



# Stranded Assets: A Federal Tax Solution

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Session 4.4: Corporate Approaches

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# What are “Stranded Assets”?

## Stranded Assets are:

- (1) Capitalized costs from purchasing property, plant, equipment that
- (2) because of a
  - Change in the market,
  - Change in technology, OR
  - **Change in regulation**
- (3) are forced into an early retirement because the assets are
  - less competitive in providing services,
  - subject to higher costs or yield a reduced revenue stream
  - have a shortened service life / period for use, and
- (4) consequently, the owner/investor cannot recover their remaining investment in the assets.

# What are “Stranded Assets”?

## Unregulated Markets

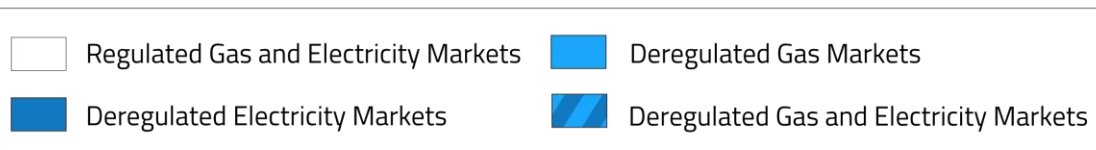
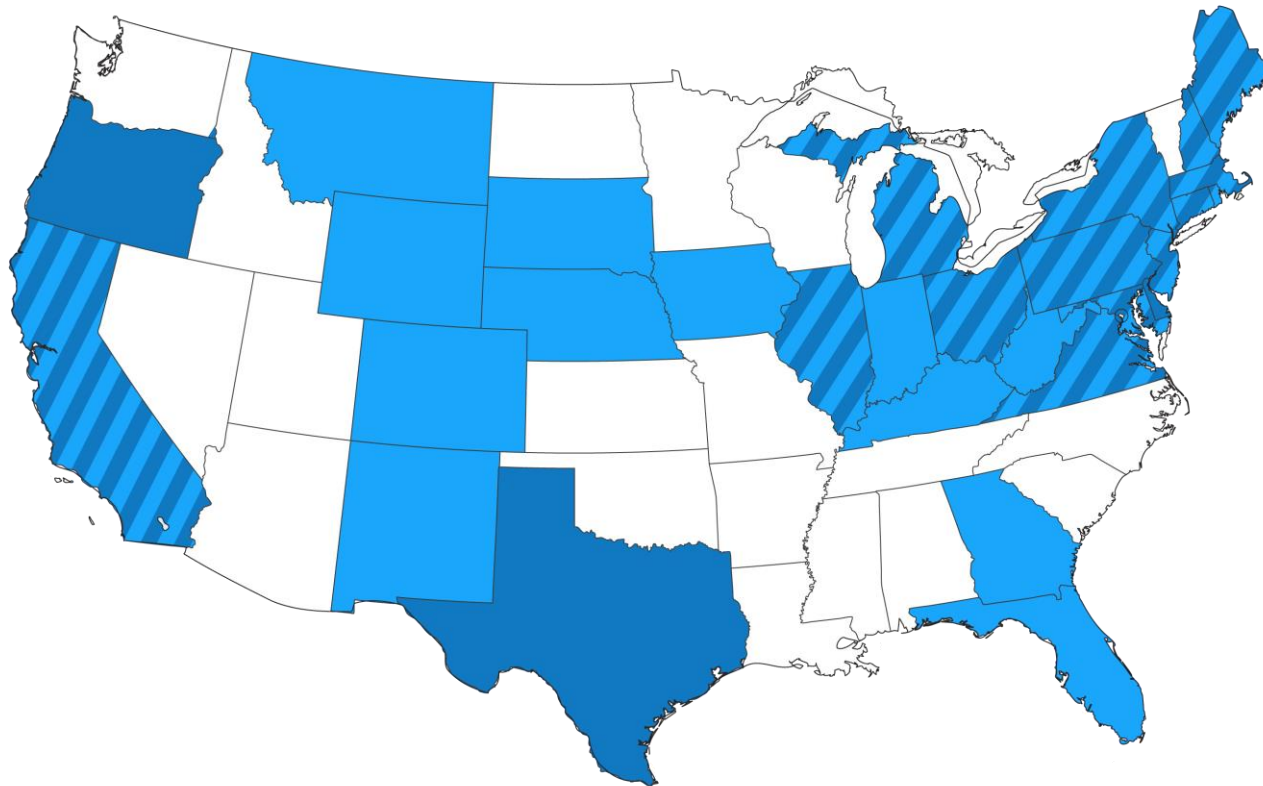
In unregulated markets firms may manage this risk through insurance, hedging transactions, asset diversification and other strategies.

## Regulated Markets

Public utilities must obtain the permission from their regulators (Public Service Commissions) BOTH to manage risks AND to pass forward the costs of stranded assets to their customers.

***Consequently, they face greater exposure to economic loss.***

# 2019 US Deregulated Electricity and Gas Markets



**Electric Choice**

<https://www.electricchoice.com/map-deregulated-energy-markets/>

$$R = O + (V - D)r$$

- **R**: the utility's total revenue requirement
- **O**: operating expenses
- **V**: gross value of the utility's tangible and intangible property
- **D**: accrued depreciation
- **V – D**: the utility's current capital investment (“**rate base**”)
- **r**: rate of return a utility is allowed to earn on its rate base

