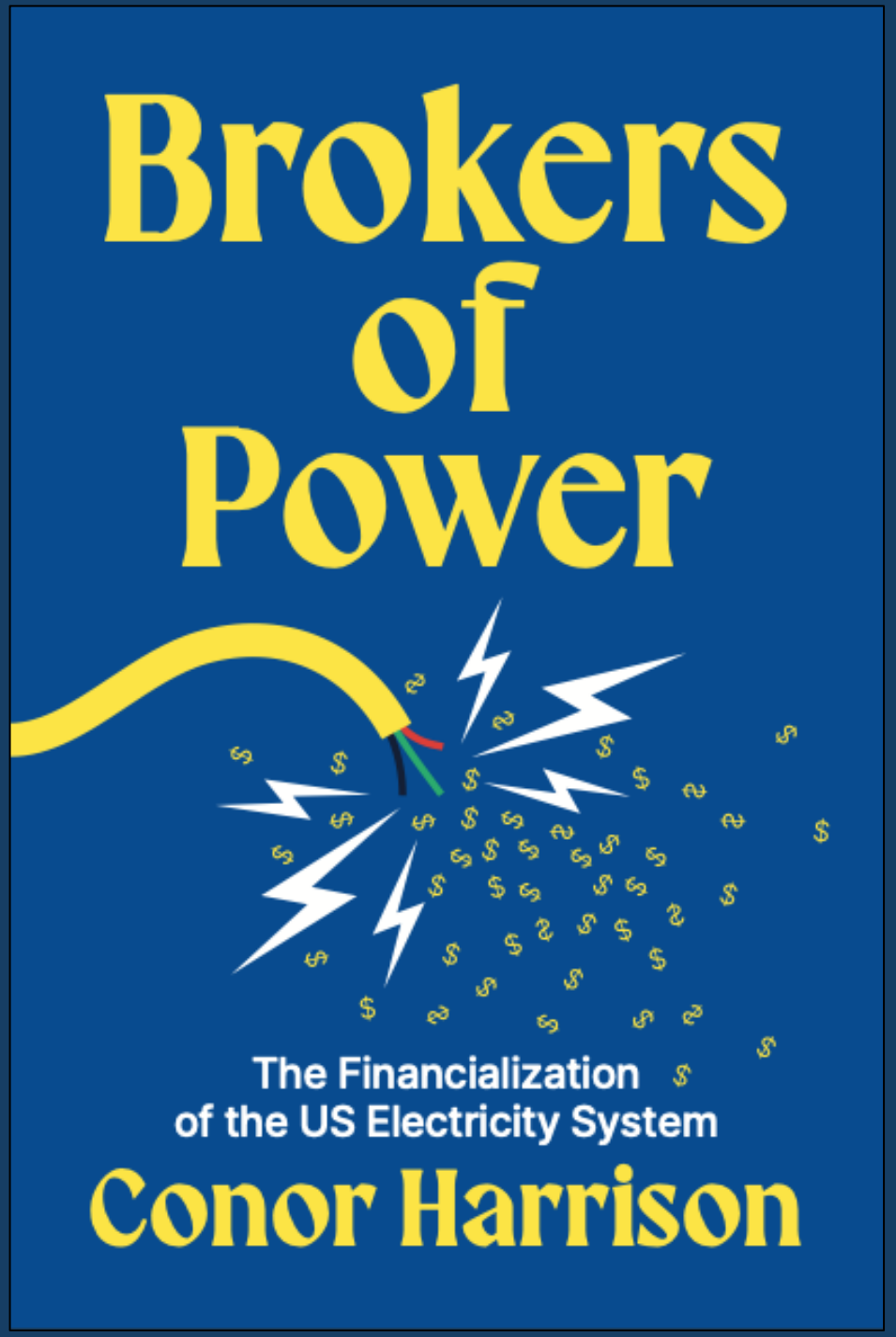
Brokers of Power

The Financialization of the U.S. Electricity System

Conor Harrison
University of South Carolina
October 27, 2026

How finance is reshaping the institutions, infrastructures, and political economy of the U.S. electricity system



Winter Storm Uri

- February 14-19, 2021
- Nearly 250 deaths, $195 billion in damages
- Only 60% of electricity capacity available
- Millions without power

Source: Houston Public Media

Profiting during an outage?

- $46 billion of power sold in one week during Uri
  - 5x all power sold in 2020!
- Electricity trading, sure
- But also through generation?

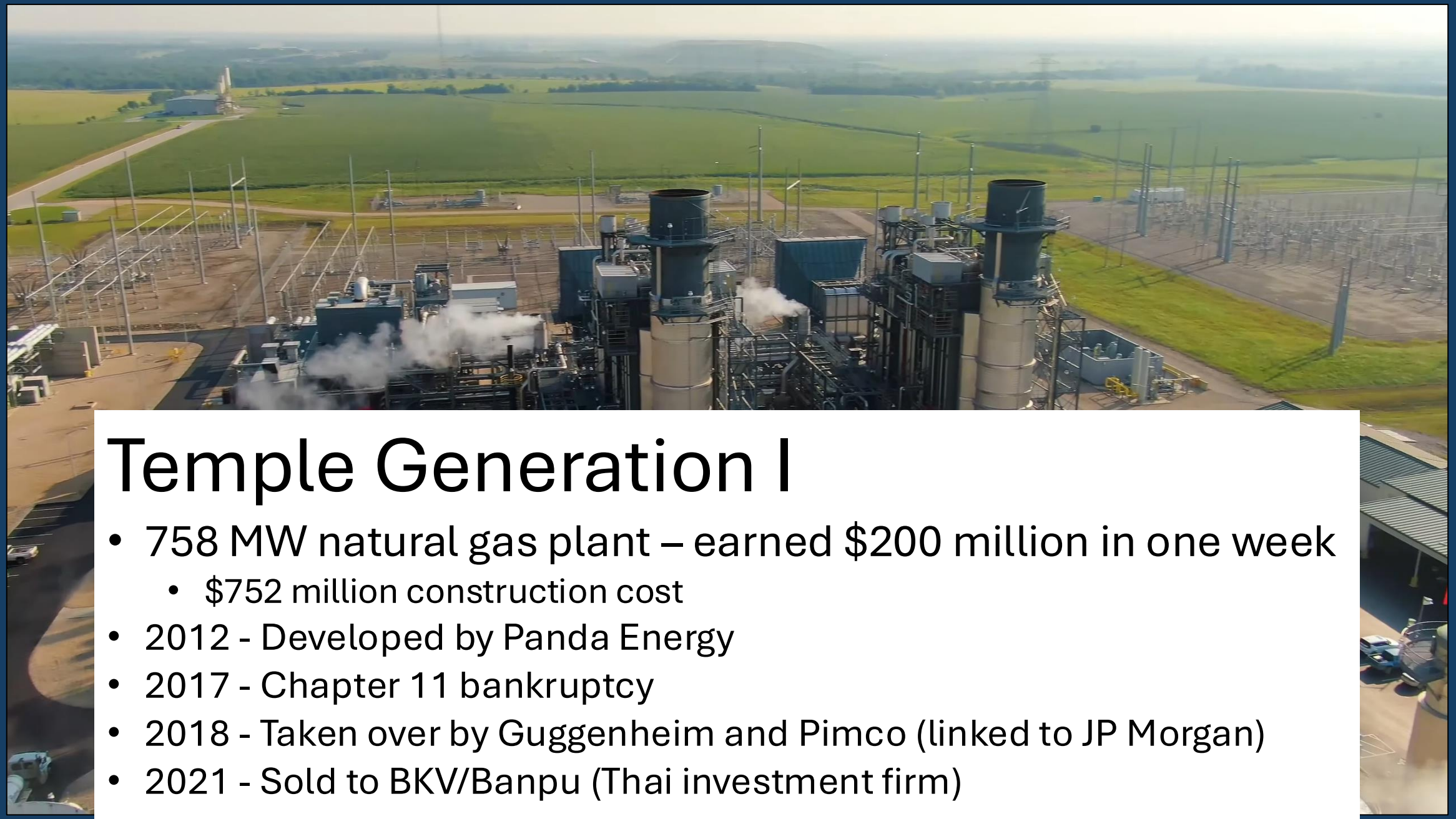
Wall Street Made Huge Profits Off Deep Freeze, at Least on Paper

- Goldman, Morgan Stanley, BofA reap gains from power, gas
- Profits uncertain because of market mayhem after freeze

Snow covers the ground in Waco, Texas, on Feb. 17. *Photographer: Matthew Busch/AFP/Getty Images*

By Sridhar Natarajan, Naureen S Malik, and Donal Griffin

March 5, 2021 at 9:05 AM EST



Temple Generation I

- 758 MW natural gas plant – earned $200 million in one week
  - $752 million construction cost
- 2012 - Developed by Panda Energy
- 2017 - Chapter 11 bankruptcy
- 2018 - Taken over by Guggenheim and Pimco (linked to JP Morgan)
- 2021 - Sold to BKV/Banpu (Thai investment firm)

Finance and the changing U.S. electricity system

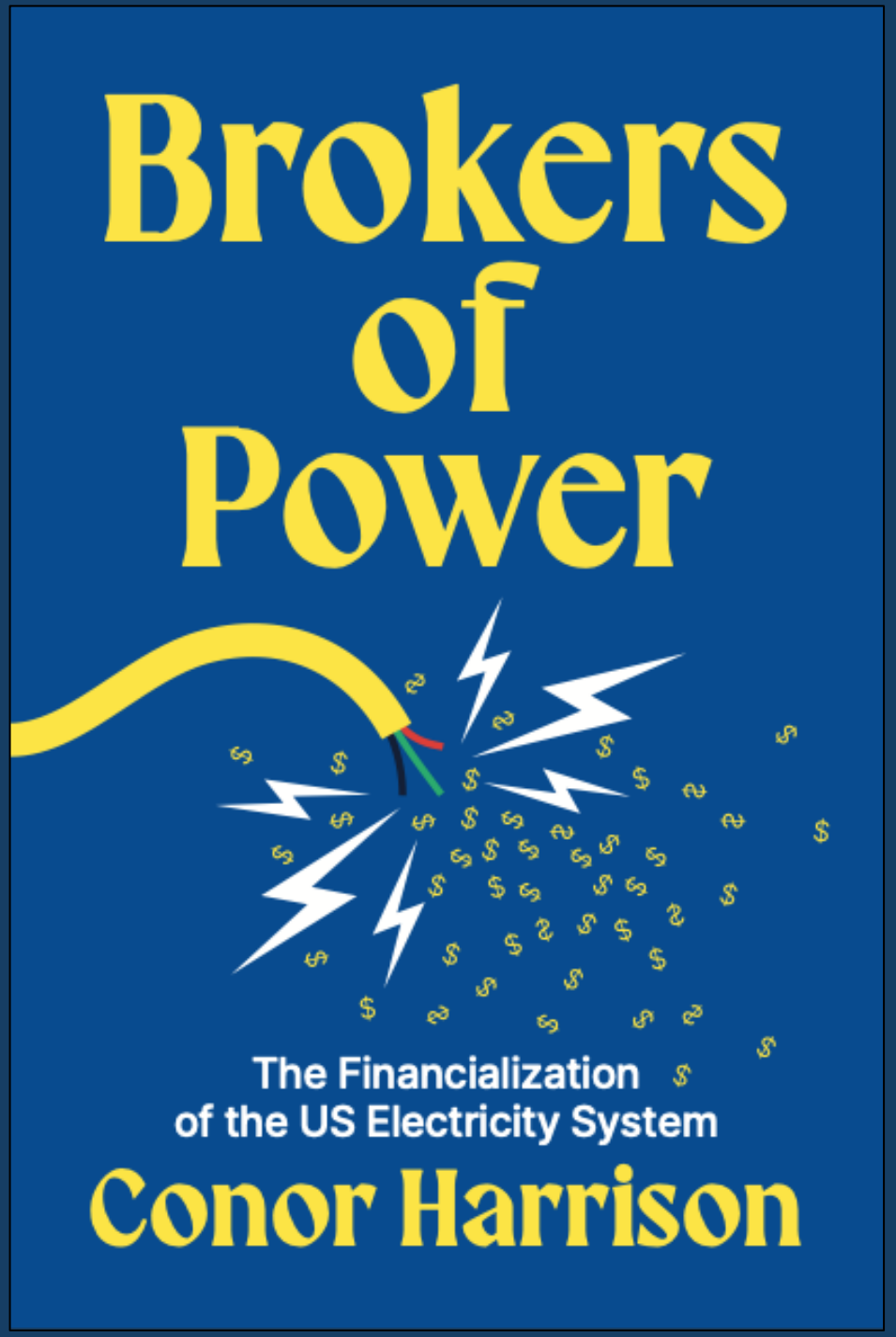
- Financial firms trading electricity
- Financial firms owning and operating power plants
- Financial firms determining which types of plants are getting built

It is increasingly the financial sector and financial imperatives that are brokering the future of the electricity system.

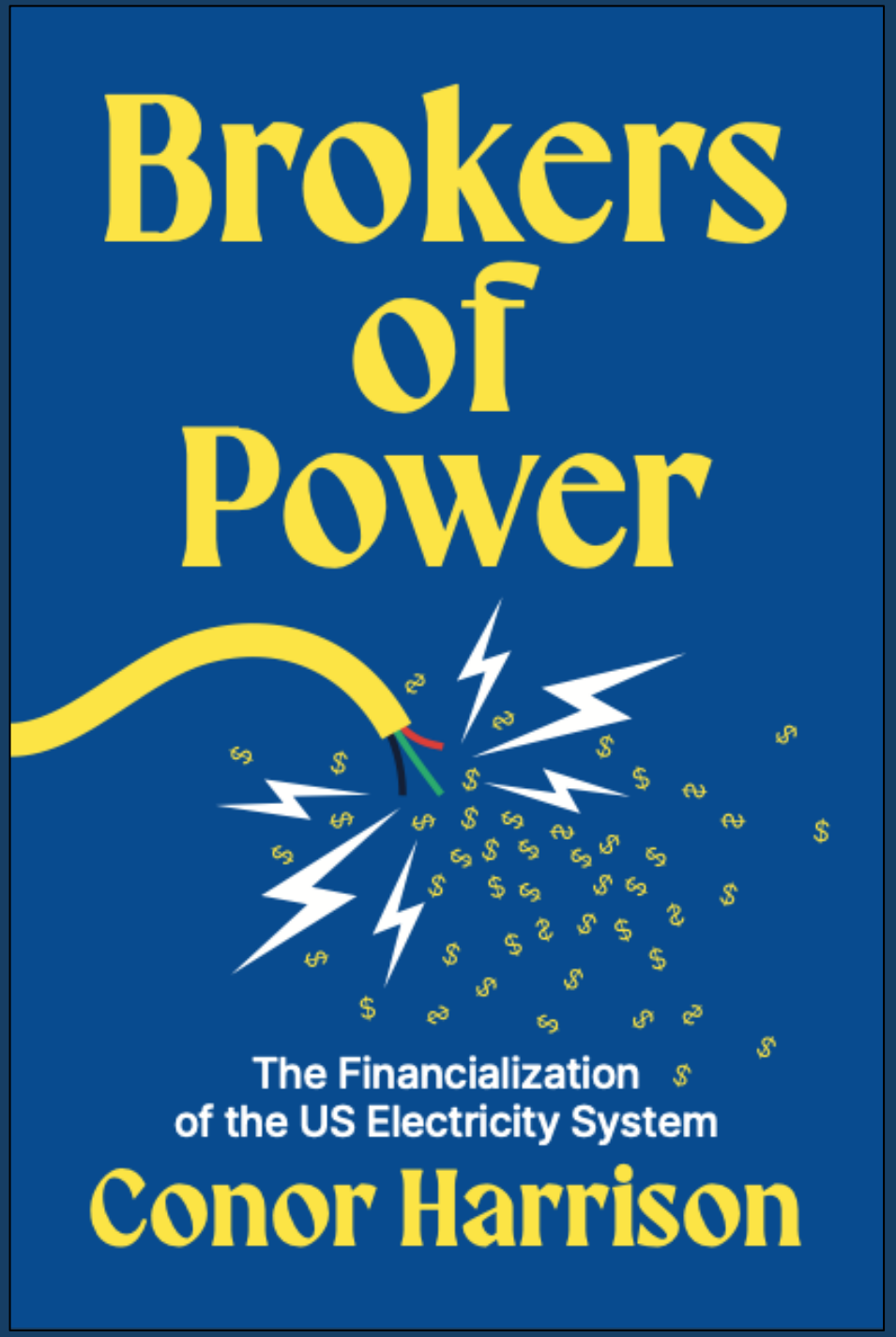
Continued investment in fossil fuel generation?

Building new wind and solar?

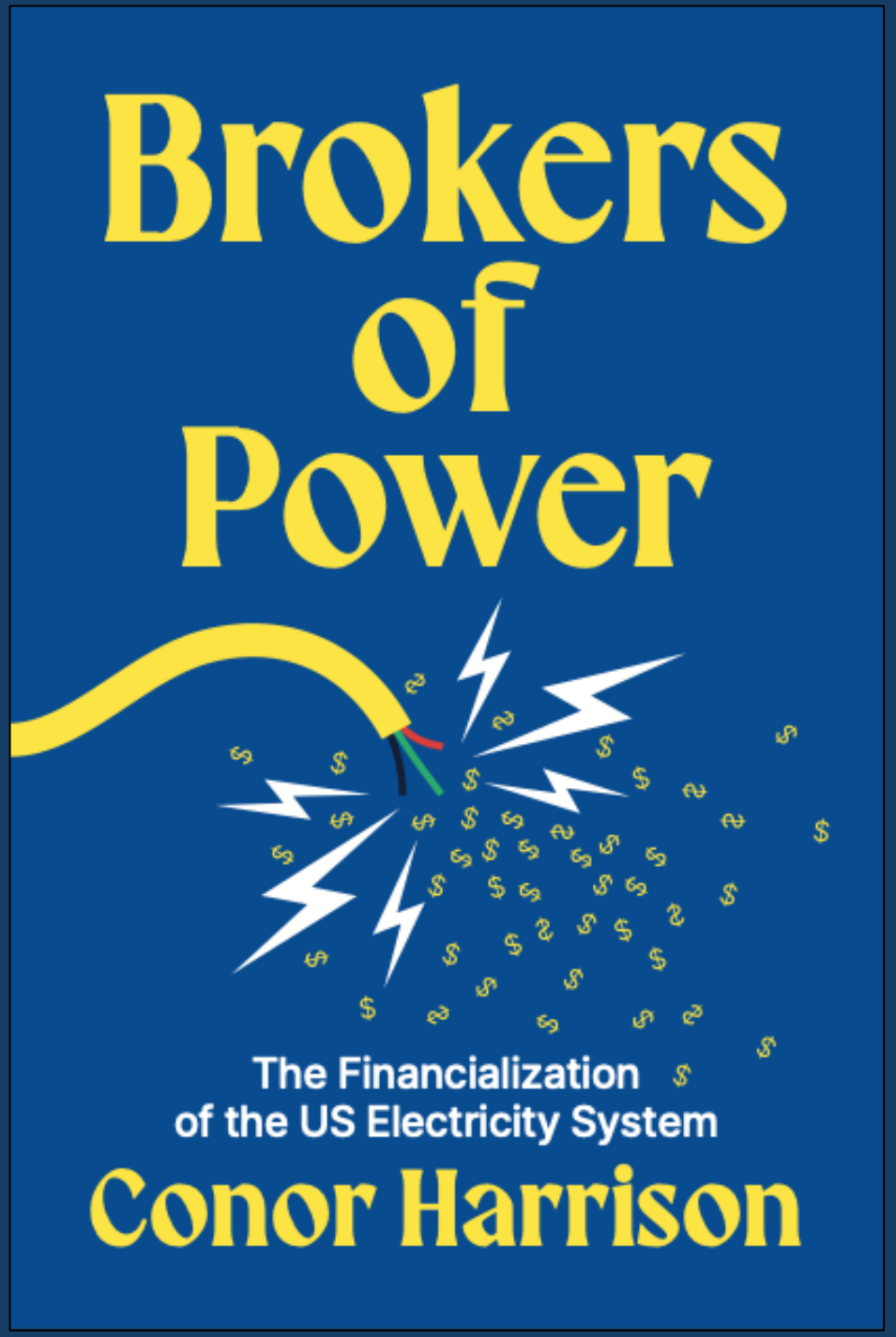
Shutting down a coal power plant?



