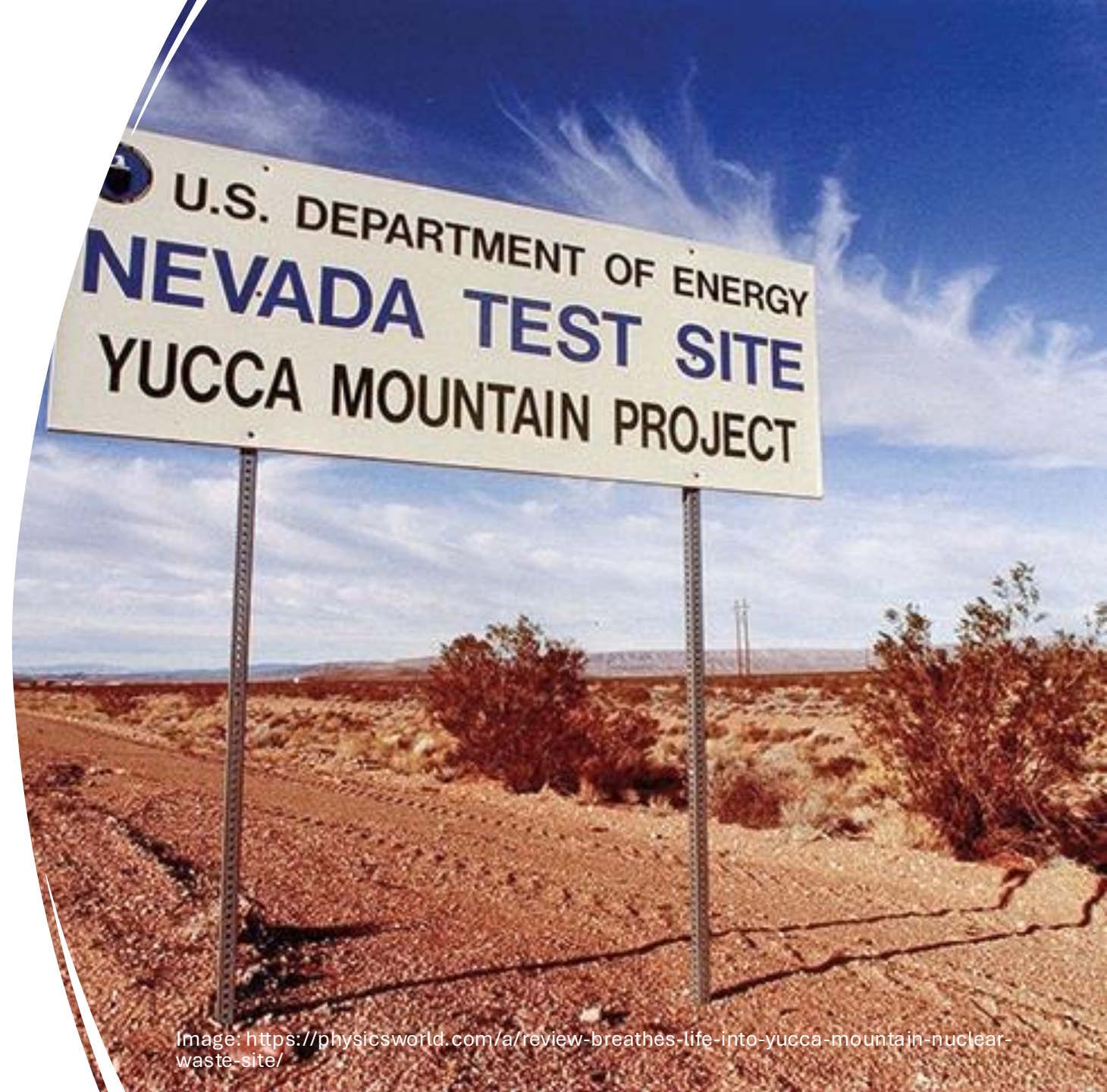


Image: <https://physicsworld.com/a/review-breathes-life-into-yucca-mountain-nuclear-waste-site/>

Politically Determined Discount Rates

The *Stern Review on the Economics of Climate Change*, an influential 2006 study from the British government, employed a discount rate of 0.1% per year.

- This weights the future more heavily than is typical in markets.

“Suppose that scientists discover a wrinkle in the climate system that will cause damages equal to 0.1 percent of net consumption starting in 2200 and continuing at that rate forever after. How large a one-time investment would be justified today to remove the wrinkle that starts only after *two centuries*? Using the methodology of the Review, the answer is that we should pay up to 56 percent of one year’s world consumption today to remove the wrinkle. . . . In other words, it is worth a one-time consumption hit of approximately \$30,000 billion today to fix a tiny problem that begins in 2200.”
Nordhaus, William D. 2007. “A Review of the *Stern Review on the Economics of Climate Change*.” *Journal of Economic Literature* 45, no. 3 (September): 686–702.

The Economics of Climate Change

The Stern Review



NICHOLAS STERN

What About Advanced Computing Power?

REVISITING THE COMPUTATION PROBLEM

PAUL F. CUIK AND LUCAS M. ENGELHARDT*

JEL CLASSIFICATION: B51, B53, C63, P20

ABSTRACT: In 2013, Engelhardt (2013) calculated that the combined power of the top five hundred supercomputers would take approximately 10.5 quintillion years to compute the distribution of eighty thousand heterogeneous goods among six billion consumers, posing a serious practical challenge to the implementation of computerized central planning. Allin Cottrell (2021) calls into question Engelhardt's assertion, noting that the algorithm used by Engelhardt not only scales poorly but is not even valid for the problem Engelhardt posed. Cottrell offers an iterative algorithm that a one-petaflop machine could use to solve the distribution problem in about five minutes. We correct errors in both Engelhardt and Cottrell, and we offer a way to incorporate production into the problem. The result: modern supercomputers are still not powerful enough to solve central planning's computation problem.

Additional Resources



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