# Why Are Stranded Assets Important?

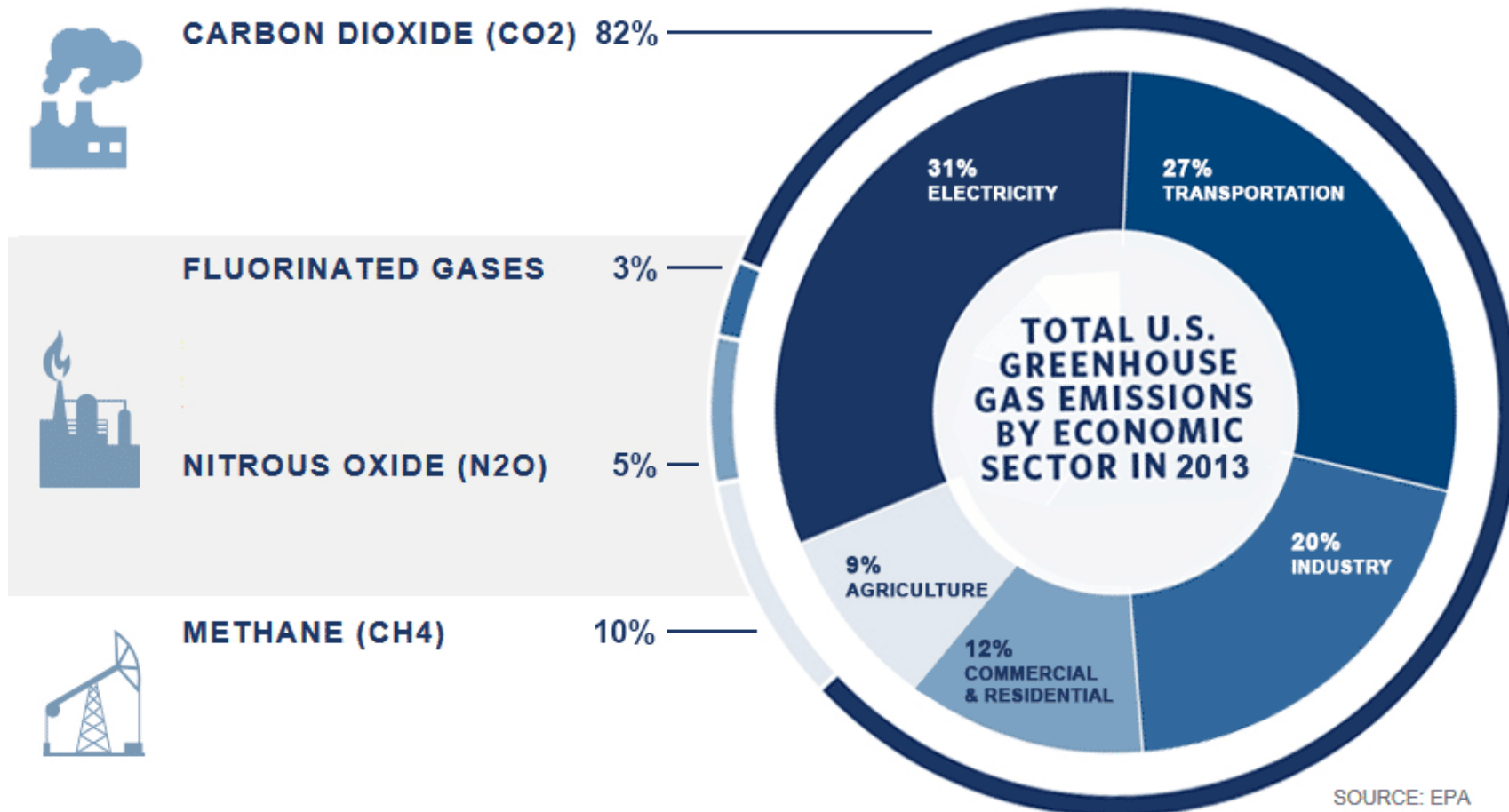
Historically, stranded asset claims have formed the basis for:

- **Takings** litigation
- **Bankruptcy** filings
- **Bailouts** / Investor demands for relief
- **Delays** in the adoption of regulation (including carbon pricing schemes and other forms of carbon regulation)
- **Rejection** of regulation altogether

**Courts** have generally *declined* to respond to these claims.

**Regulatory Agencies** have been much more *accommodating* when there has been a sharp change in the regulatory rules.

## POWER PLANTS ARE THE SINGLE LARGEST SOURCE OF CARBON POLLUTION



# Fossil Fuel Plants – Stranded Assets?



**Claim:** Coal fired power plant retirements result from Clean Air Act mercury regulation and Clean Water Act rules on dumping mining debris into local streams disposal and storage of coal ash waste.

**Reality:** Natural gas from fracking is more competitive than coal.

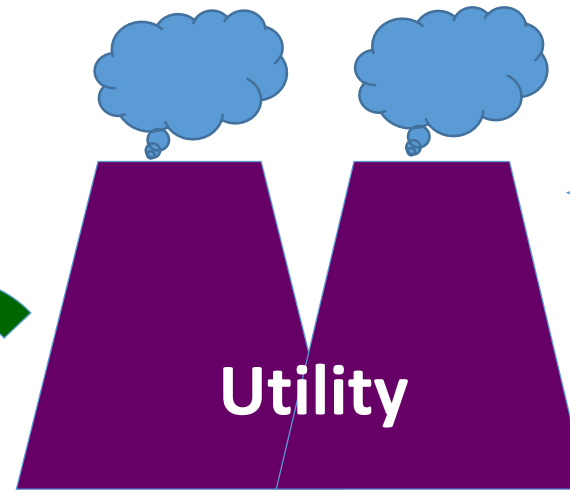
# HISTORIC Tax and Book Depreciation for Utilities

## TAX DEPRECIATION

Utility tax payments on gross income are reduced by tax depreciation (capital recovery spread over “useful life” of property, 55 years)

**Department of Treasury**

## BOOK DEPRECIATION



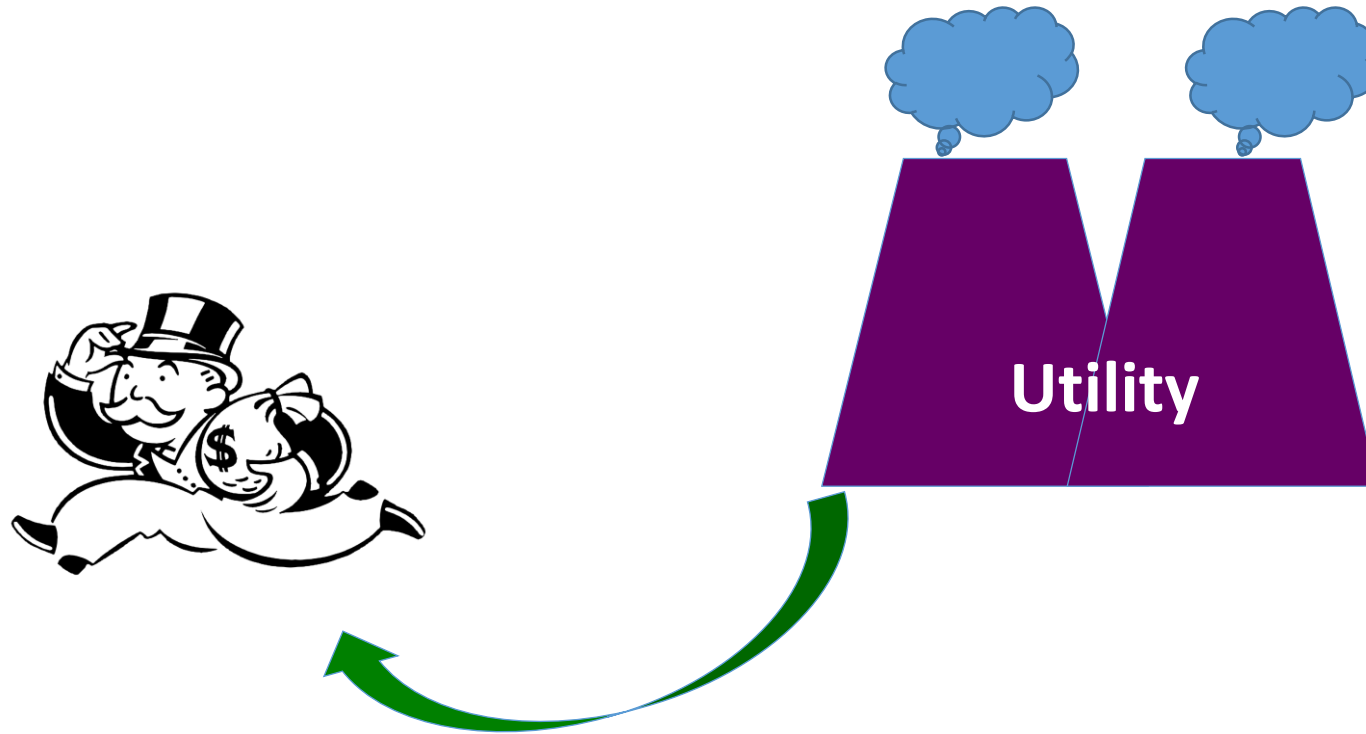
Capital Costs

Electricity Services

**Consumer**

Rate Payments (include capital costs spread over “service life” of asset, which, for Coal-fired Power Plants, is 55 years)