1. The Energy Convergence: Electricity Deregulation, Merchant Utilities, and Equities Analysts
2. Investor-Owned Utilities: Accumulation Strategies and Asset Managers
3. Coal Plant Closures: Securitization and Investment Banks
4. Making Solar Assets: Financial Modeling and North Carolina's Solar Boom
5. **Riding the Solar Coaster: Private Equity in the US Solar Industry**



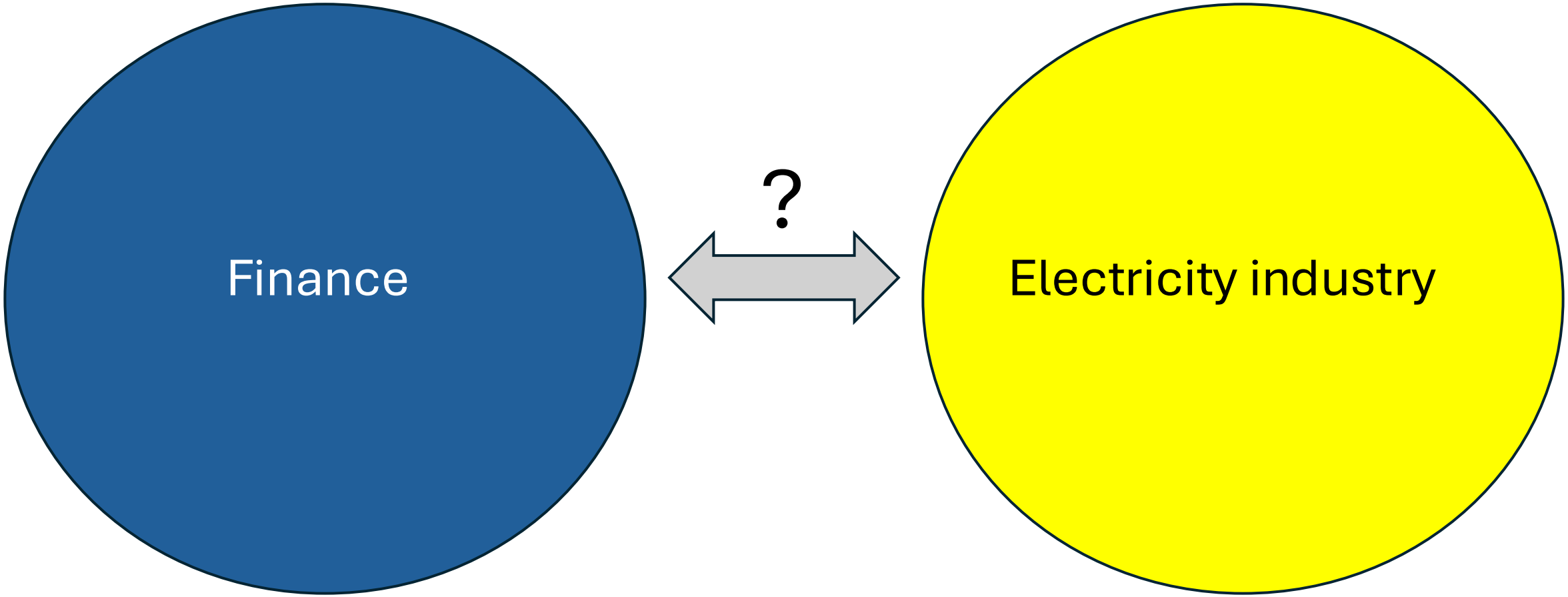
1. What is the relationship between the financial and electricity sectors?
2. How did I conduct the research for this book?
3. Brief overview of the U.S. electricity system
4. Case study: Riding the solar coaster: Private equity investment in the solar industry

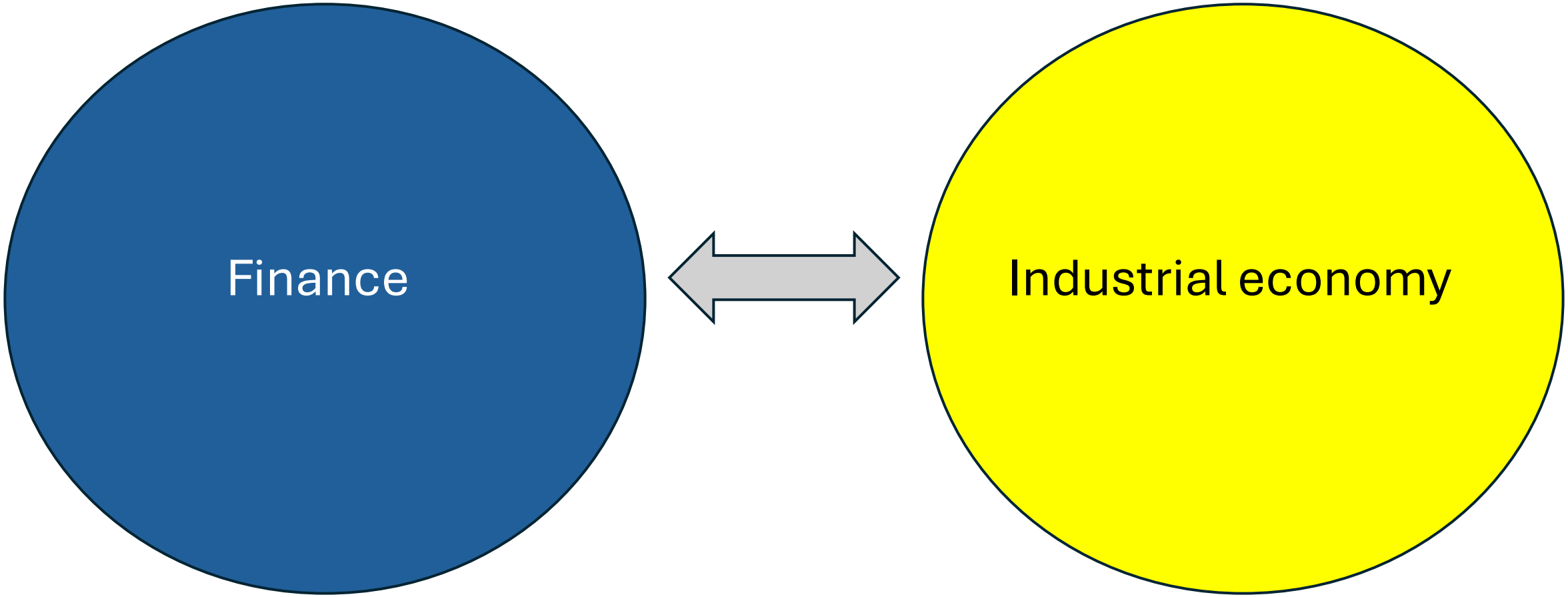


“Financialization”

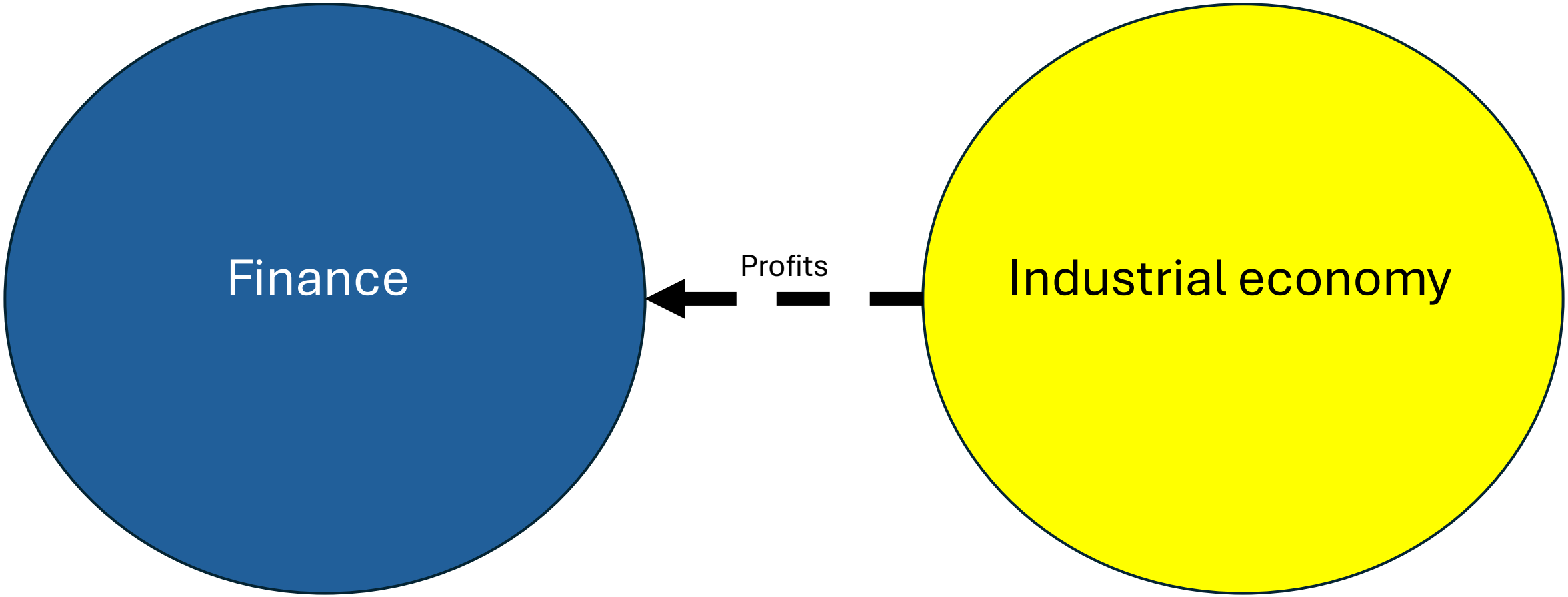
1. Growing proportion of profits attributed to financial firms rather than the ‘real’ economy (Krippner 2005)
2. Financialization of everyday life (Langley 2010)
3. Growing using of ”financial models, instruments, and logic … as a way to reorganize companies and extract wealth” (Souleles 2019: 4)

1. What is the relationship between the financial and electricity sectors?




Finance
Industrial economy

‘New Finance Capital’ (Maher and Aquanno 2022; 2024)



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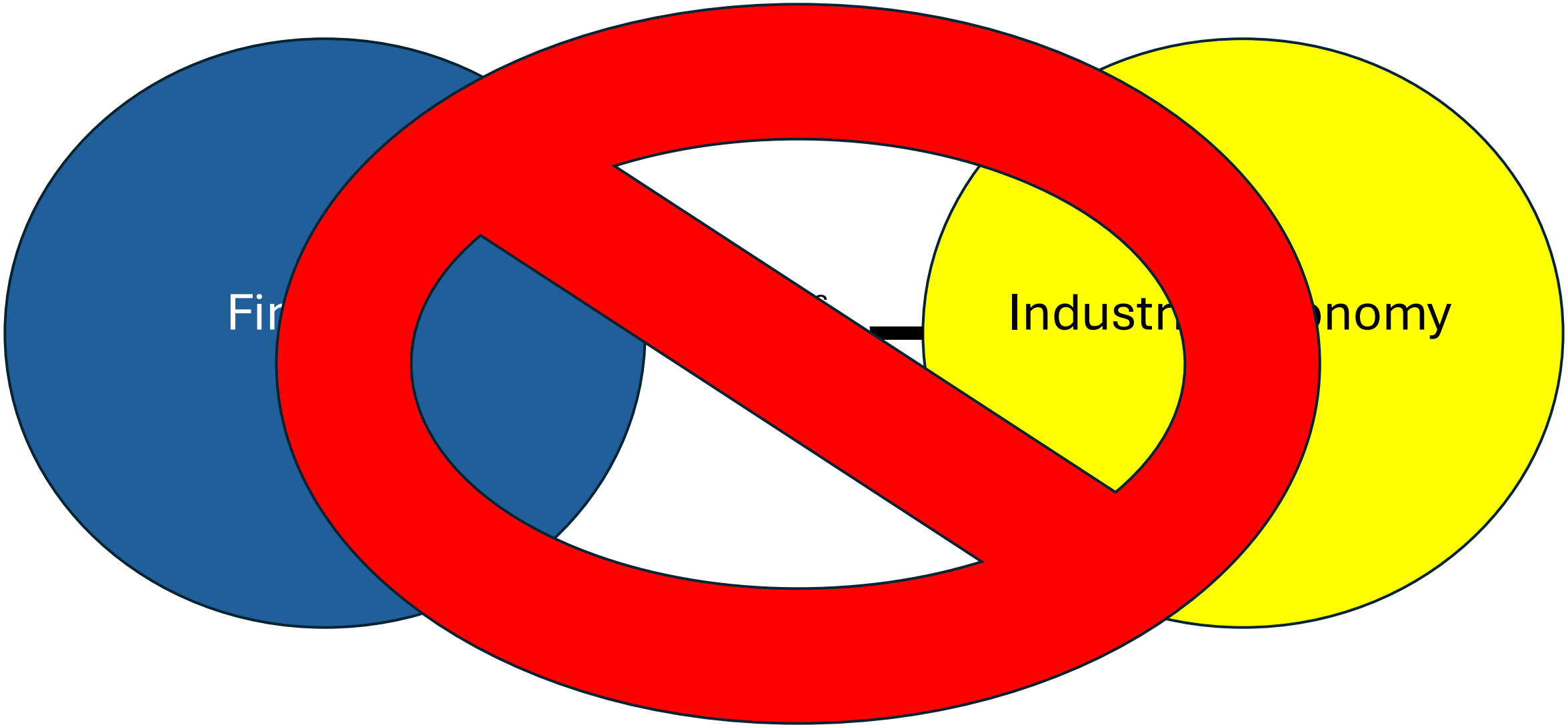

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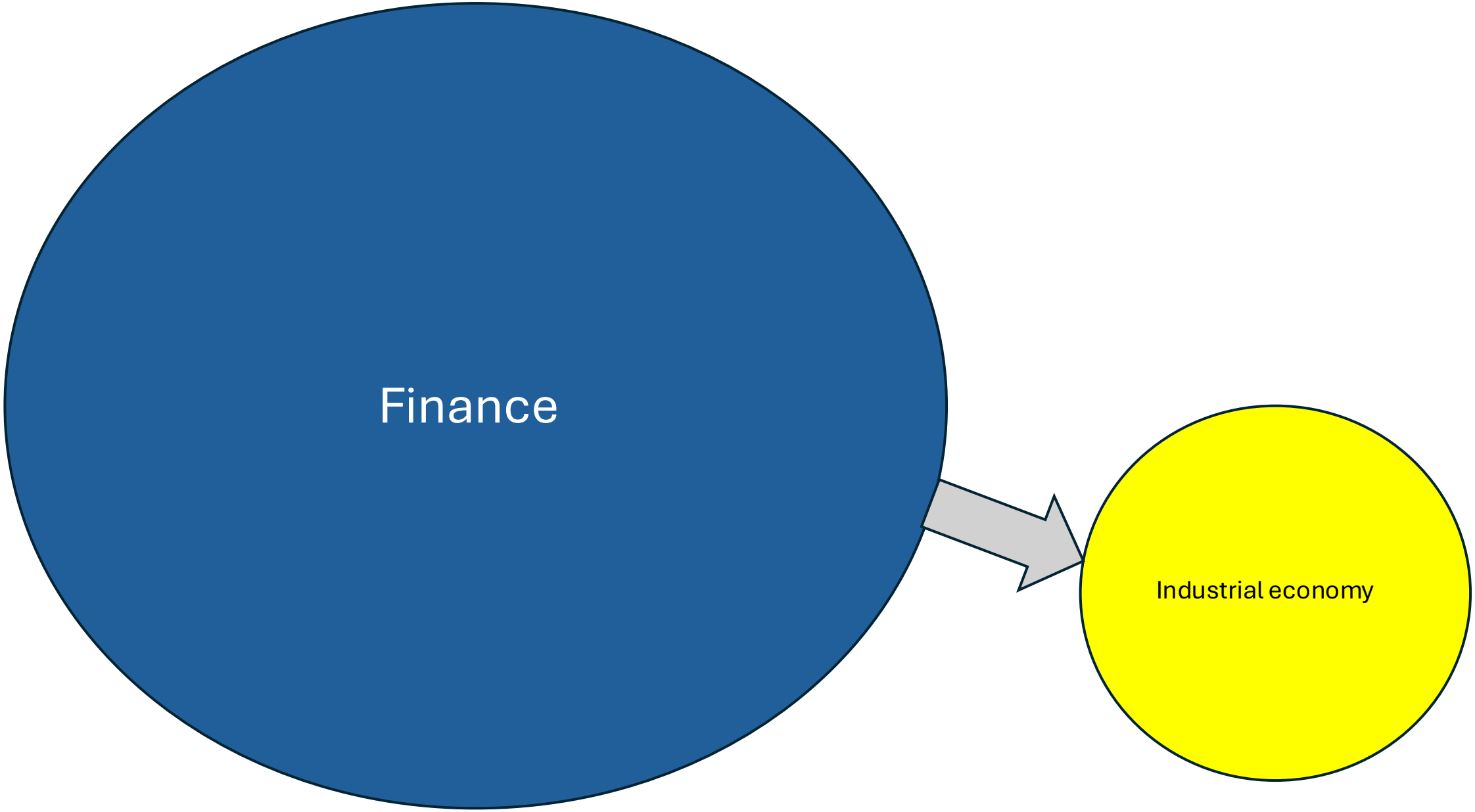

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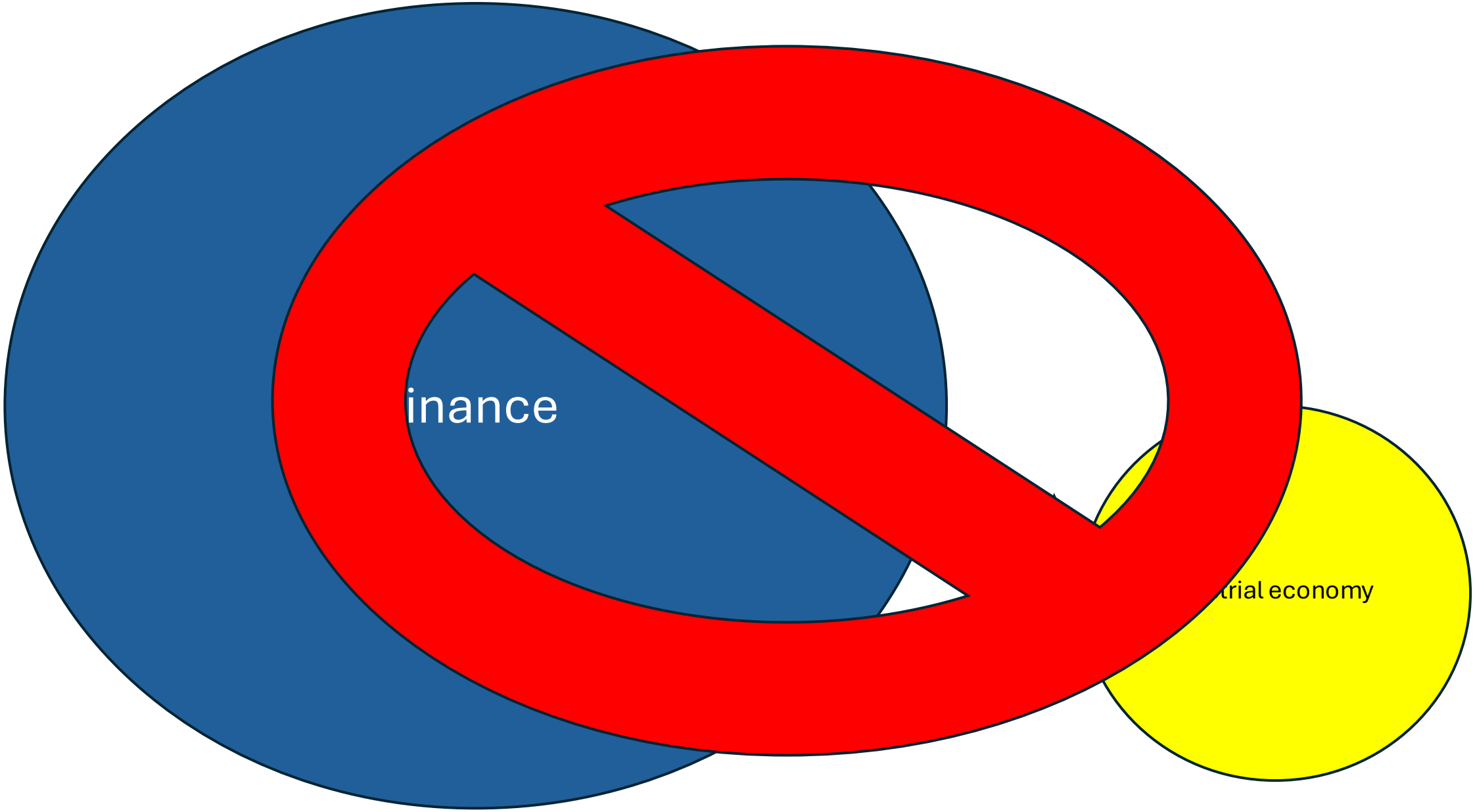
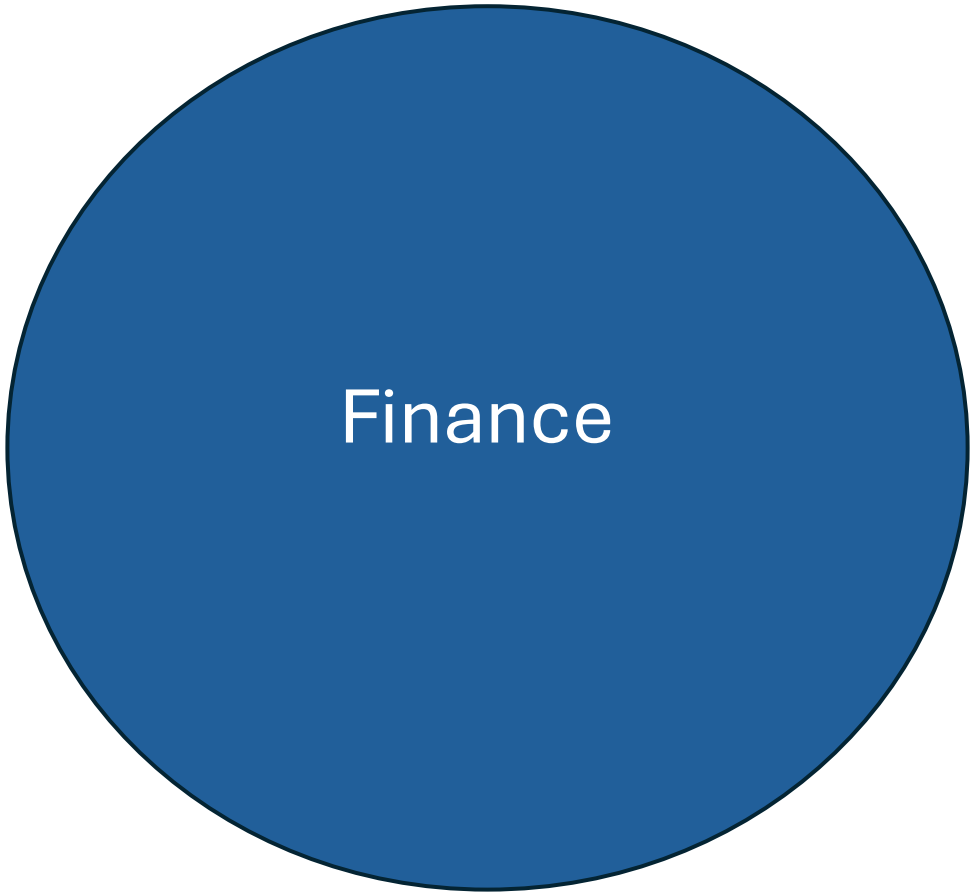
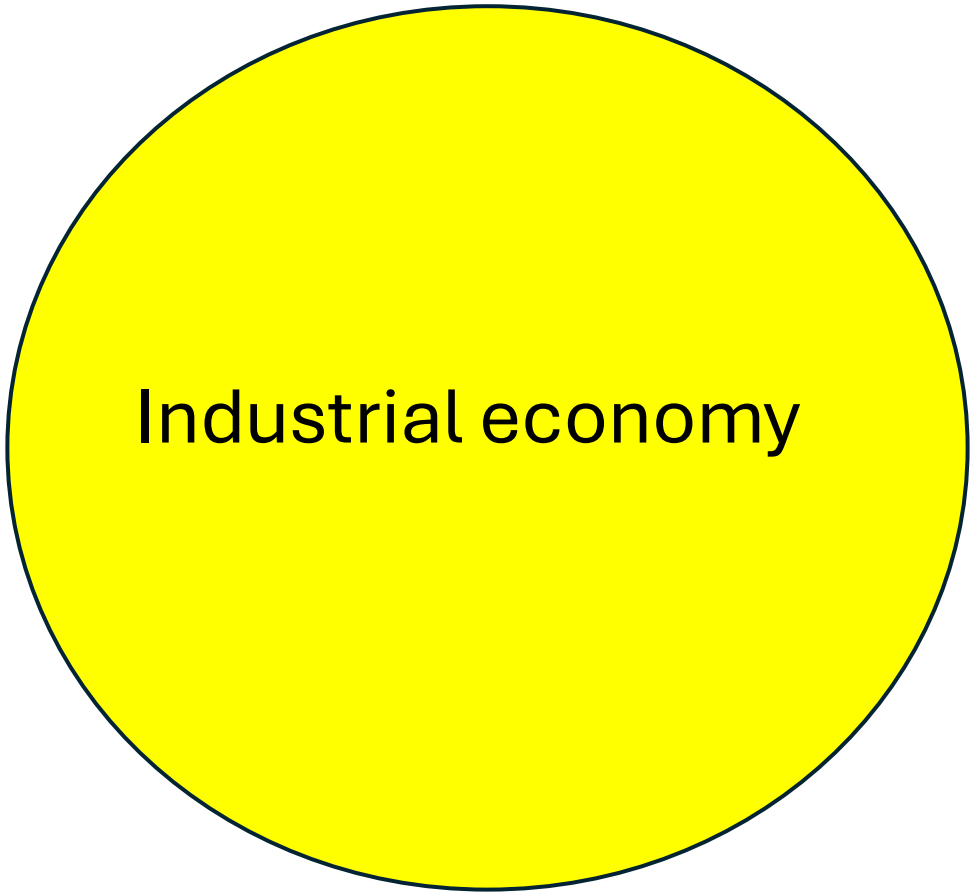



Finance


Industrial economy

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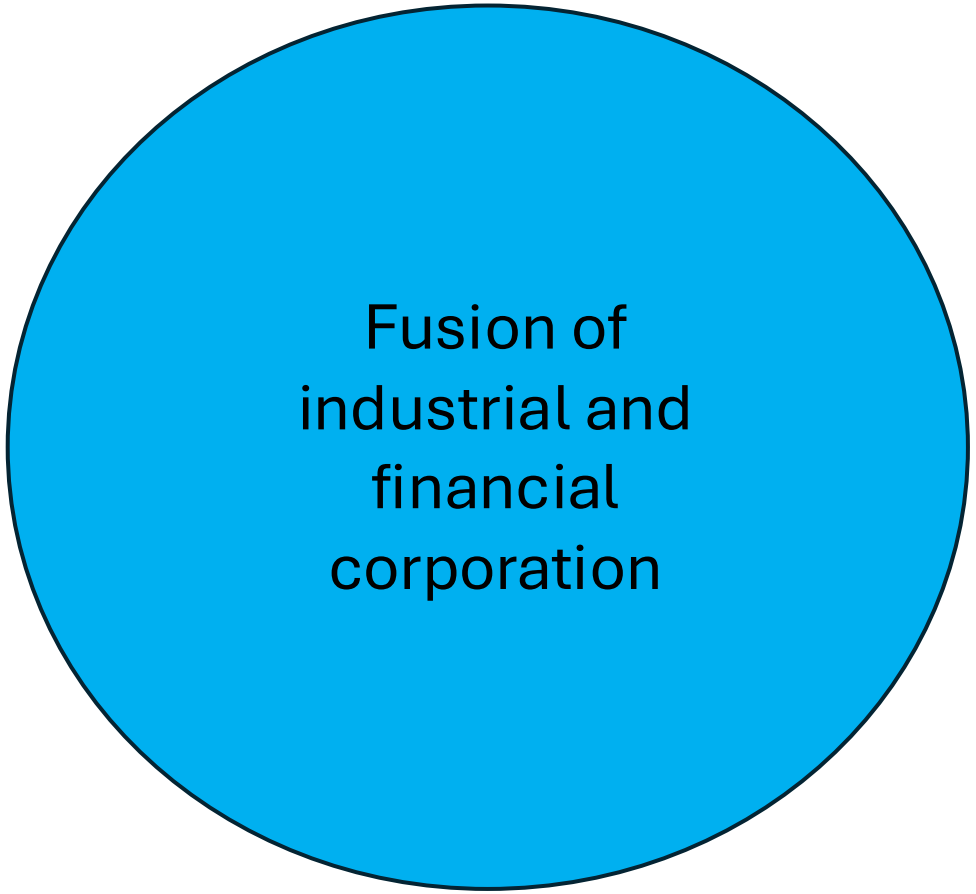
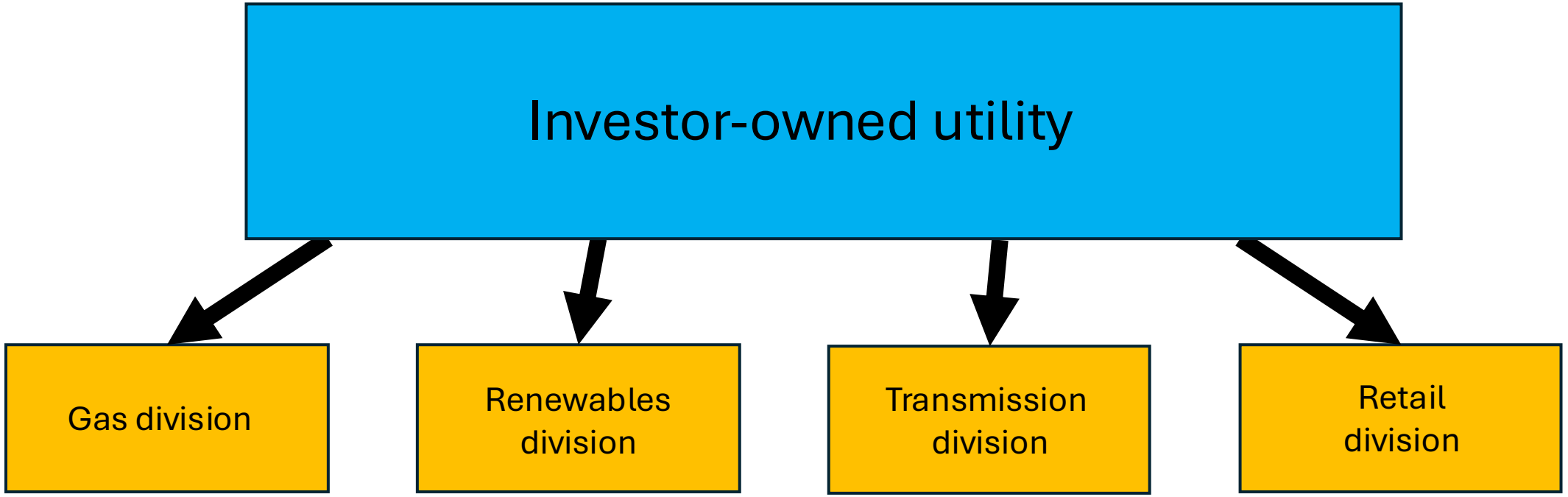
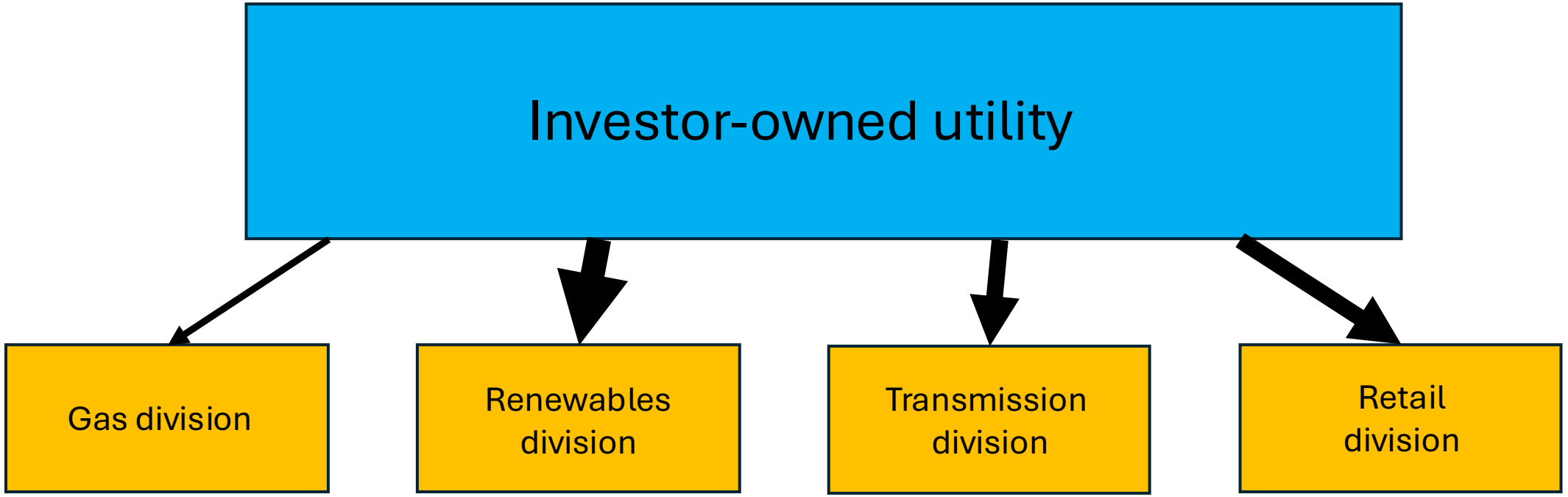
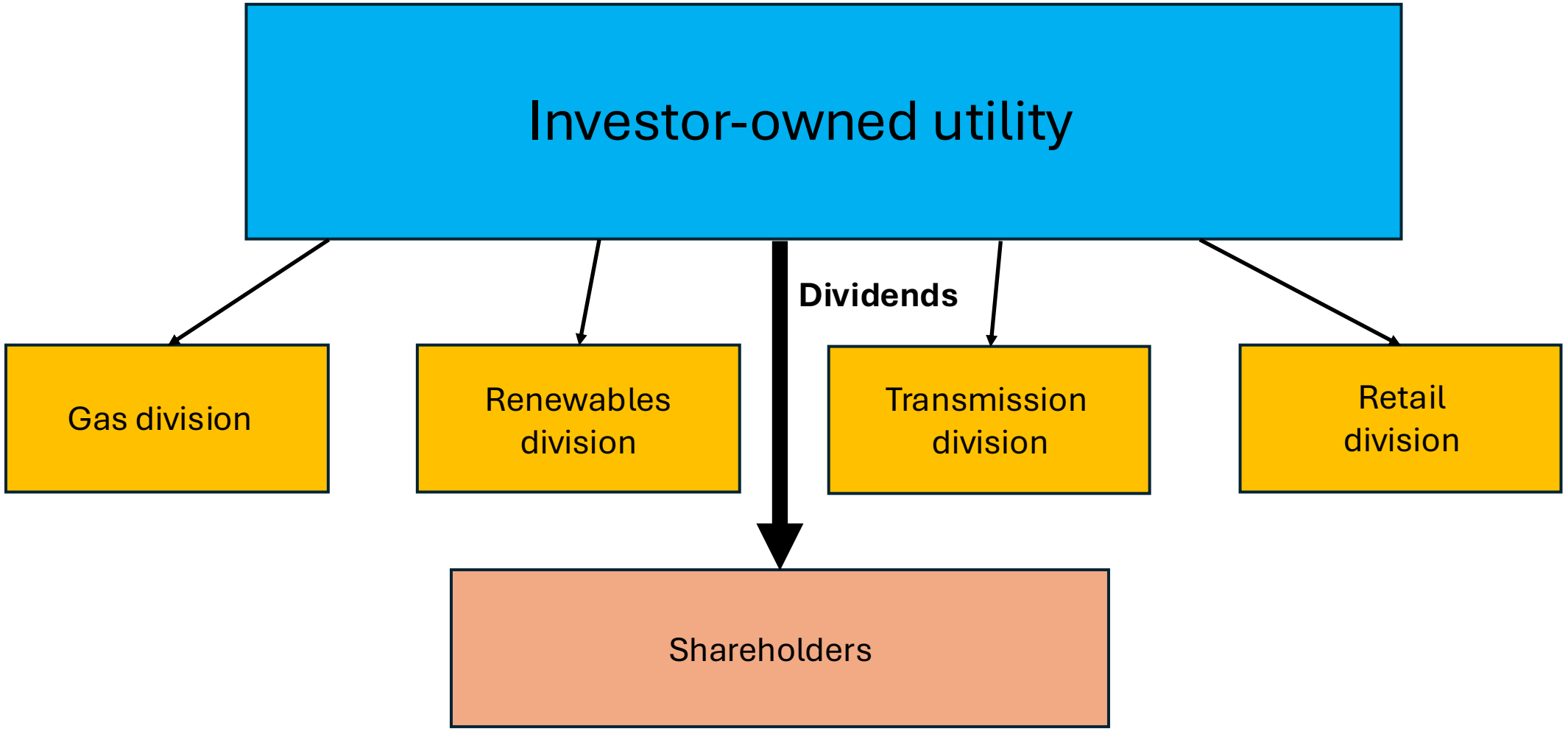