# Investment-backed Expectations



# CURRENT Tax and Book Depreciation for Utilities

## TAX DEPRECIATION

Utility tax payments on gross income reduced by **TAX DEPRECIATION** (capital “cost recovery” over 20 years (highly accelerated))

**Department of Treasury**

Tax savings from deferral = ADIT

\$\$\$  
ADIT

Capital Costs

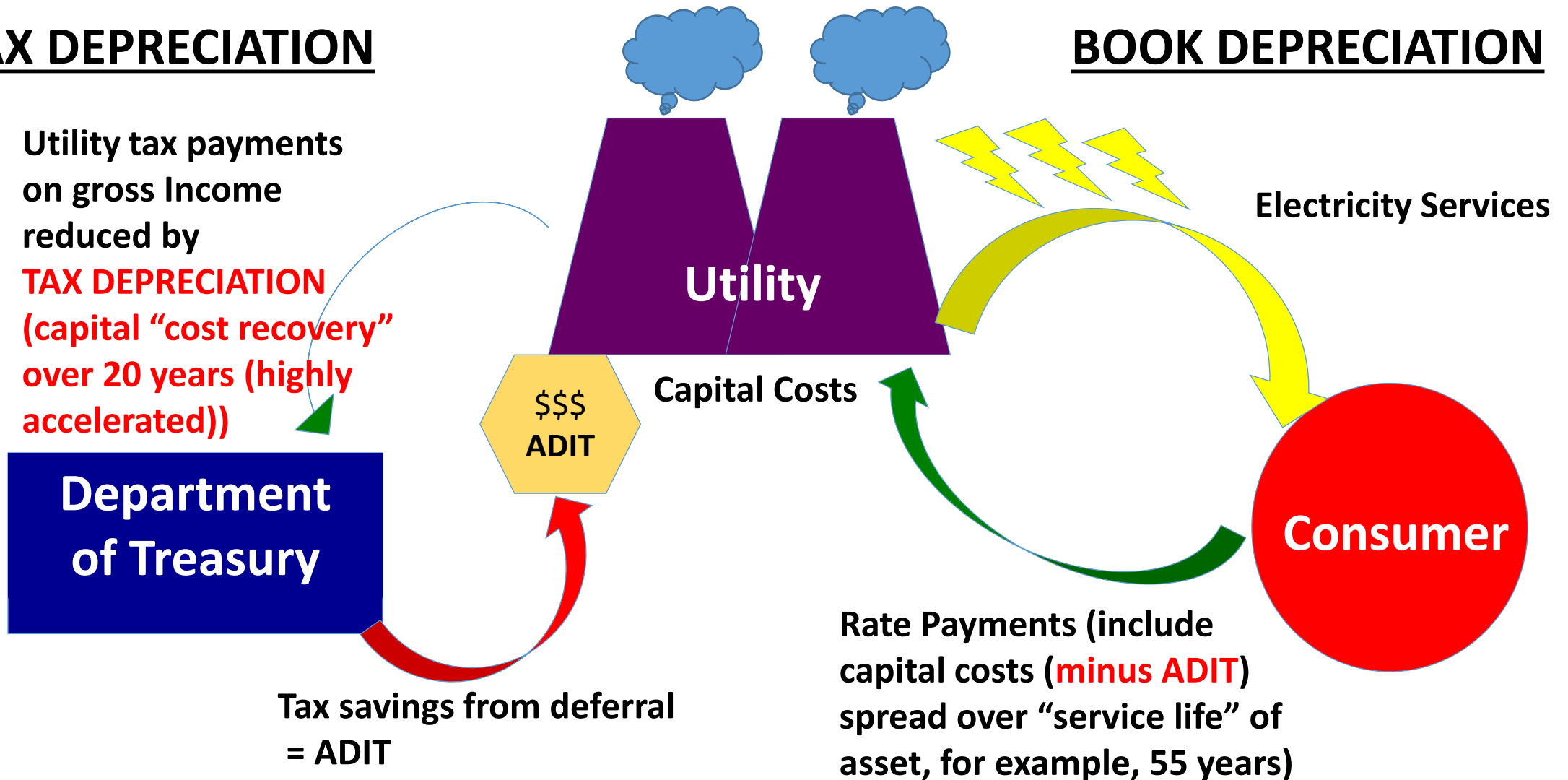
**Utility**

## BOOK DEPRECIATION

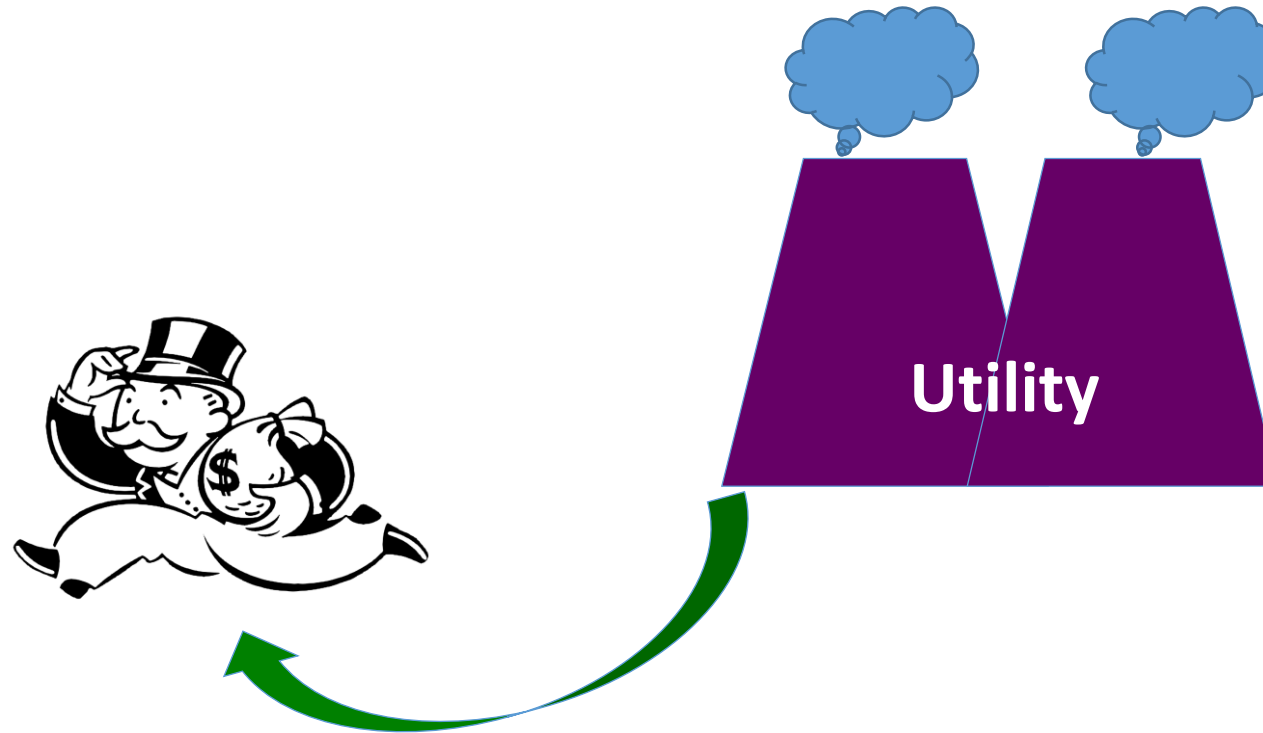
Electricity Services

**Consumer**

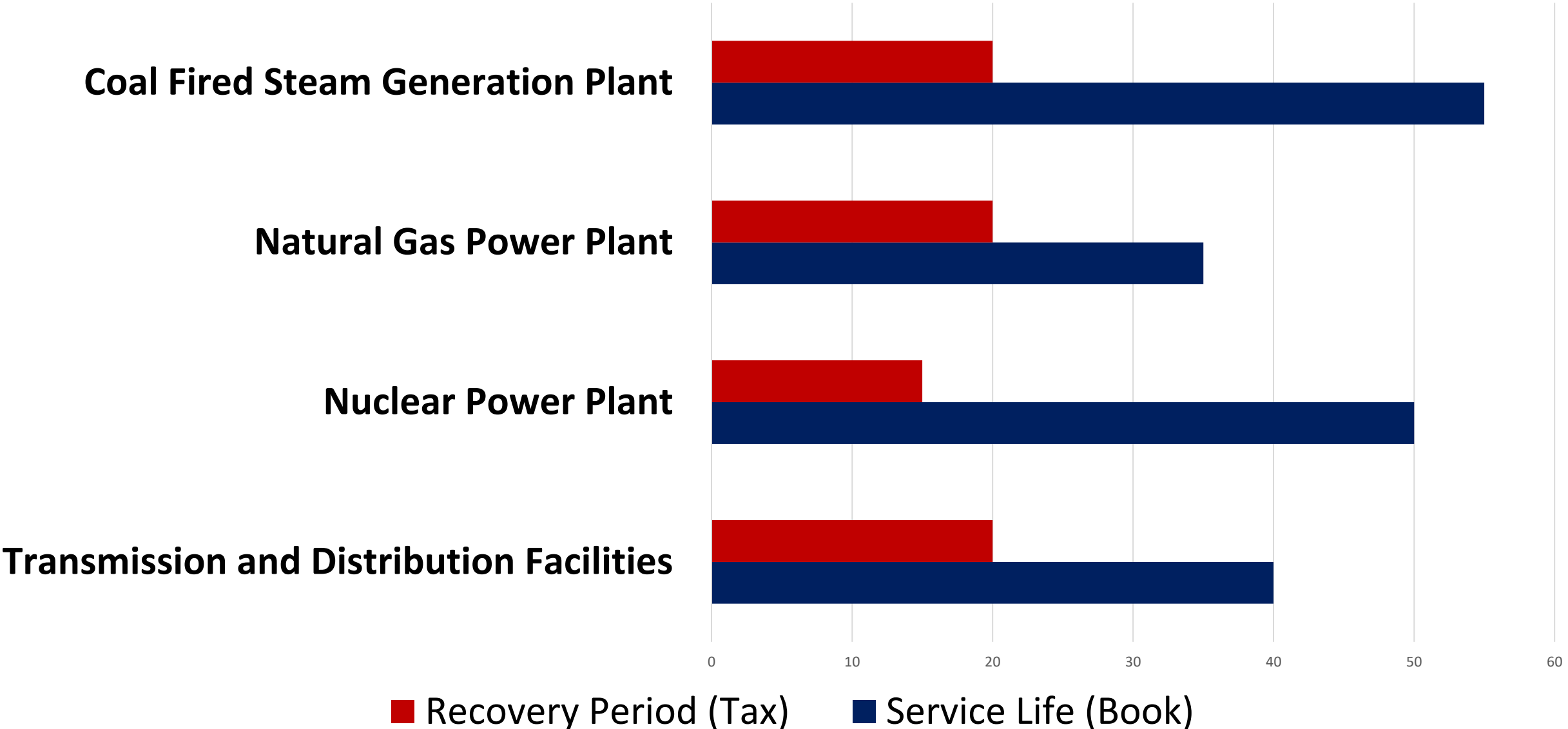
Rate Payments (include capital costs (**minus ADIT**) spread over “service life” of asset, for example, 55 years)