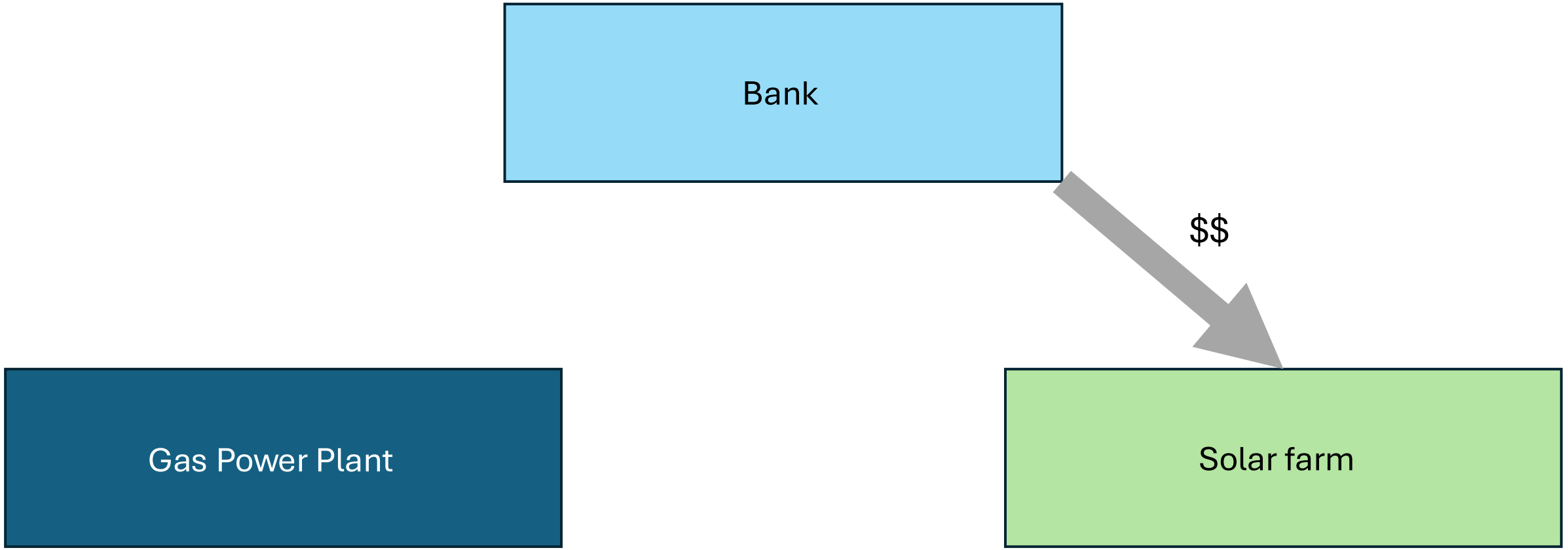
1. Financial industry has increased its ownership and control of ‘non-financial’ corporations
2. ‘Non-financial’ corporations remade in the image of finance

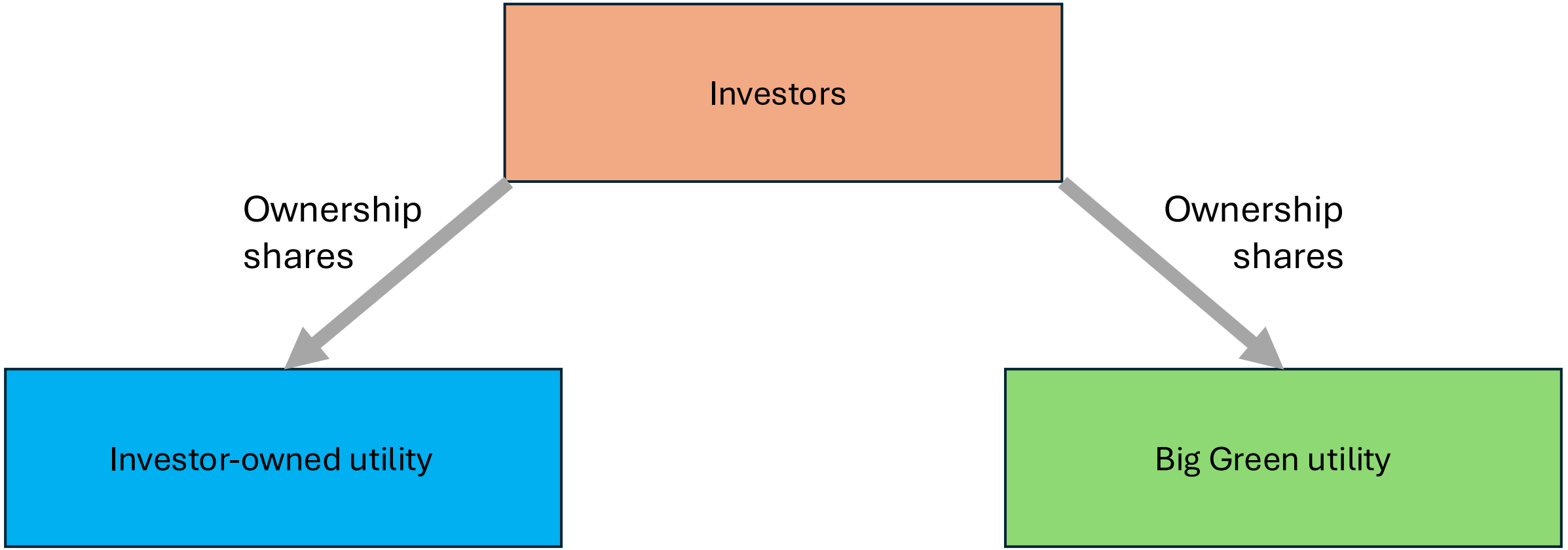
How could finance decarbonize the grid?

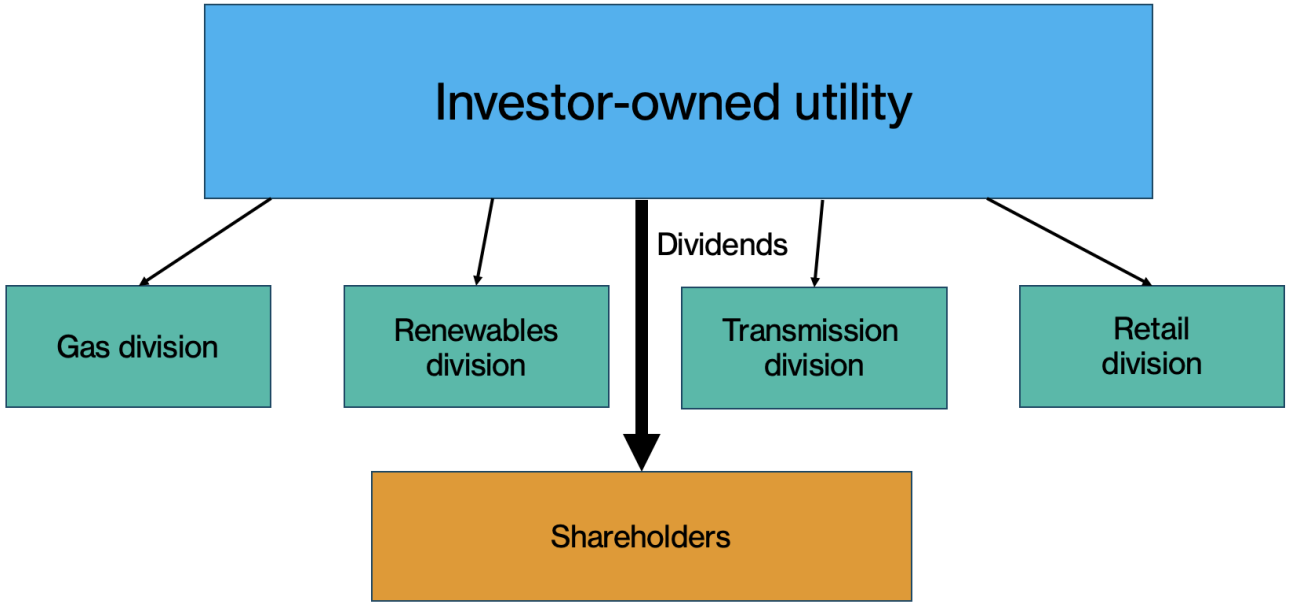

Investor-owned utility
Gas division
Renewables division
Transmission division
Retail division


Investor-owned utility
Gas division
Renewables division
Transmission division
Retail division


Investor-owned utility
Gas division
Renewables division
Dividends
Transmission division
Retail division
Shareholders

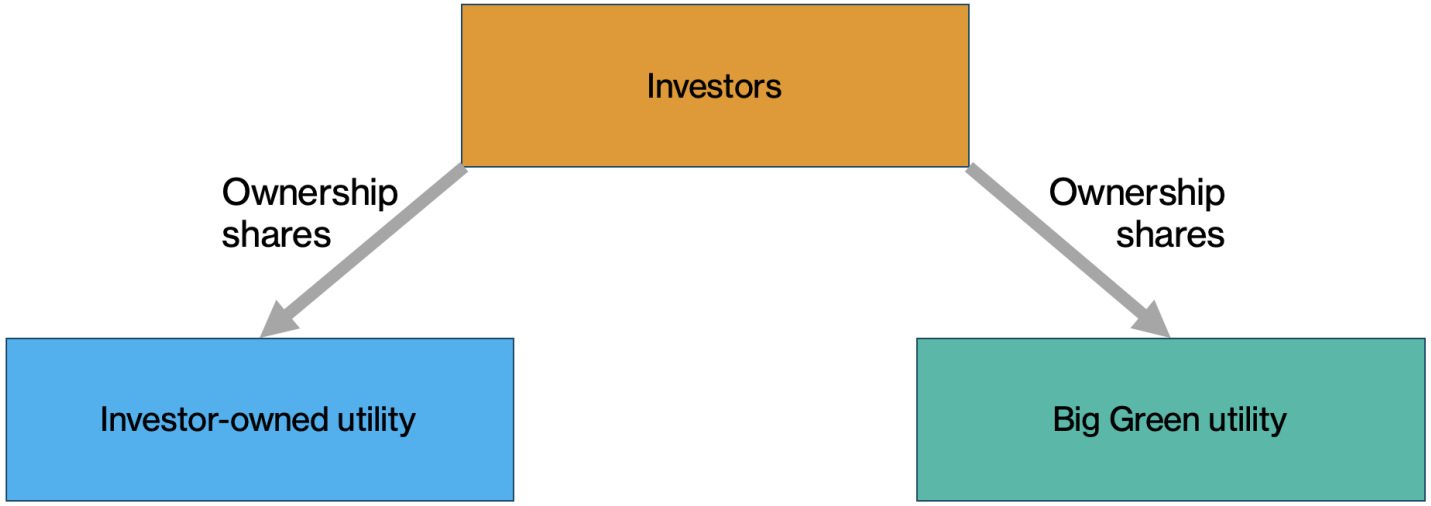

Bank
$$
Gas Power Plant
Solar farm


Investors
Ownership shares
Ownership shares
Investor-owned utility
Big Green utility



What are the financial models and metrics used to guide investment decisions *internally*?

What models and valuation methods are used to guide investor decisions?



2. How did I conduct the research for this book?

CORPORATE FINANCE > CORPORATE DEBT

Mezzanine Debt: What It Is, How It Works, and Examples

By ADAM HAYES Updated February 03, 2025

Reviewed by MICHAEL J BOYLE

Fact checked by VIKKI VELASQUEZ

What Is Mezzanine Debt?

Mezzanine debt occurs when a hybrid debt issue is subordinated to another debt issue from the same issuer. Mezzanine debt has embedded equity

CORPORATE FINANCE > CORPORATE FINANCE BASICS

Capital Structure Definition, Types, Importance, and Examples

By ALICIA TUOVILA Updated October 17, 2024

What Is Capital Structure?

Capital structure describes the mix of a firm's long-term capital—a mix of debt and equity—that it uses to fund its ongoing operations and future growth. A company's capital structure is reflected on its balance sheet. Investors may analyze a company's capital structure on its balance sheet to assess if it's a strong investment.

CORPORATE FINANCE > CORPORATE DEBT

Project Finance: Definition, How It Works, and Types of Loans

By ADAM HAYES Updated September 03, 2024

Reviewed by AMY DRURY

Fact checked by DIANE COSTAGLIOLA

PERSONAL FINANCE > BANKING

Investment Banking vs. Commercial Banking: What's the Difference?

By SEAN ROSS Updated March 16, 2024

Reviewed by EBONY HOWARD

Fact checked by BETSY PETRICK

Investment Banking vs. Commercial Banking: An Overview

Commercial and investment banks are both critical financial institutions in a modern economy, but they perform very different functions. Commercial banks are what most people think of when they hear the term "bank." Commercial banks accept deposits, make loans, safeguard assets, and work with many different types of clients, including the general public and businesses.

INVESTING > INVESTING BASICS

Investment Banking: What It Is and What Investment Bankers Do

By JULIA KAGAN Updated August 06, 2024

Reviewed by CHARLENE RHINEHART

Fact checked by PETE RATHBURN

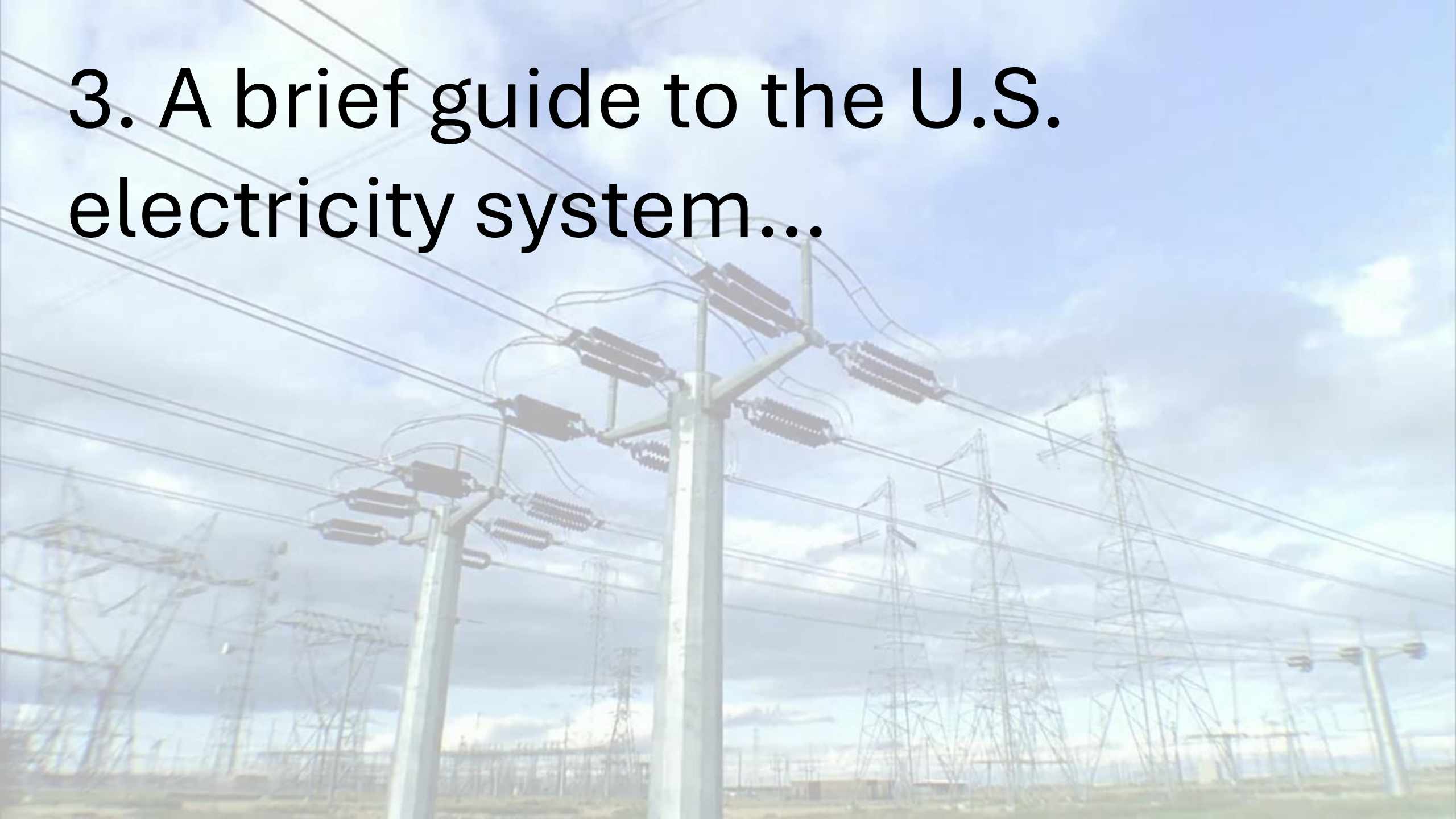
What Is Investment Banking?

Investment banking is a type of banking that organizes large, complex financial transactions such as mergers or initial public offering (IPO) underwriting. These

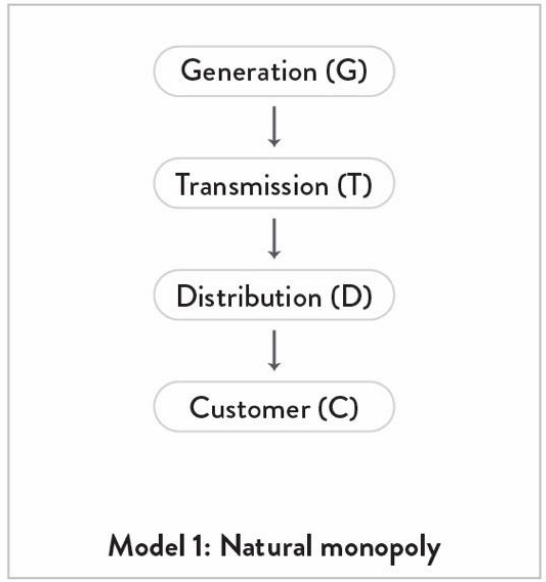
Methods

- Participant observation at 6 electricity finance conferences
- Semi-structured interviews with 50 people working in electricity finance
- Completed specialized training courses (i.e., Structuring Hedges and Trades; Solar MBA)
- Development of case studies
  - Electricity and financial industry press (i.e., Utility Dive, Power Finance & Risk, S&P Global)
  - Financial databases (i.e., Bloomberg, Preqin)
  - Regulatory agencies (i.e., FERC, SEC, US EIA)

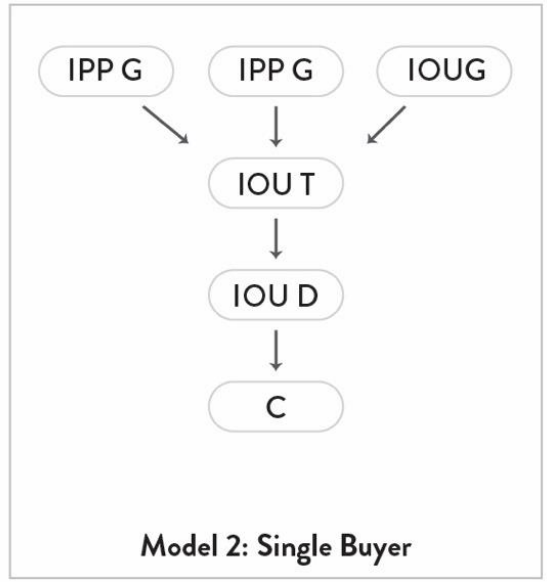
3. A brief guide to the U.S. electricity system…



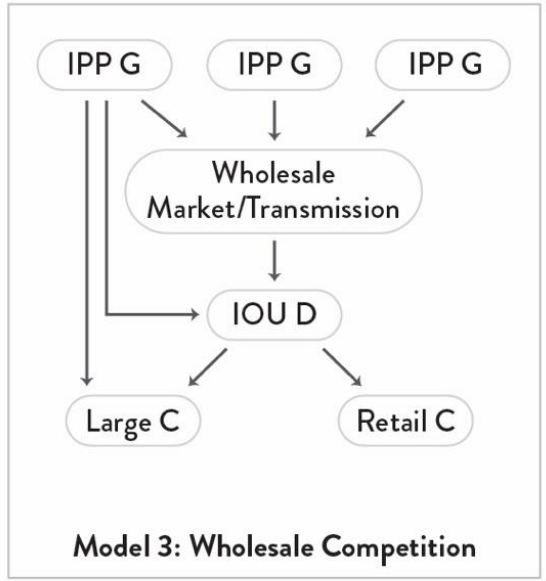
Electricity Market Models



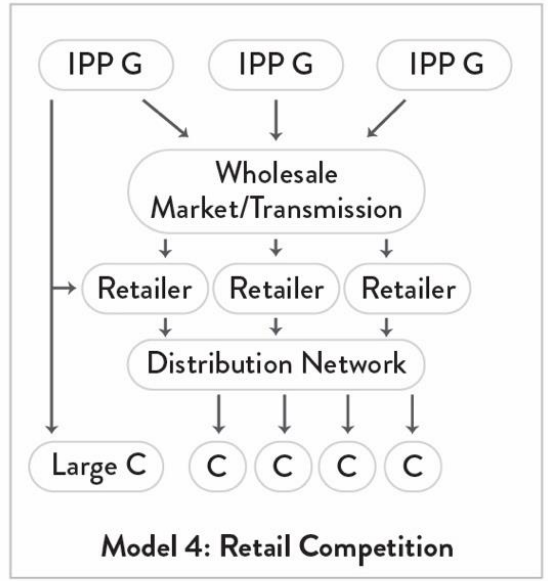
Model 1: Natural monopoly



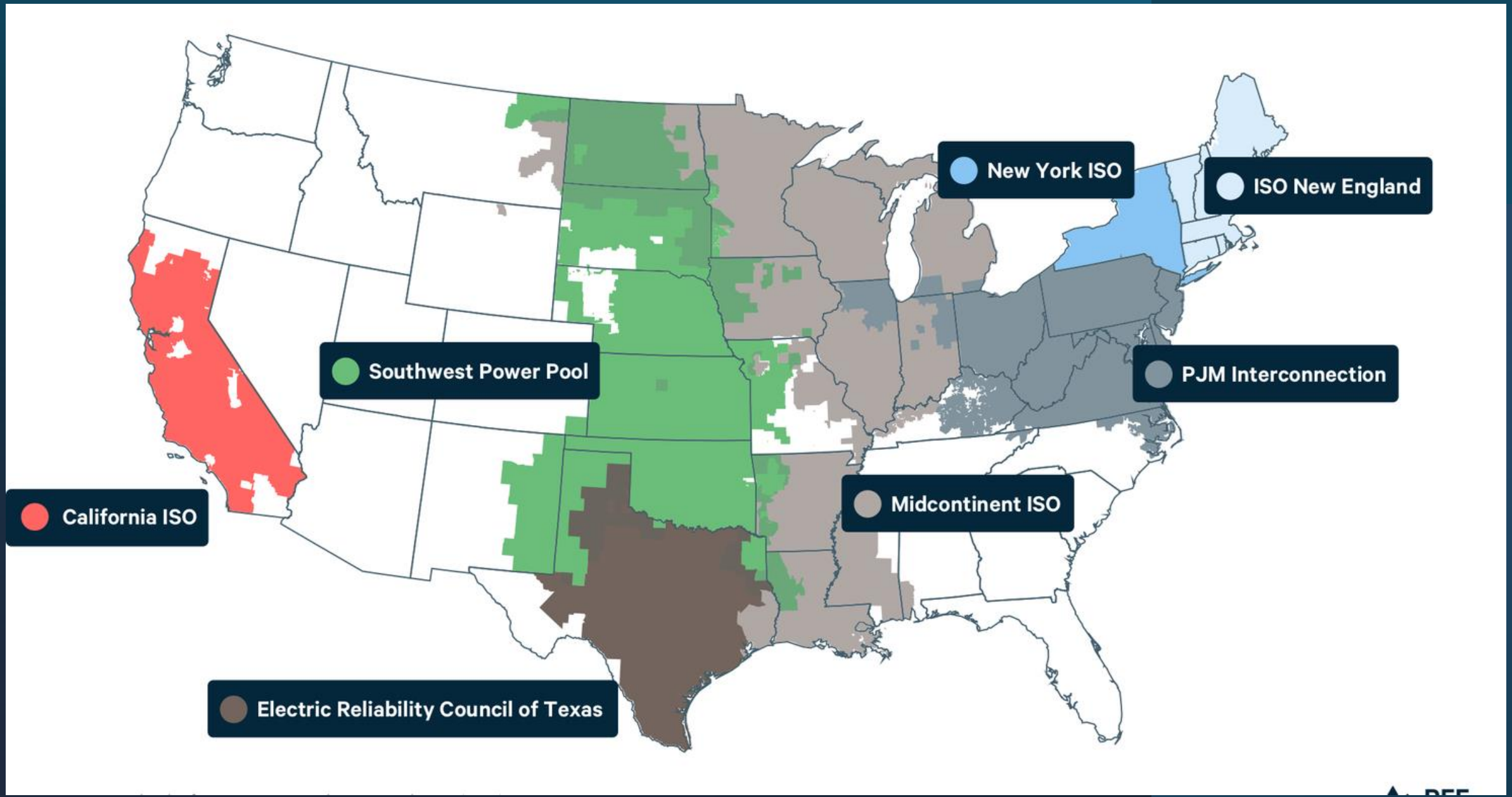
Model 2: Single Buyer



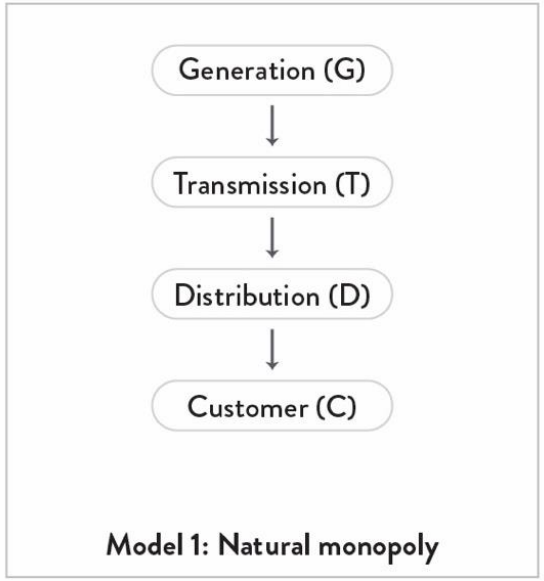
Model 3: Wholesale Competition



Model 4: Retail Competition


New York ISO
ISO New England
Southwest Power Pool
PJM Interconnection
California ISO
Midcontinent ISO
Electric Reliability Council of Texas

Electricity Market Models



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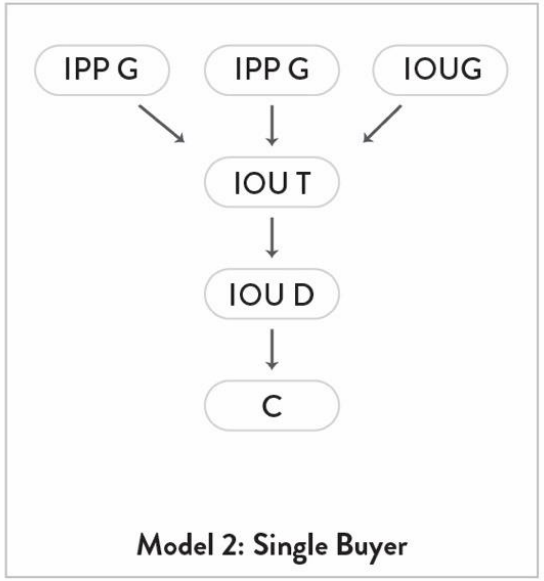

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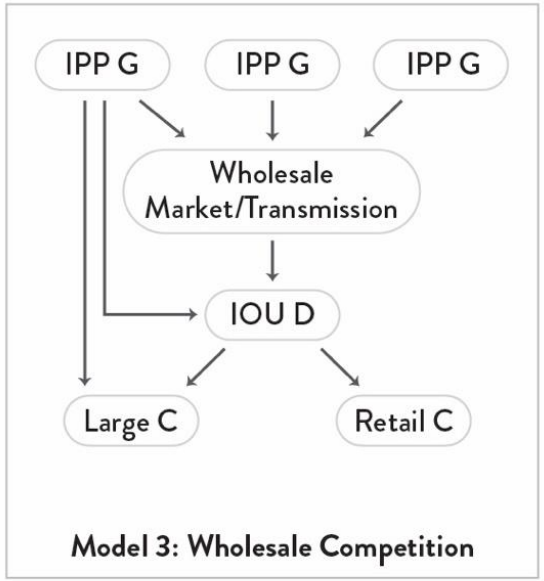

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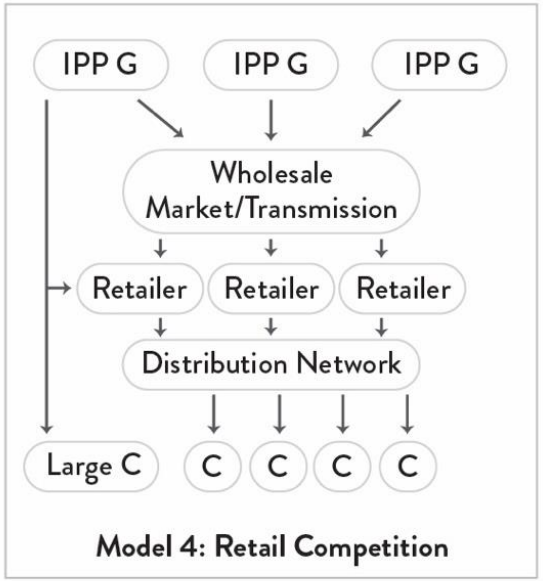
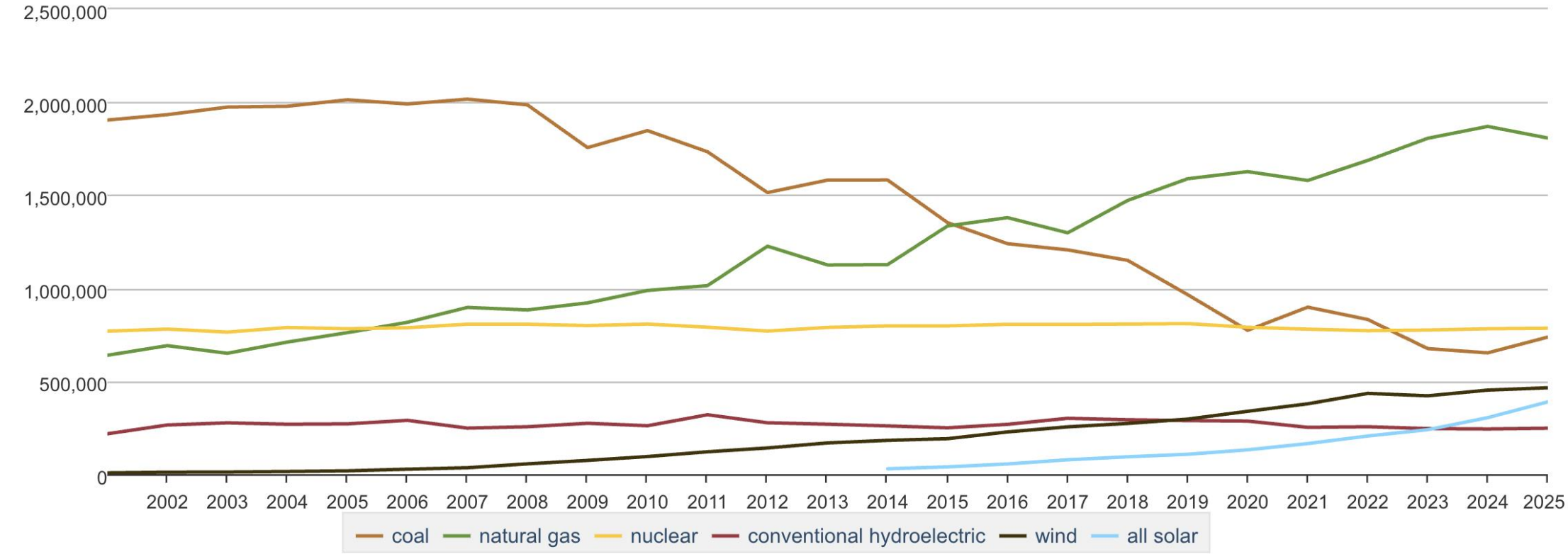


Model 4: Retail Competition

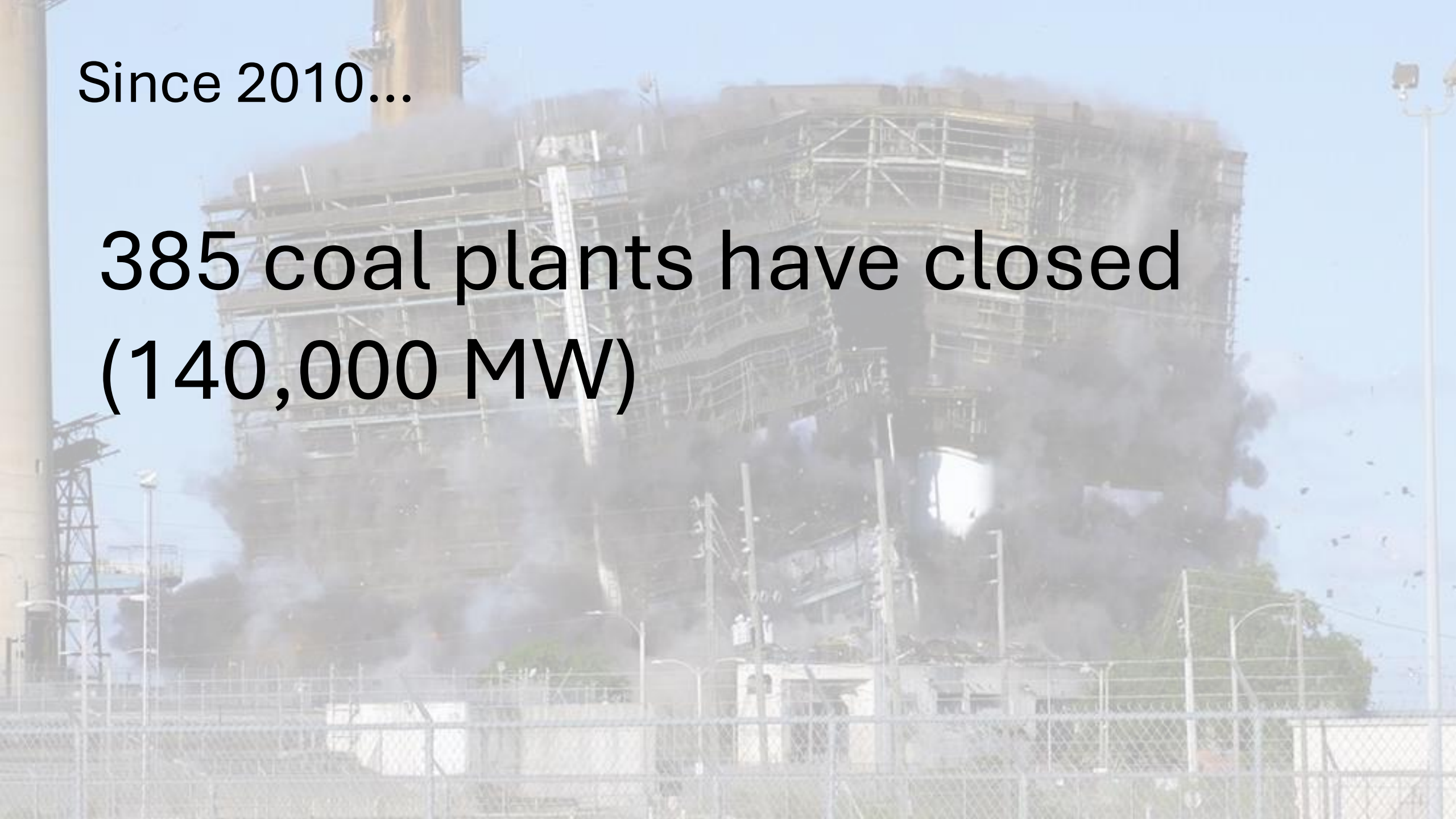
Net generation, United States, all sectors, annual