# Investment-backed Expectations

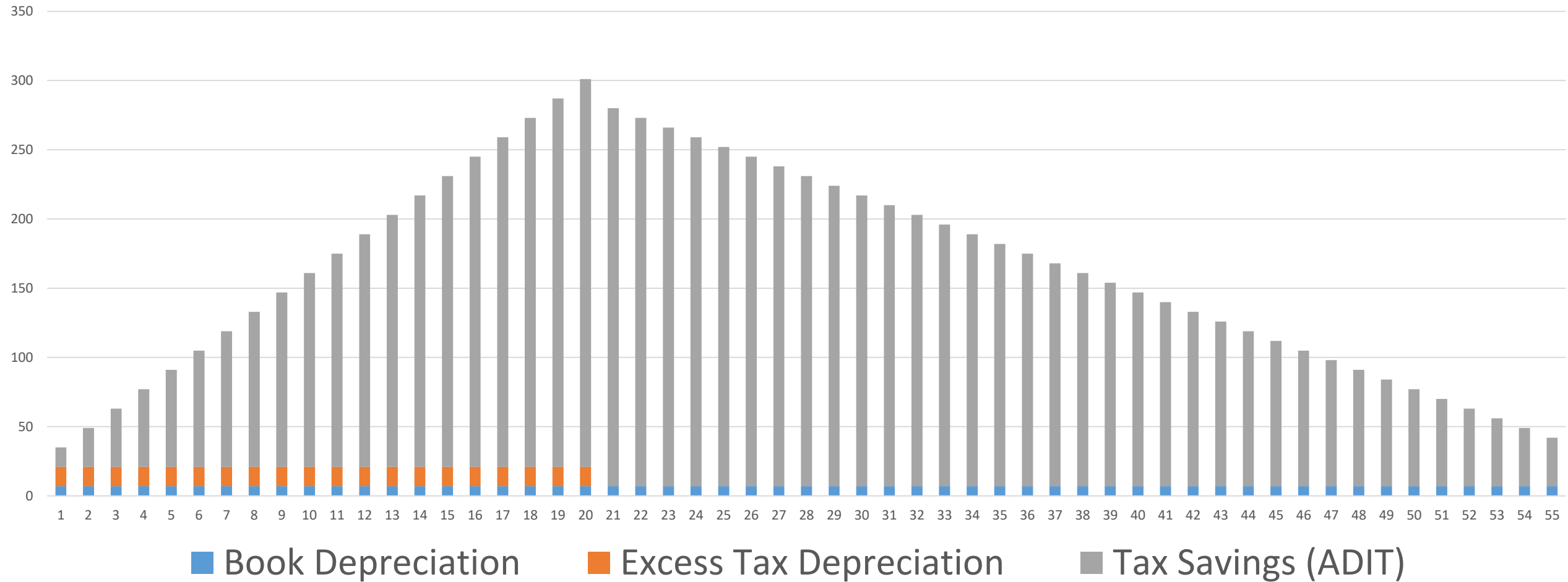


# Contrast Asset Service Life (Book) versus MACRS Recovery Period (Tax)

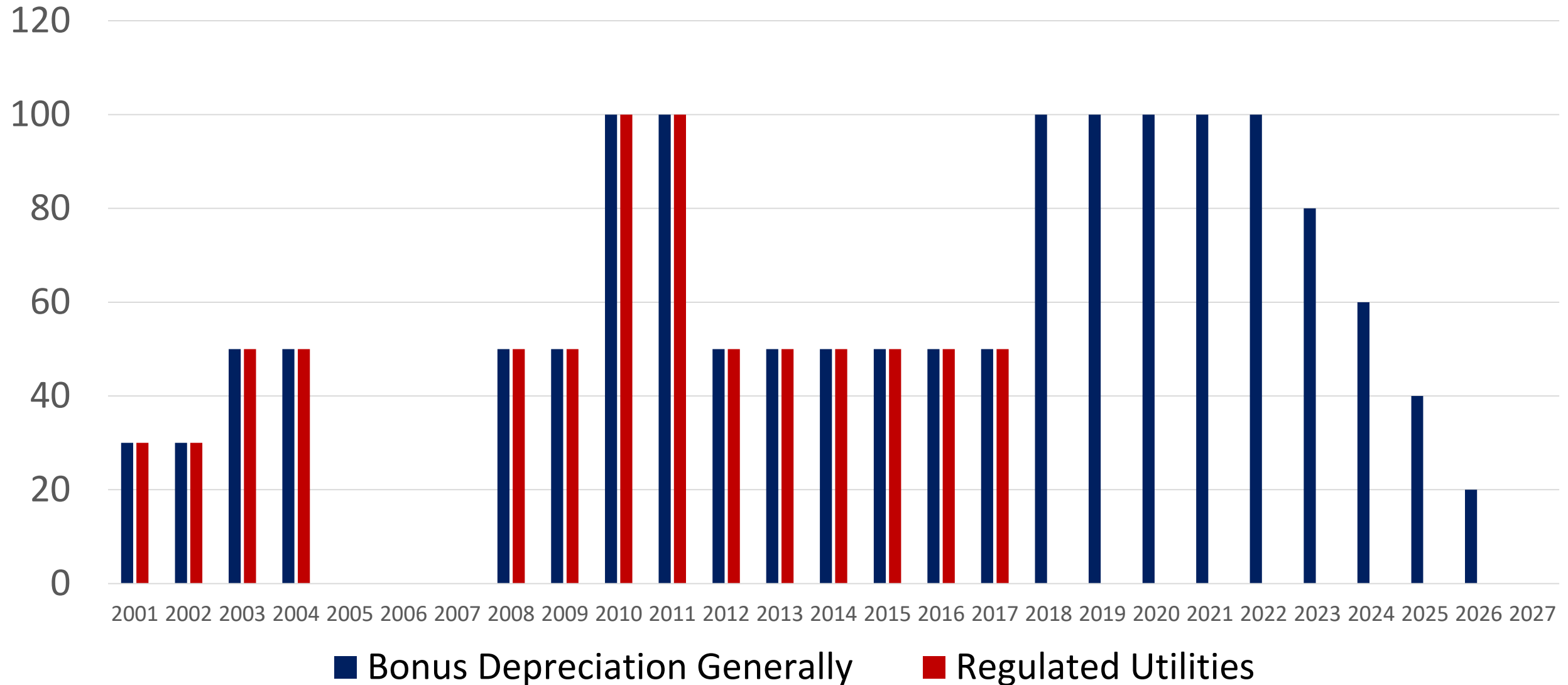


# Accrual and Pass-through of ADIT (Tax Savings) from Shorter Depreciation Period under MACRS

## Accrual ADIT from Shorter Depreciation Periods under MACRS at 35% Corporate Tax Rate



# Bonus Depreciation 2001- 2027



# Accrual and Pass-through of ADIT (Tax Savings) from 100% Bonus Depreciation

Accrual and Application of ADIT under  
100% Bonus Depreciation, at a 35% Corporate Tax Rate



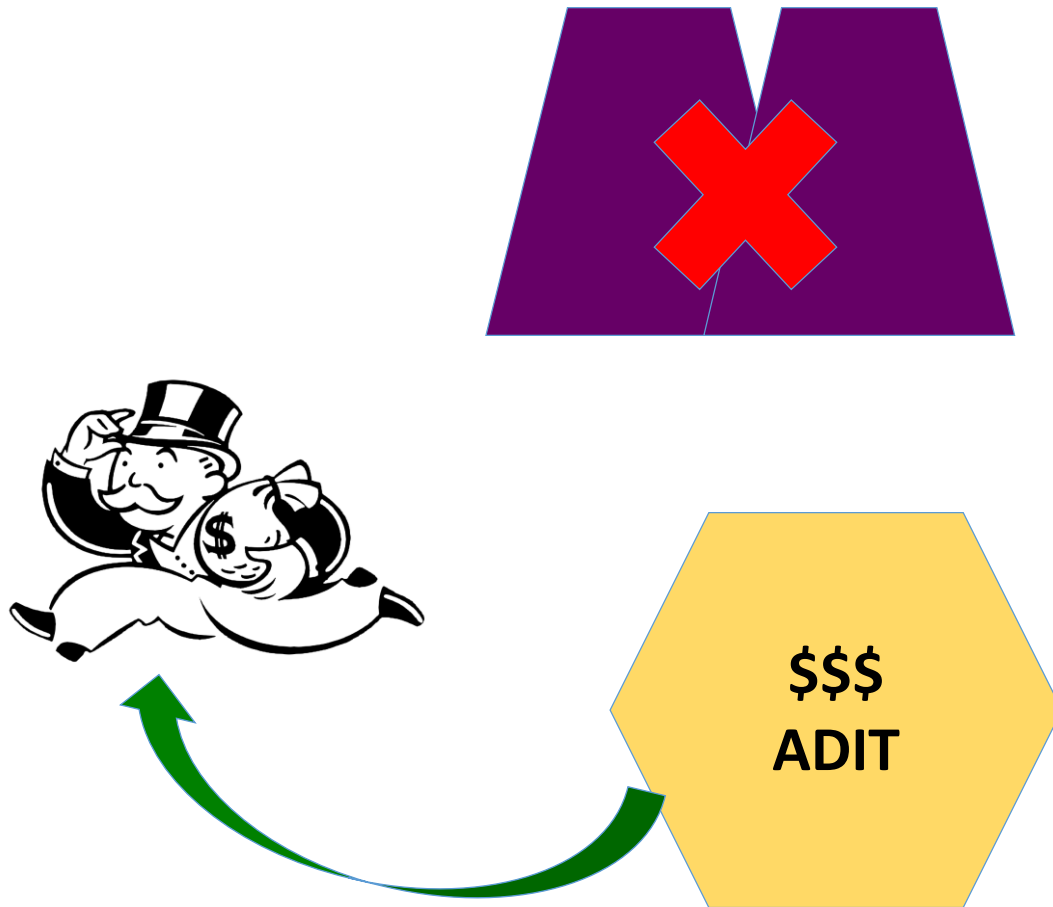
**BROKE**



**IMPACTS OF  
REGULATION:  
Plant Closures  
& Conversions  
to Natural Gas**

**To combat  
climate change,  
Natural Gas  
Plants will also  
(eventually)  
need to close.**

# Accumulated Deferred Income Taxes (ADIT)



**1<sup>ST</sup> SOURCE OF RECOVERY:**  
**BOOK DEPRECIATION**  
**(Costs previously passed through to Consumers).**  
**NOTE: Some recently retired plants were in operation well past their service life and had been fully depreciated.**

**2<sup>ND</sup> SOURCE OF RECOVERY:**  
**ADIT and Excess ADIT**

## Property Plant and Equipment (in millions)

103,542 Placed in service

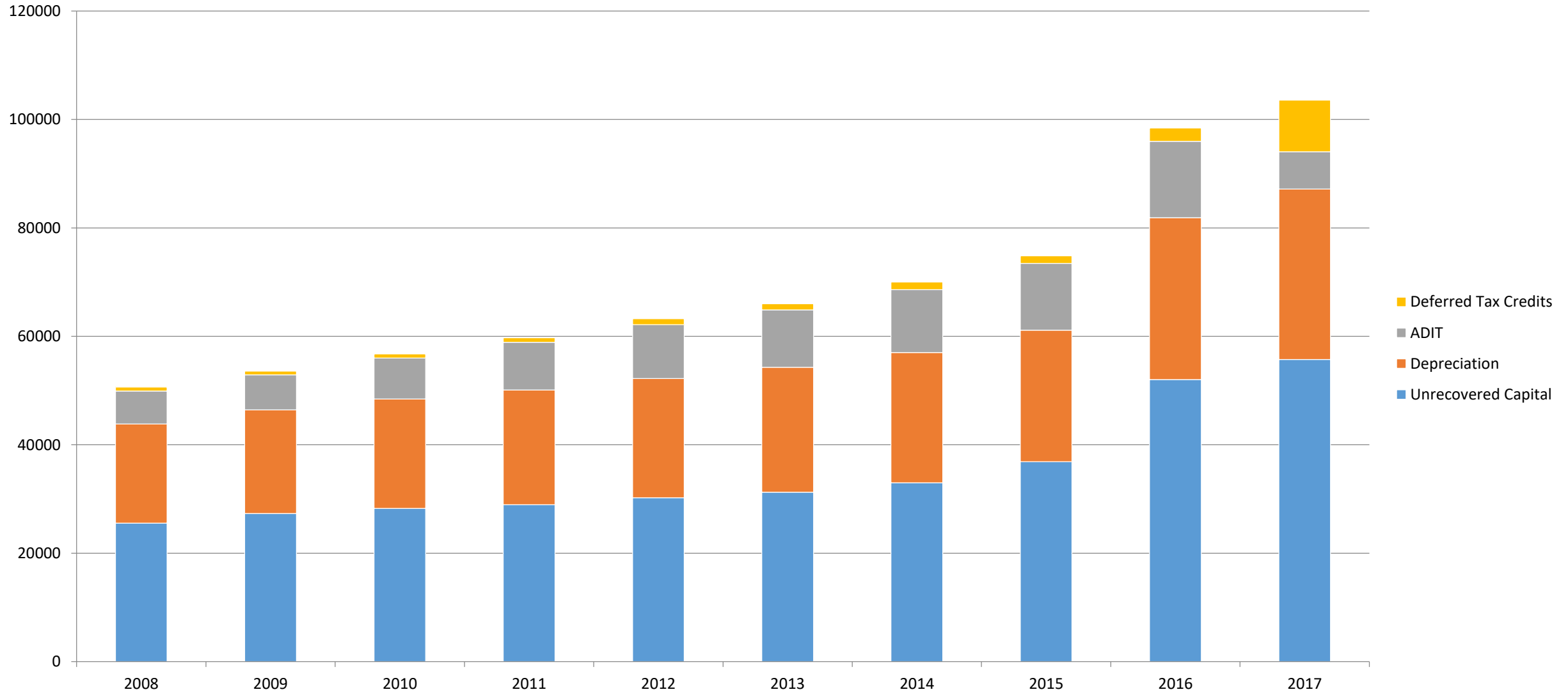
- 31,457 Depreciation taken (under Financial Accounting Rules)

72,085 Plant in Service Net of Depreciation (under Financial Accounting Rules)

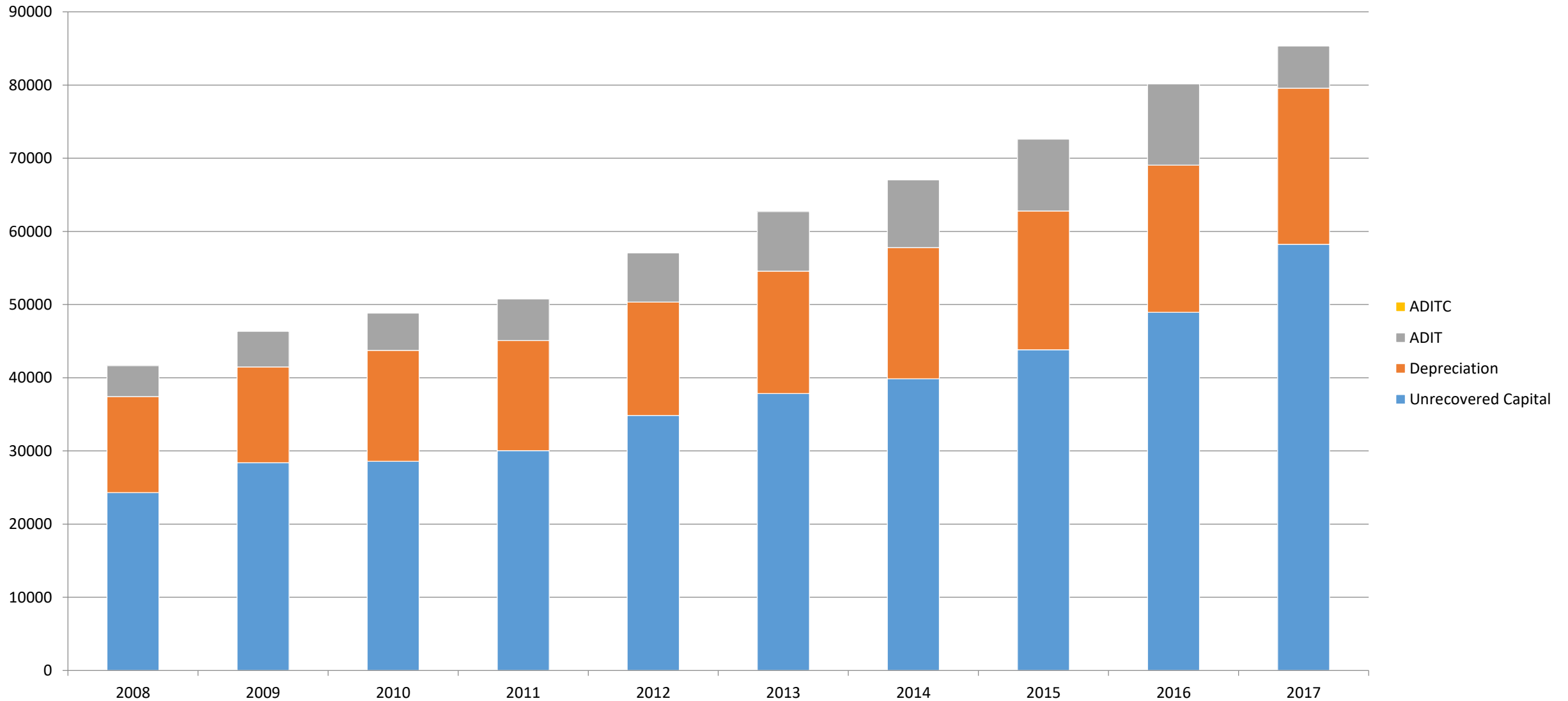
- 27,573 Tax Savings from accelerated depreciation (\$6,842 Accumulated Deferred Income Taxes + \$7,256 / .35 in Deferred Tax Credits)