DOWNLOAD

thousand megawatthours

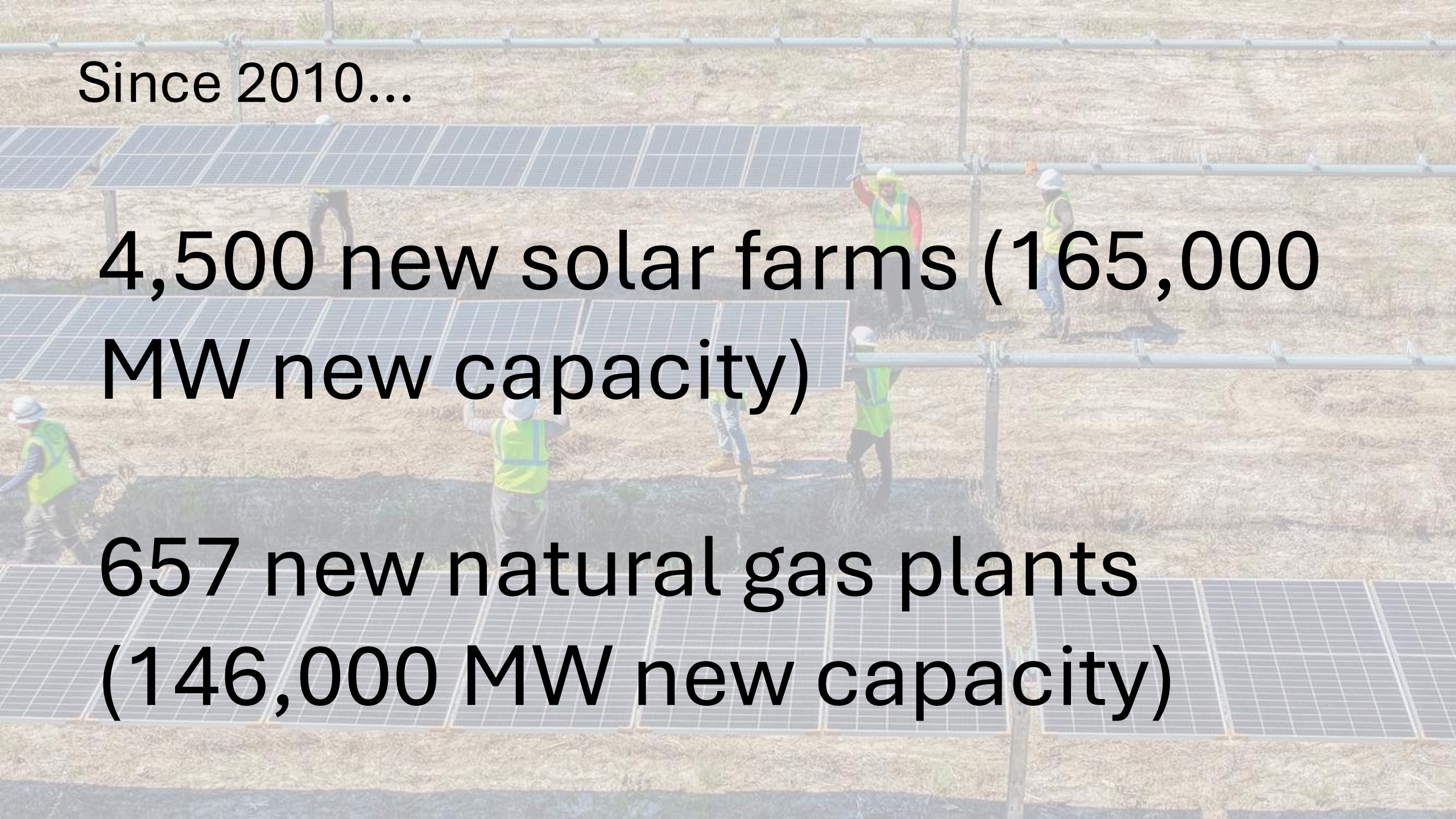


Data source: U.S. Energy Information Administration



Since 2010...

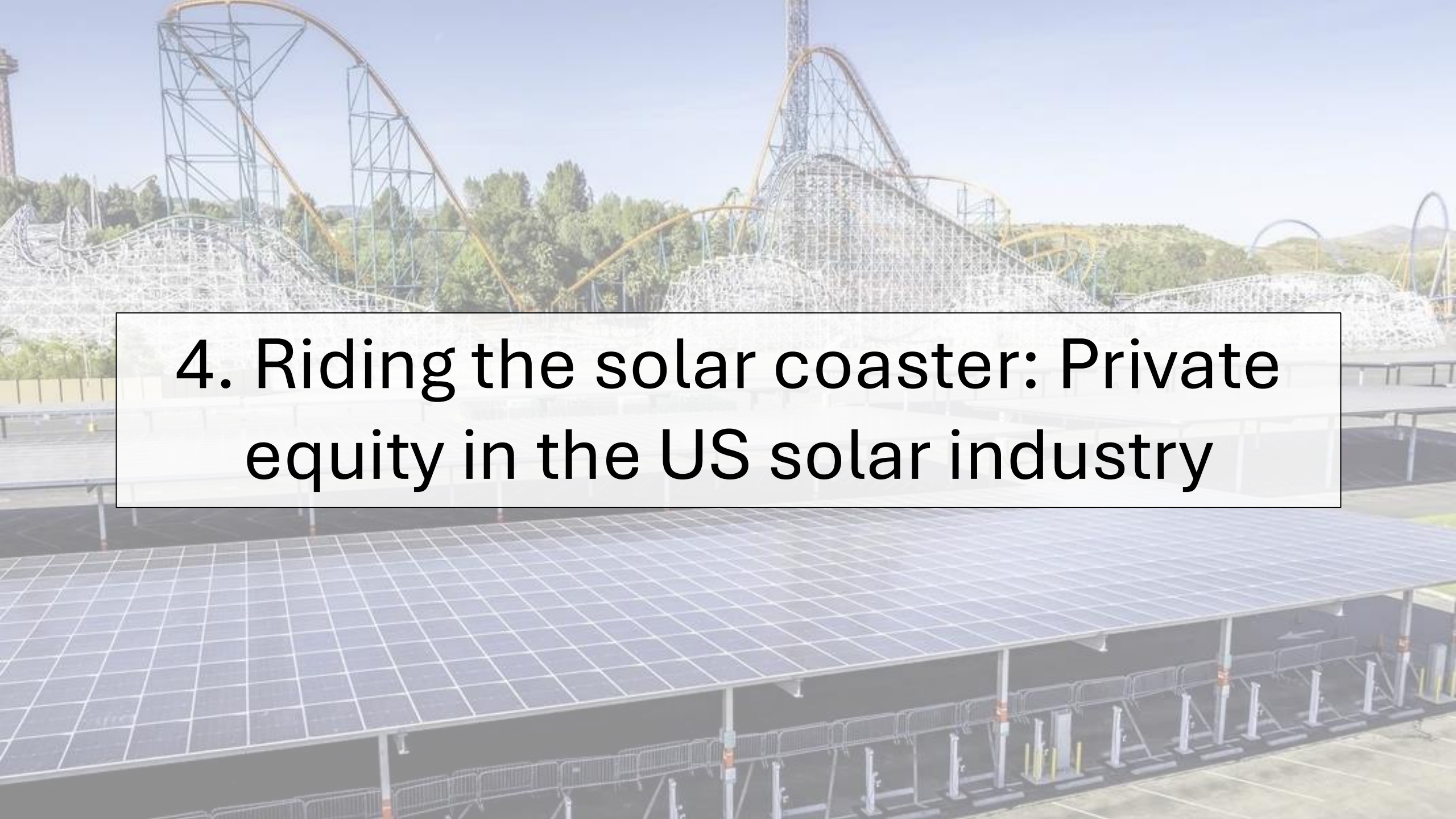
385 coal plants have closed (140,000 MW)



Since 2010…

4,500 new solar farms (165,000 MW new capacity)

657 new natural gas plants (146,000 MW new capacity)



4. Riding the solar coaster: Private equity in the US solar industry

Investor Interest in Renewables Gathers Steam

July 25, 2019

Jared Bochner

Firms set to raise record amounts of capital for the sector

Current technologies that generate electricity from renewable resources could supply the US with 80% of its total energy needs by the year 2050, according to a study by the Department of Energy's National Renewable Energy Laboratory. This would not be without challenges, but the increased investment in renewable energy opportunities proves this is an area of interest, and underlies investors' belief in the significant financial opportunity in the burgeoning sector.

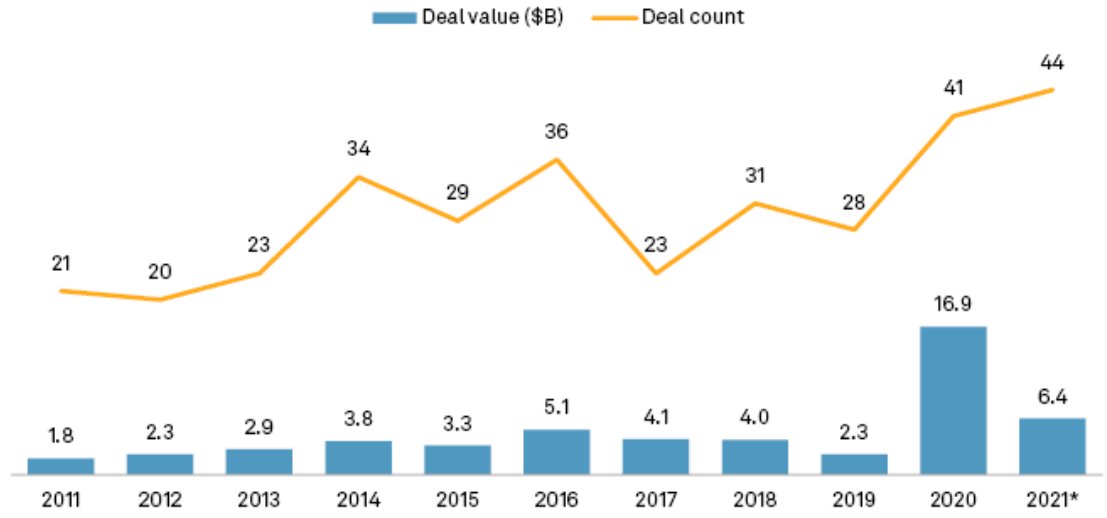
The Rise of Eco-Investing

In an era of increased environmental consciousness, many institutional investors have committed significant amounts of capital to private funds focused on renewable energy opportunities. Pension funds – whose responsibility as a fiduciary for their pensioners often precludes them from unproven or dubious investments – are particularly active. The five largest US public pension funds alone committed nearly $9bn to renewables funds in 2018.

As climate change drives the planet towards long-term and potentially irreversible damage, the idea of responsible investing among private equity fund managers and investors has gained traction. Organizations promoting impact and ESG investing are attracting increased commitment as a result. Those that exercise caution when entering the sector may be reassured, as metrics that measure an

"Brookfield Asset Management and Global Infrastructure Partners are raising a combined $42 billion to be invested in renewables."

2021 US solar and wind private equity deal activity



As of Dec. 31, 2021.
** Extrapolated deal values
Source: American Investment Council

PE Weekly: Private Equity Leads the ESG Pack

New research finds PE is a leader in ESG management as investors this week target clean energy

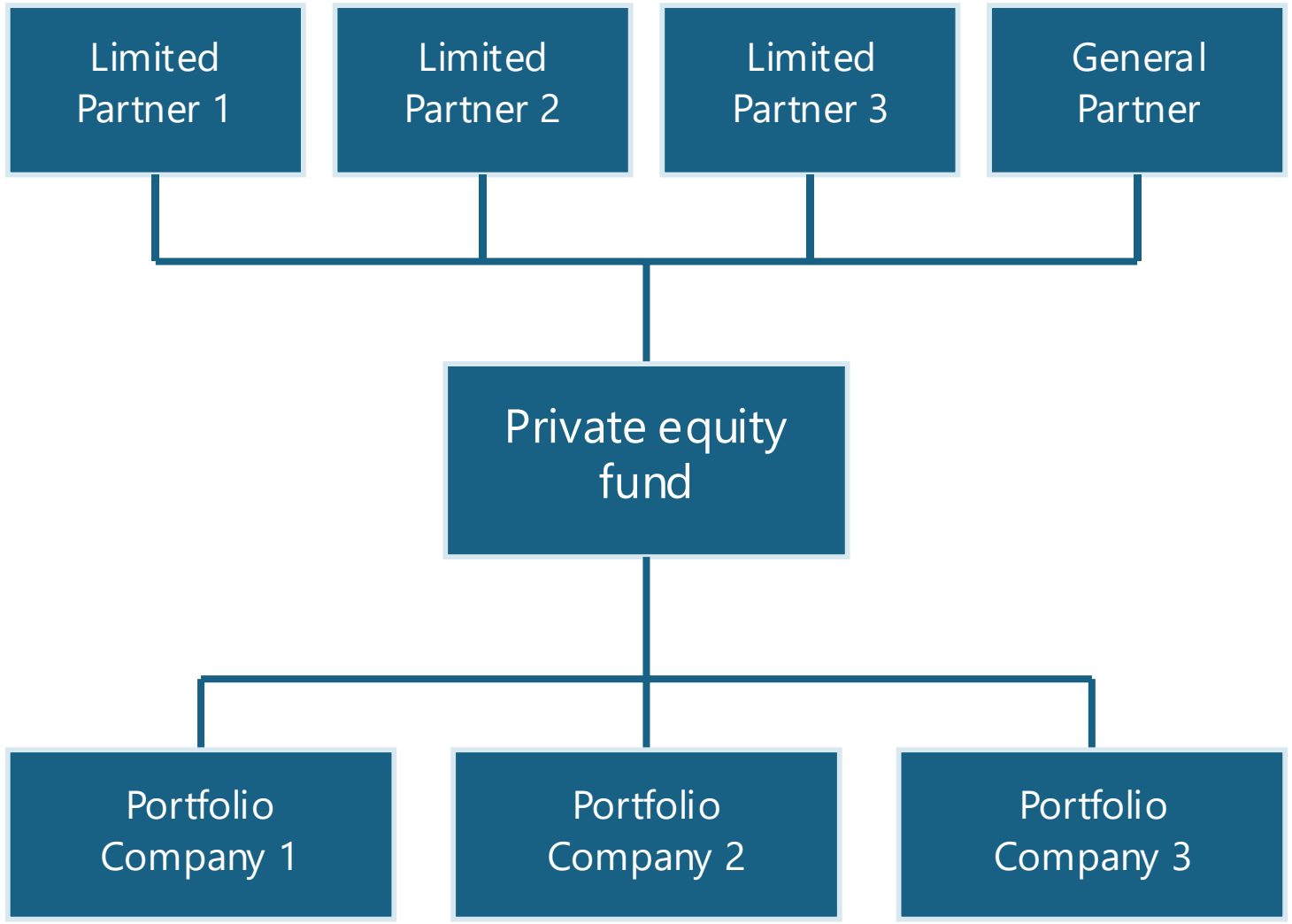
Latest News / News & Trends / PE Weekly / Recent Deals **March 23, 2023** / **MMG**

What does it mean to have private equity as a leading investor in the energy transition?

Private Equity: An Overview

- Financial firm that acquires company (i.e., takes an equity share) and takes them private
  - Quick turnaround, profitable exit after 4-6 years of management
- An ‘alternative investment vehicle’
  - Promises higher rewards than possible in public markets
- A solution to the principal-agent problem?
  - Brings alignment of shareholder and company managers
- “the end of earlier futile attempts to create (shareholder) value for all and institutionalizes the capture and extraction of value for the benefit of a small number of principals” (Froud et al. 2007)

Limited partner: pensions, endowments, family offices, etc.
General partner: the private equity firm
Portfolio company: companies acquired by the fund; managed by the private equity firm



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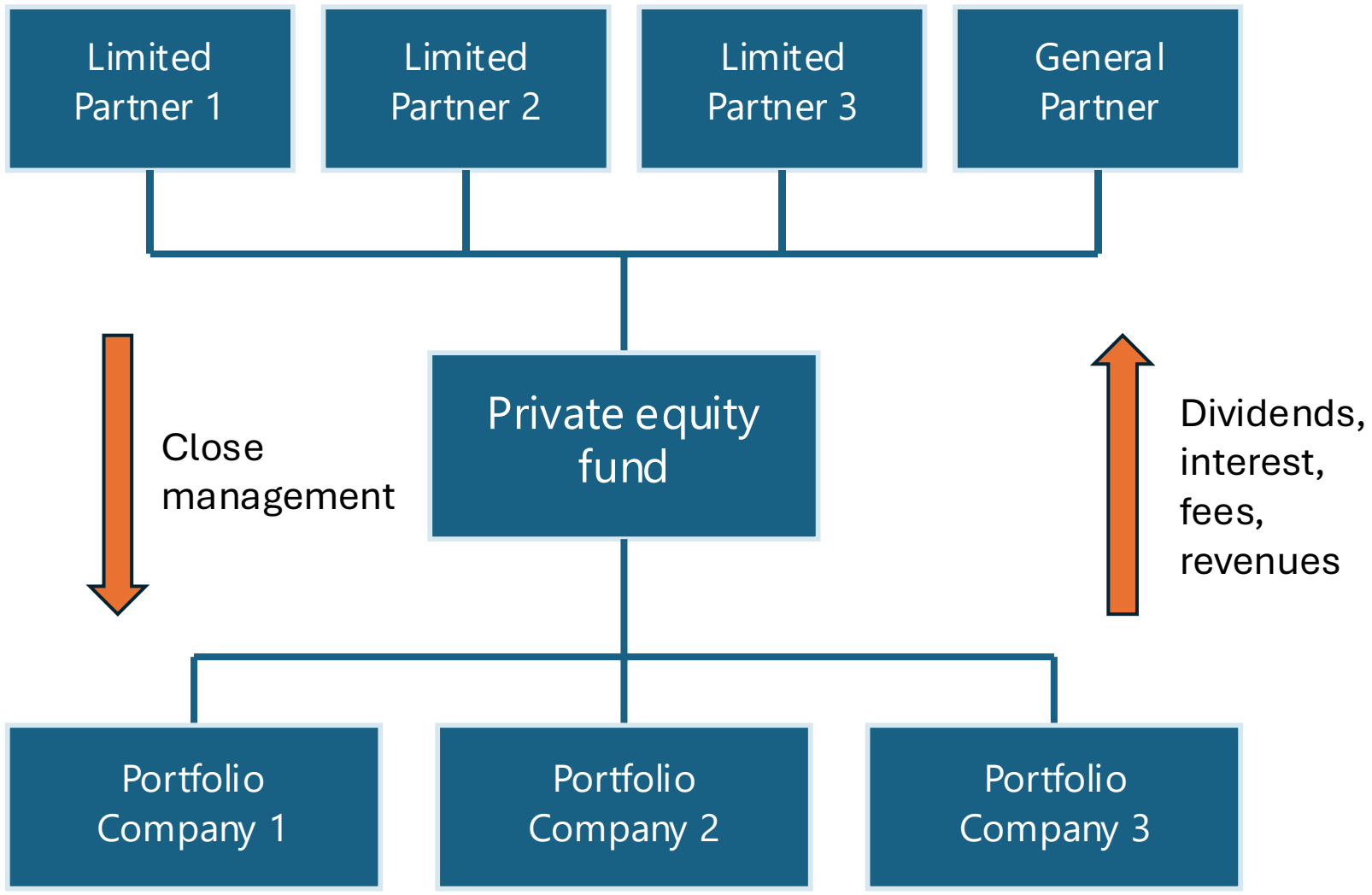
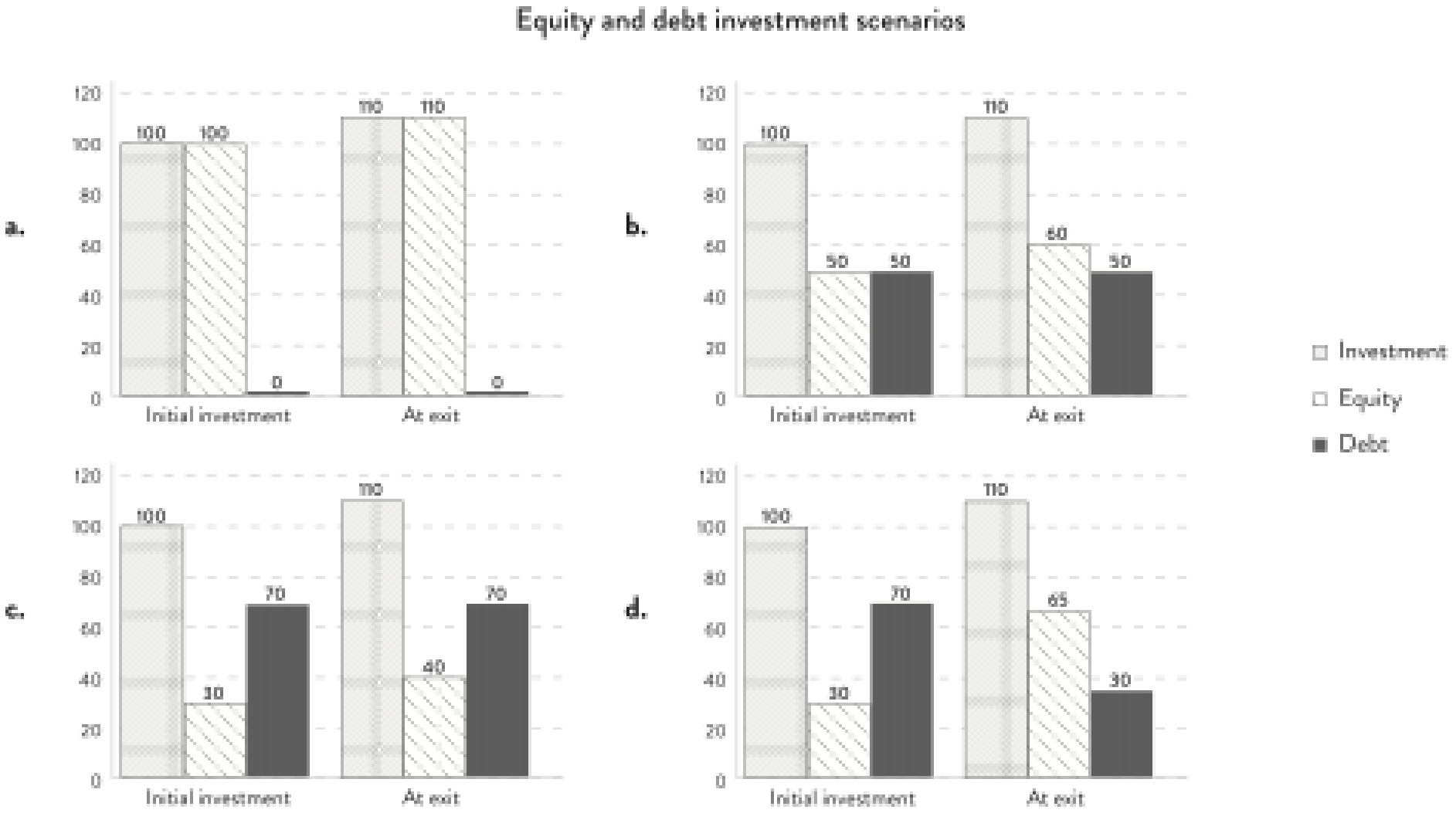


Debt/Leverage

- Using borrowed money increases potential returns
- Introducing debt makes investments riskier
- Management frequently focuses on aggressively paying down debt



"There's so much capital right now that's flowing and so much pressure on institutions that control trillions of dollars to put that money to work."

- Jeff, CEO, private equity portfolio company (2021)

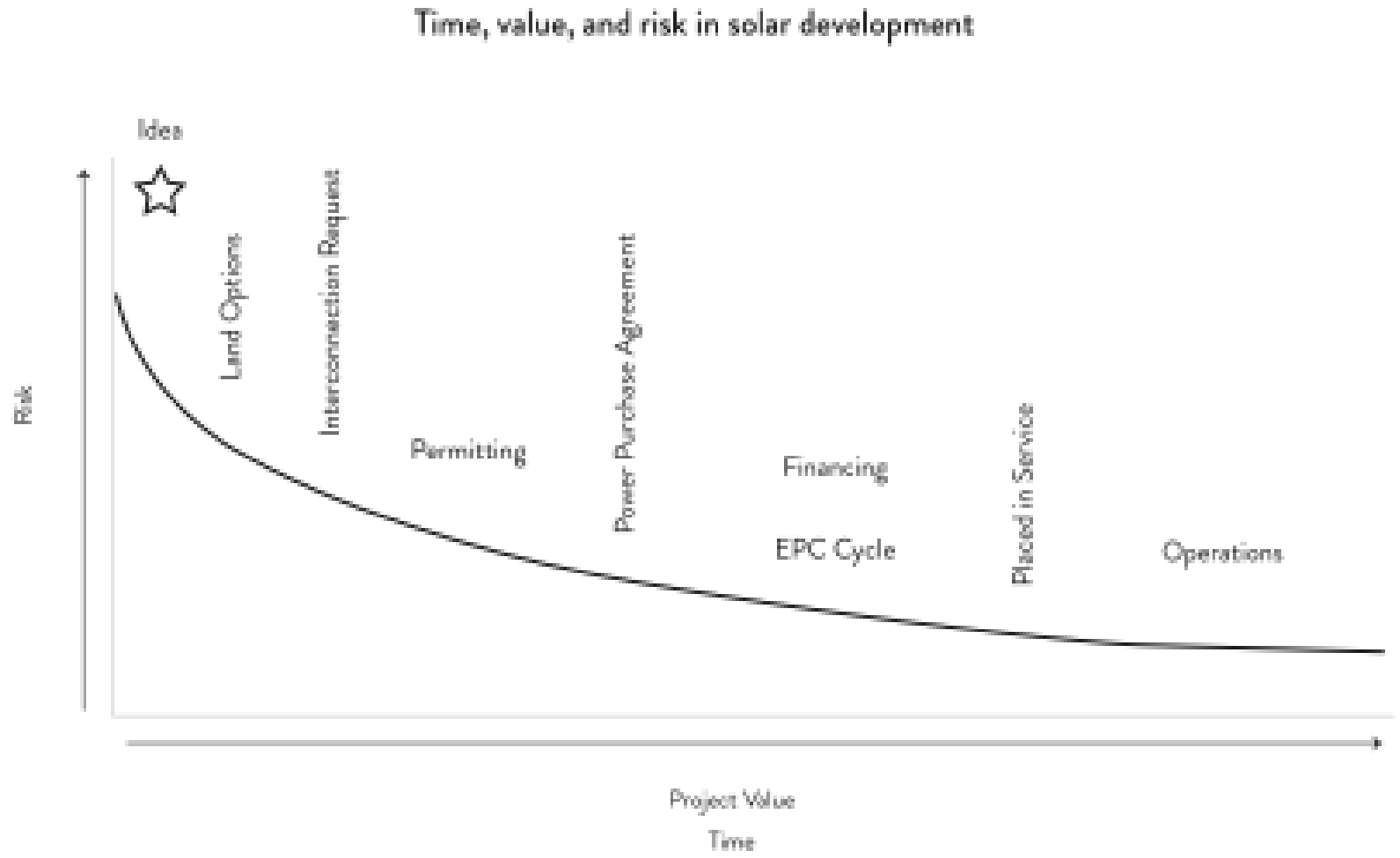
Renewable energy shifted from "a tax play to this ESG investment where shareholders are being activist"

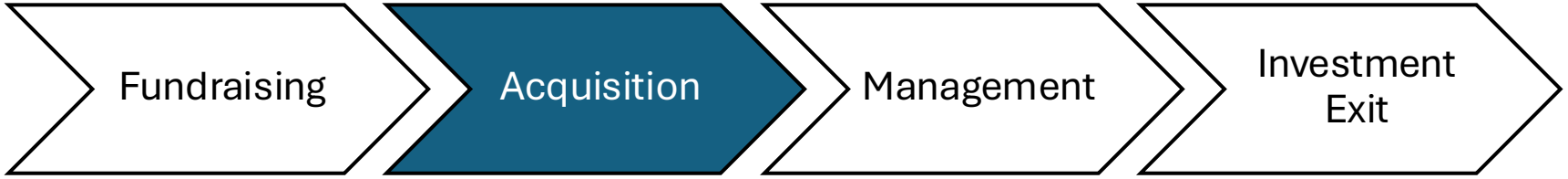
- Carol, partner in private equity portfolio company (2022)

"Not only can you get some good risk-adjusted returns, but then you also have this added impact aspect to it as well."

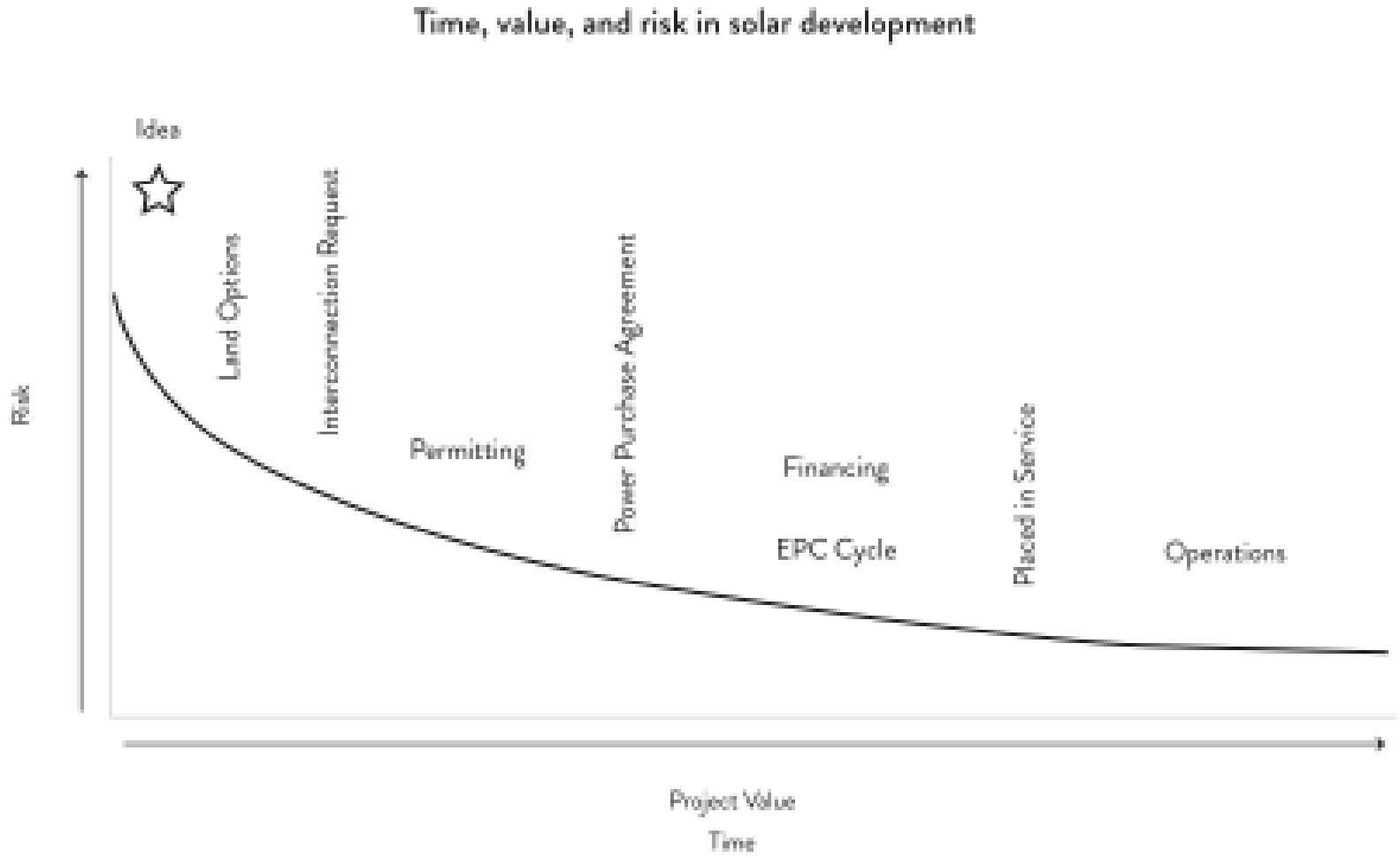
- David, executive at mid-size renewables specific private equity firm (2022)

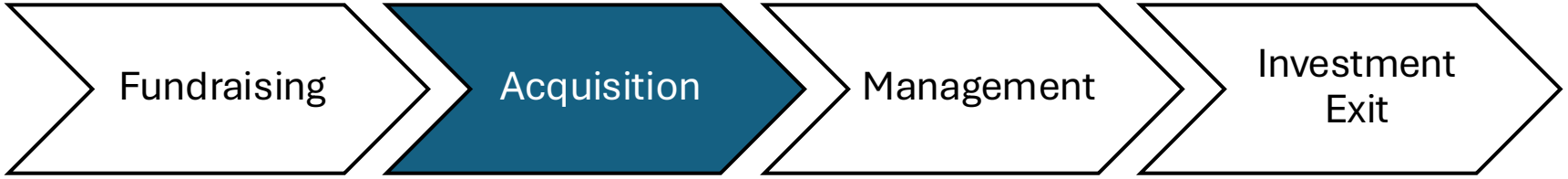
Fundraising | **Acquisition** | Management | Investment Exit





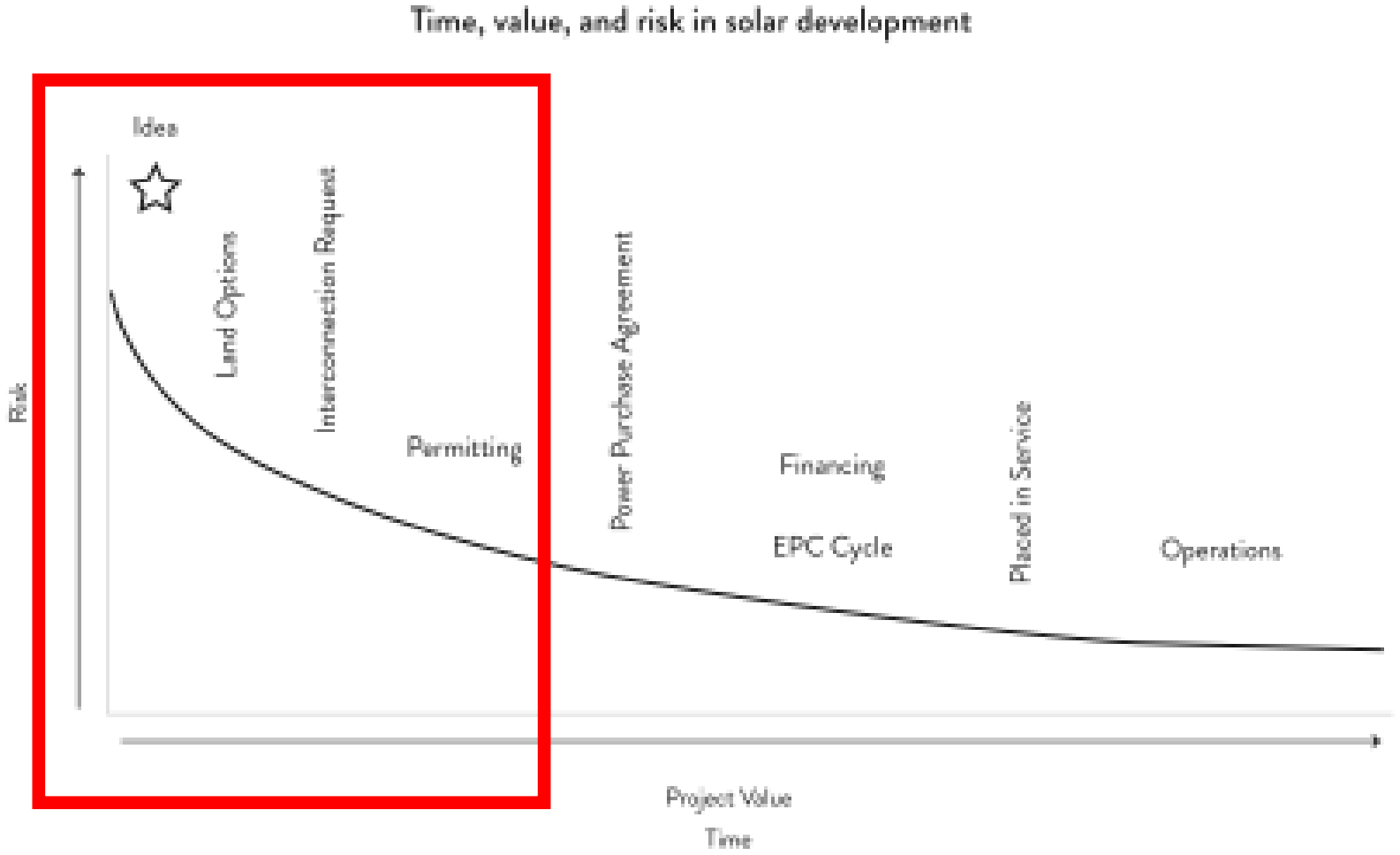
"When we're looking at a developer, obviously we diligence that company itself and the financials and all that. But then we'll really dig down into projects."
- Mark, principal, mid-size private equity firm (2021)