\$44,512 Remaining unrecovered capital

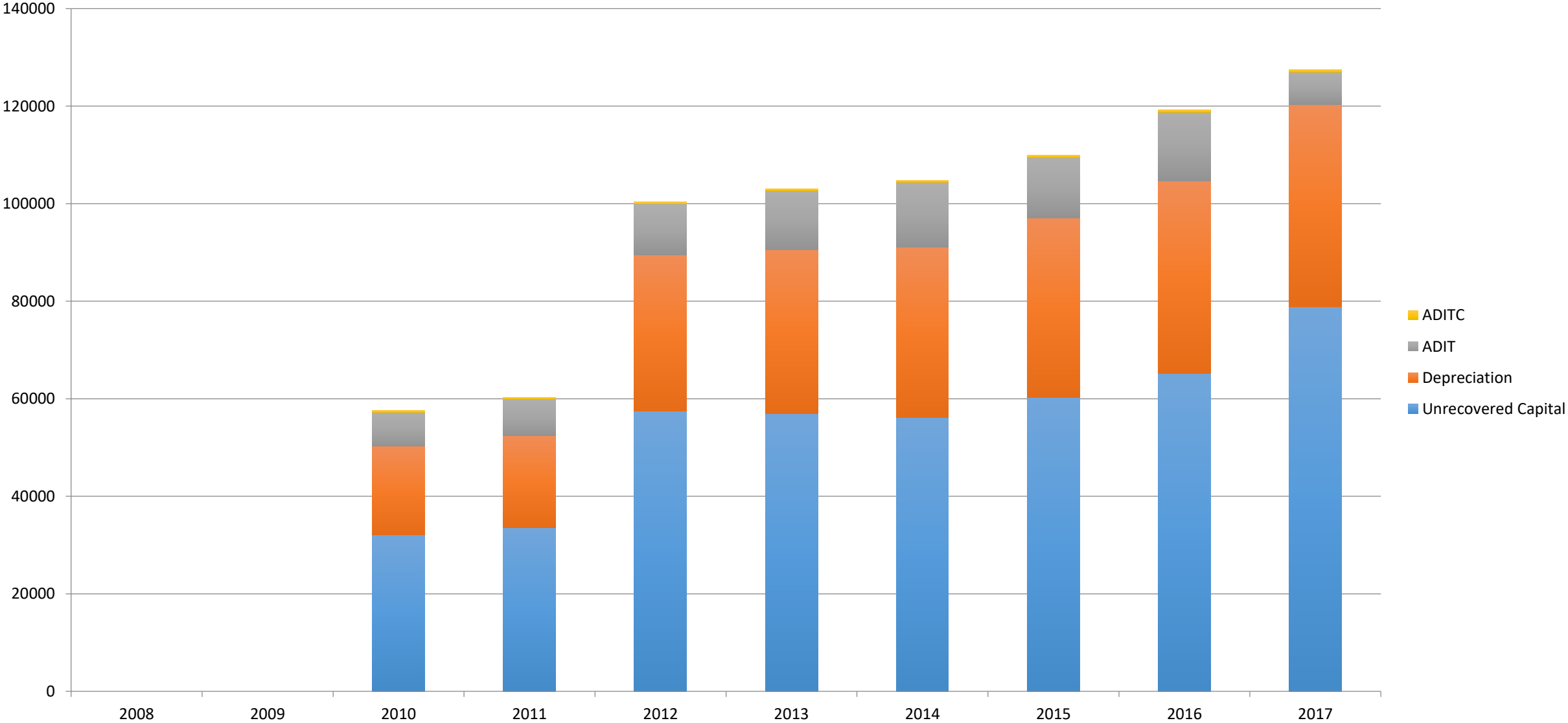
# Southern Company (Georgia and Alabama)