Platform companies: acquisition that will serve as a platform for subsequent acquisitions

- Early-stage developers
- Enables large PE firms to write fewer checks
- PE firms can ”build out their own renewable engine”



Debt tends to sharpen management and investor focus – a disciplinary tool to incentivize management to increase investor returns

Cypress Creek ENERGY

WHAT WE DO HOW WE WORK

Cypress Creek Recapitalizes as Investors HPS, Temasek move to own 100% of Equity

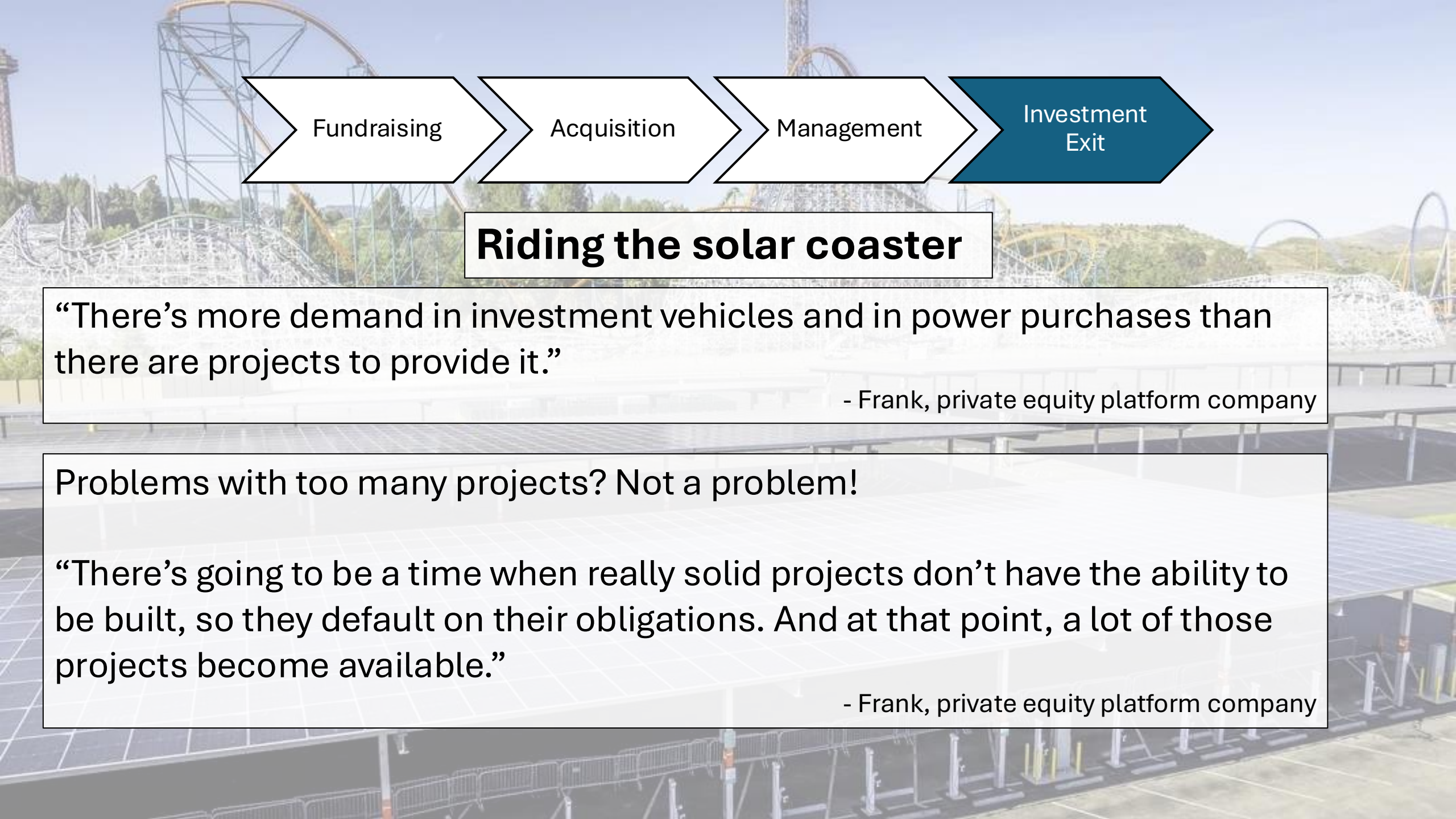
Back to archives

DURHAM, N.C. – August 31, 2020 – Today, Cypress Creek Renewables announced that its institutional investors, HPS Investment Partners (HPS) and Temasek, have agreed to exchange a substantial portion of their investments in the company for common equity. Following the closing of the transaction, HPS and Temasek will own 100% of the common equity in Cypress Creek. The transaction is the result of a thoughtful process to optimize the company's capital structure and best position it to execute on the long-term growth strategy that was put into place last summer by Cypress Creek's new leadership.

Cypress Creek and its investors have had detailed discussions about the company's long-term operating plan, which advances its mission to become the nation's leading solar independent power producer (IPP). Specifically, all parties are aligned in continuing to grow Cypress Creek's operating portfolio through the build-out of the company's development pipeline, comprising 6 gigawatts of high-quality projects. This recapitalization positions Cypress Creek to continue to invest in and grow its key businesses, including its operating portfolio, development pipeline, and industry-leading O&M and asset management divisions.

Debt tends to sharpen management and investor focus – a disciplinary tool to incentivize management to increase investor returns

EQT Infrastructure to acquire Cypress Creek Renewables, a leading integrated renewable energy platform in the US



Riding the solar coaster

"There's more demand in investment vehicles and in power purchases than there are projects to provide it."

- Frank, private equity platform company

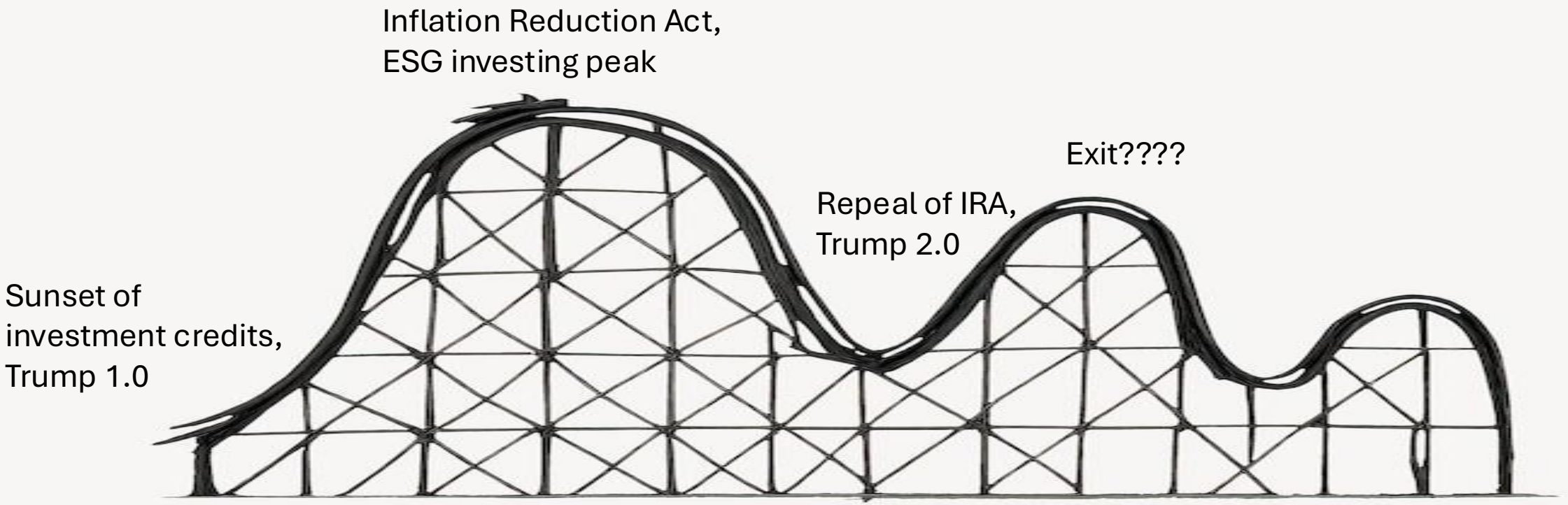
Problems with too many projects? Not a problem!

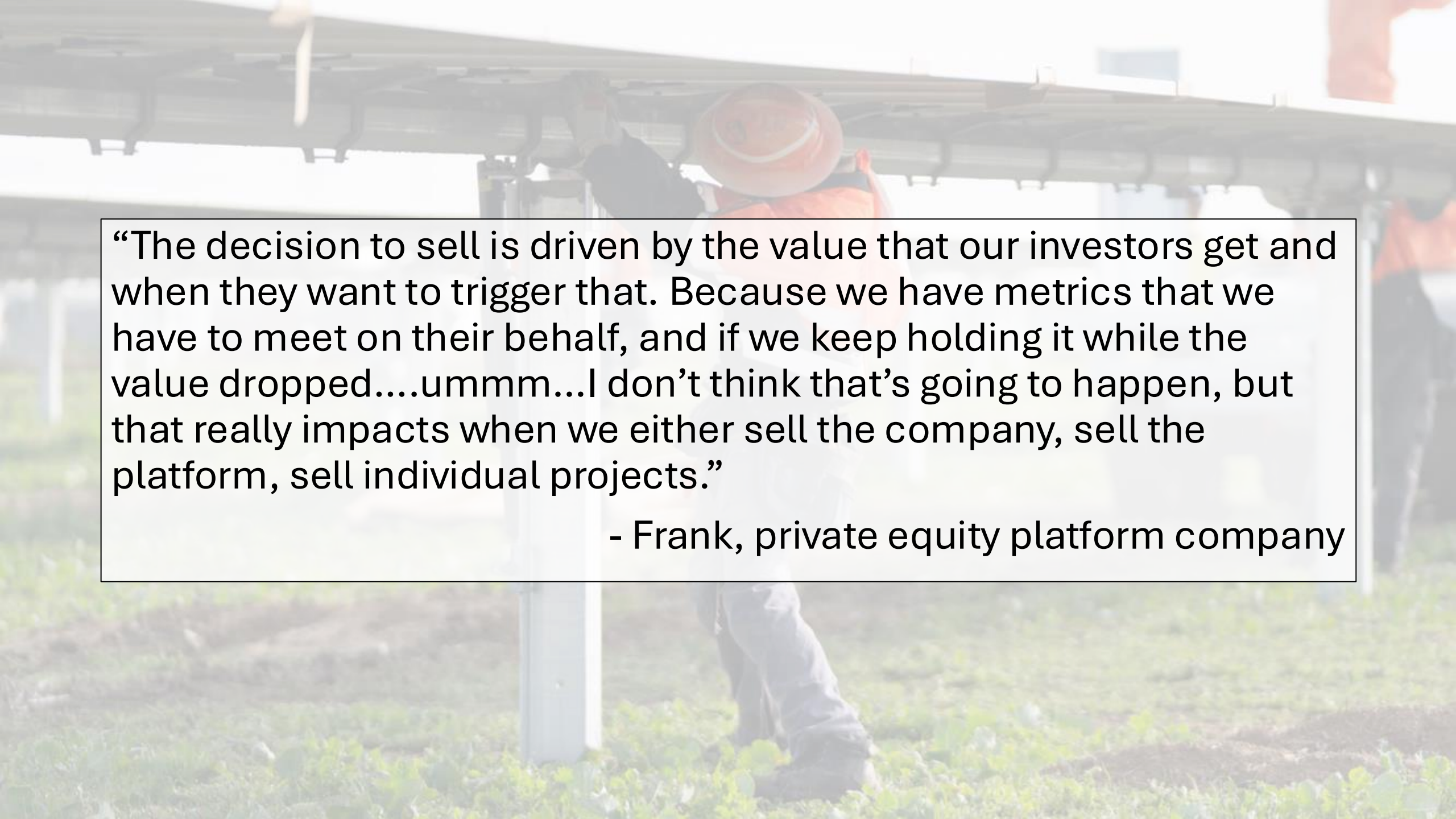
"There's going to be a time when really solid projects don't have the ability to be built, so they default on their obligations. And at that point, a lot of those projects become available."

- Frank, private equity platform company

Fundraising → Acquisition → Management → **Investment Exit**

Riding the solar coaster





"The decision to sell is driven by the value that our investors get and when they want to trigger that. Because we have metrics that we have to meet on their behalf, and if we keep holding it while the value dropped….ummm…I don't think that's going to happen, but that really impacts when we either sell the company, sell the platform, sell individual projects."

- Frank, private equity platform company

1. Celebrate growing private sector investment in renewables?
2. ESG pressure can drive changes in investment patterns?
3. Private equity are *financial* investors -- even when portfolio companies fail, private equity and their investors can succeed

THE BANK OF MISSOURI

Community Solar Portfolios Available at Public Sale

Two foreclosure auctions of Maine and Minnesota project companies — October 22, 2026

Hi Conor,

The Bank of Missouri, as secured party, is conducting two public foreclosure sales (under UCC Article 9) of 100% of the membership interests in community solar project companies with assets in Maine and Minnesota. Both auctions will be held on **October 22, 2026, at 10:00 AM Eastern** at McGuireWoods LLP in New York (and by videoconference for qualified bidders). Key details for each sale are summarized below.

Sale 1: Construction-Stage Portfolio

Status: Construction stage

Projects: 11 community solar project companies — 7 in Maine, 4 in Minnesota

Pledgors: NES-M1 DevCo LLC, Novel Energy SPV 3 LLC, and Novel ME SPV LLC (each a Delaware LLC)

Date & Time: October 22, 2026, at 10:00 AM Eastern

Pine Gate Renewables files for bankruptcy, selling solar business and project portfolio

By Billy Ludt | November 7, 2025

National solar developer Pine Gate Renewables is filing for Chapter 11 bankruptcy and selling its solar and energy storage project portfolio and independent power producer business. This will include completed and under-development projects, of which the company stated there is 10 GW_{DC} in progress.

According to the press release announcing the bankruptcy and sale of company assets, Pine Gate plans to continue company operations through the transaction. In September, Blue Ridge Power, the engineering, procurement and construction subsidiary of Pine Gate Renewables, filed state WARN notices to lay off more than 500 employees by November 18.

Credit: Pine Gate Renewables

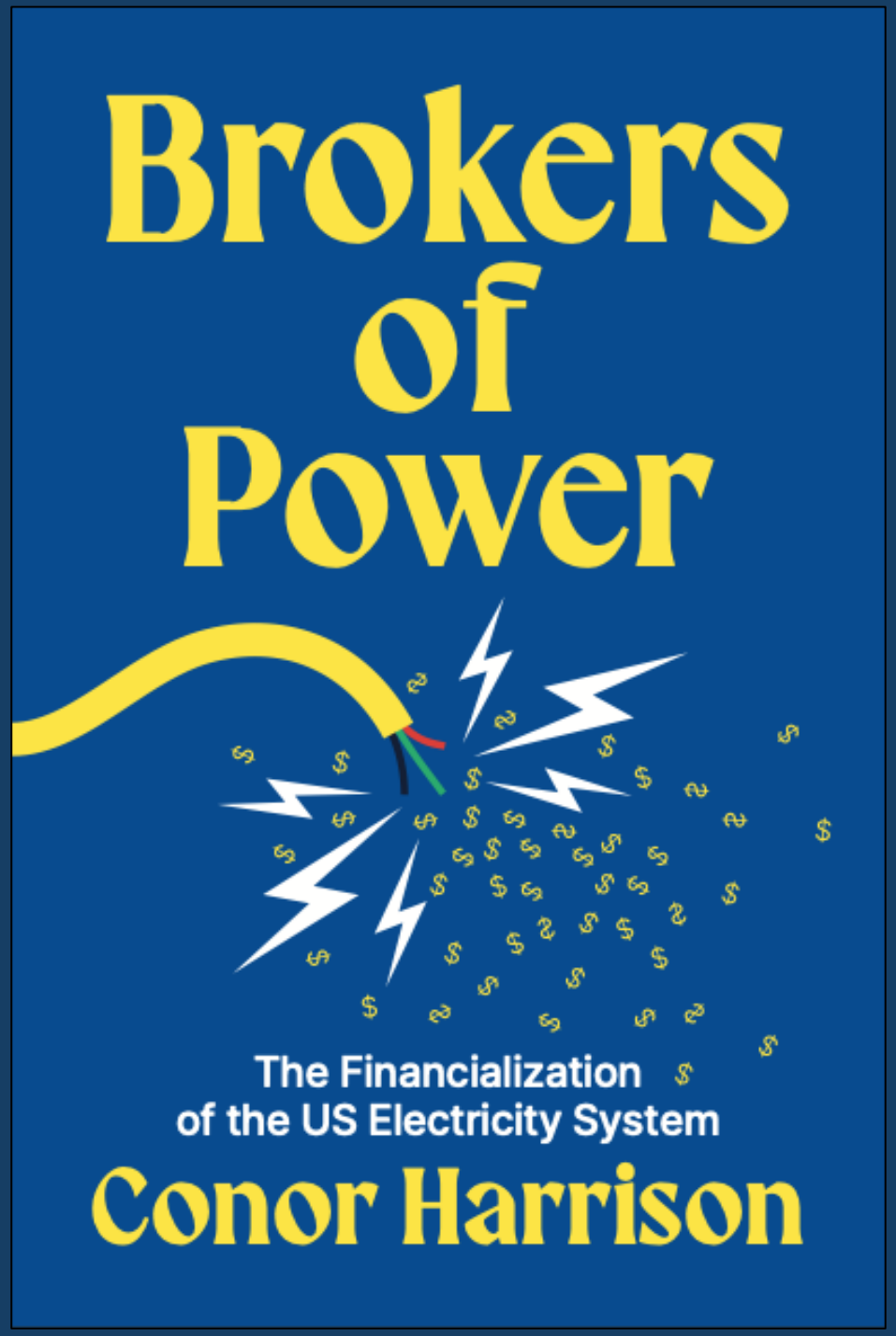
ACT Power Services, Pine Gate's operations and

Private equity faces existential crisis in US as unsold companies pile up

Private equity firms and the companies they own employ over 13 million, from startups to rural hospitals and large retailers, but experts' concerns of collapse are growing

Thanks!

- University of Minnesota Press
- 30% discount code: MNAMST26



Questions?

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