# NextEra (Florida)



# Duke Energy (North Carolina)

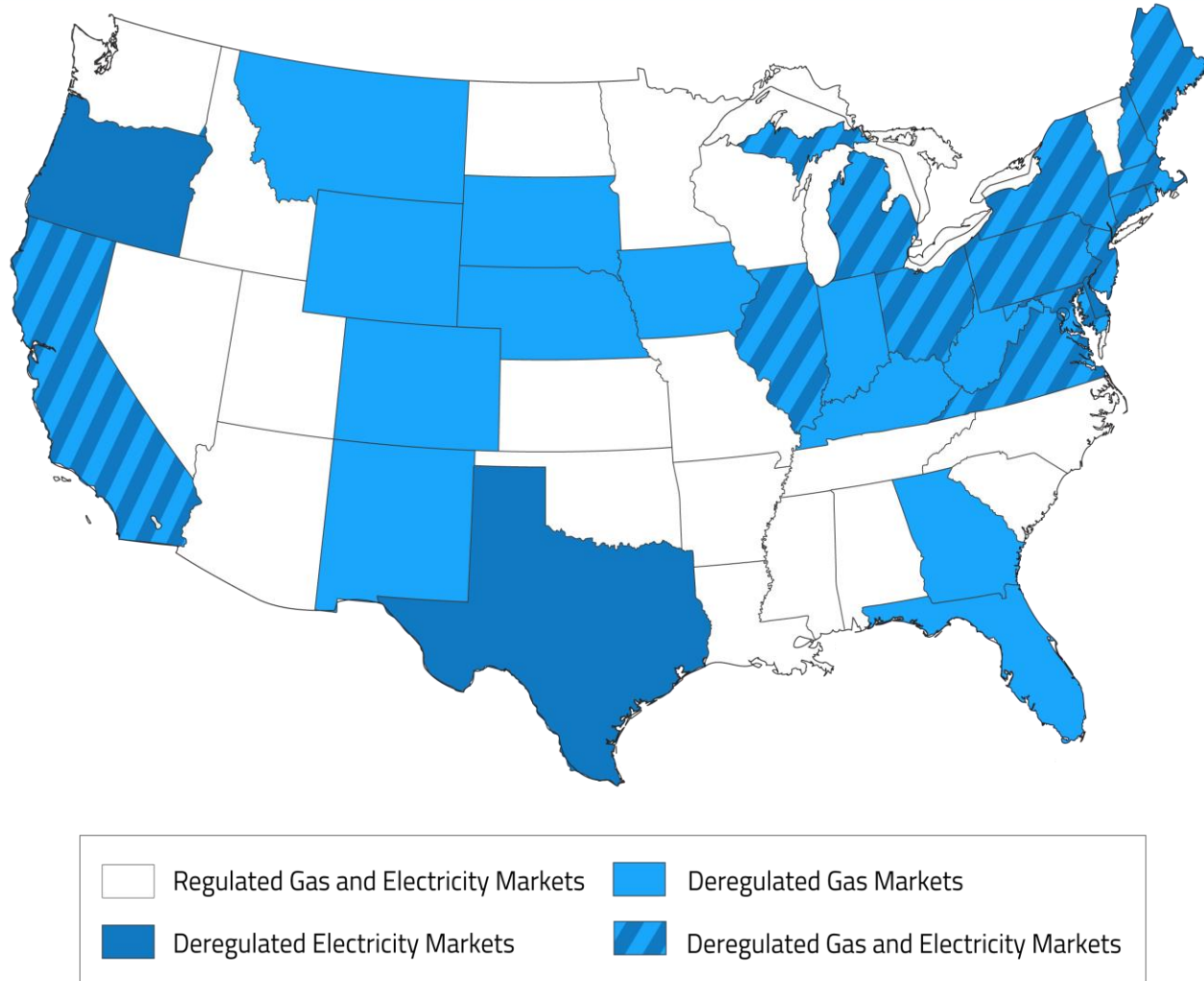


# Remaining Capital at Risk for Regulated Utilities

Total PPE in Service	Total Book Depreciation	Total Unrecovered Capital	% Capital to be Recovered	ADIT	% Capital At Risk after ADIT
\$730.07 Billion	\$217.62 Billion	\$513.06 Billion	70.3%	\$118.1 Billion	54.1%

As of 2016 Accumulated Deferred Income Taxes provided a pool of savings that would reduce stranded assets by an additional 16.2% on average.

# Formula for Rate-Setting



## Electric Choice

<https://www.electricchoice.com/map-deregulated-energy-markets/>

$$R = 0 + (V - \text{ADIT} - D)r$$

- **R**: the utility's total revenue requirement
- **O**: operating expenses
- **V**: gross value of the utility's tangible and intangible property
- **D**: accrued depreciation
- **V – D**: the utility's current capital investment (“rate base”)
- **r**: rate of return a utility is allowed to earn on its rate base
- **ADIT: Accumulated Deferred Income Taxes**

# Concerns about Existing Rules

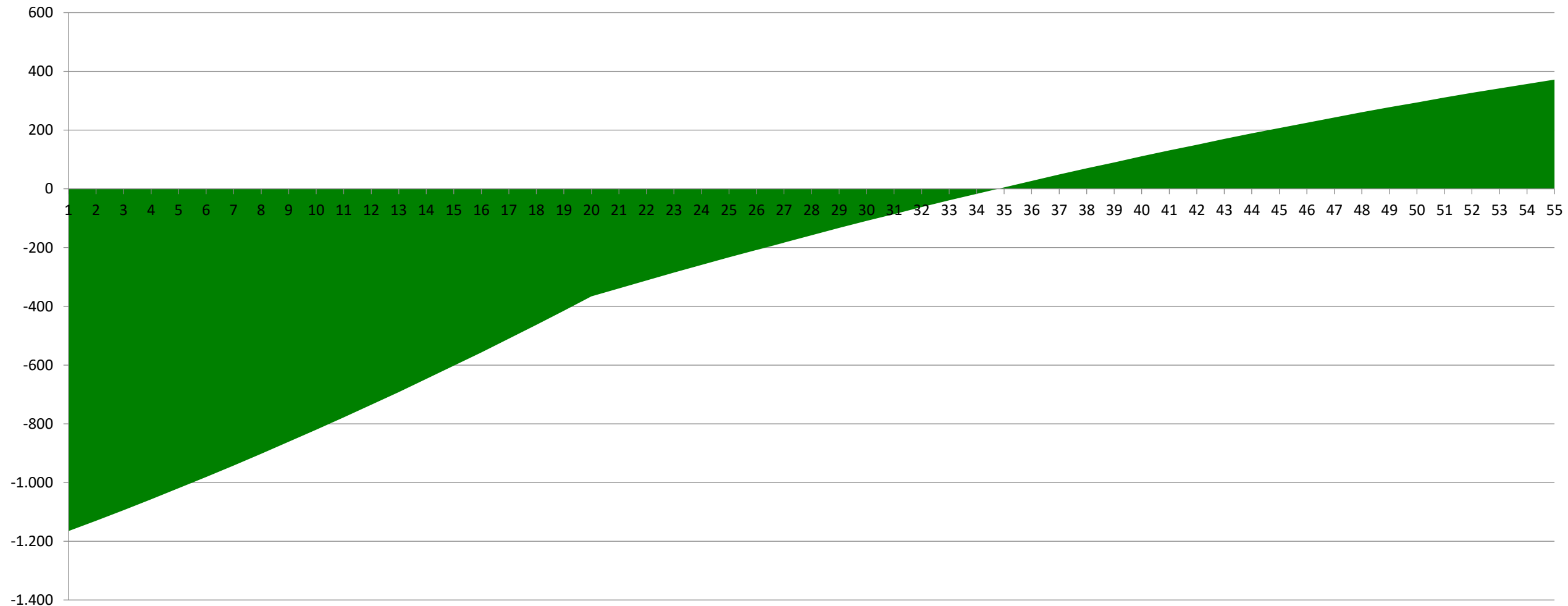
**1. Pass-through of Returns to ADIT to Consumers.** Regulated Utilities currently pass all of the returns to tax savings from accelerated depreciation through to consumers under the tax and rate-setting regulations.

**Problem: Consumers enjoy discounts in electricity rates, increasing waste, pollution and climate change impacts.**

**Solution: Change the tax and regulatory rules to stop the tax benefit passthrough to consumers. Instead, charge the returns to ADIT to a retirement reserve for release when climate change legislation is passed. Use ADIT and its returns as an insurance pool to cover stranded costs.**

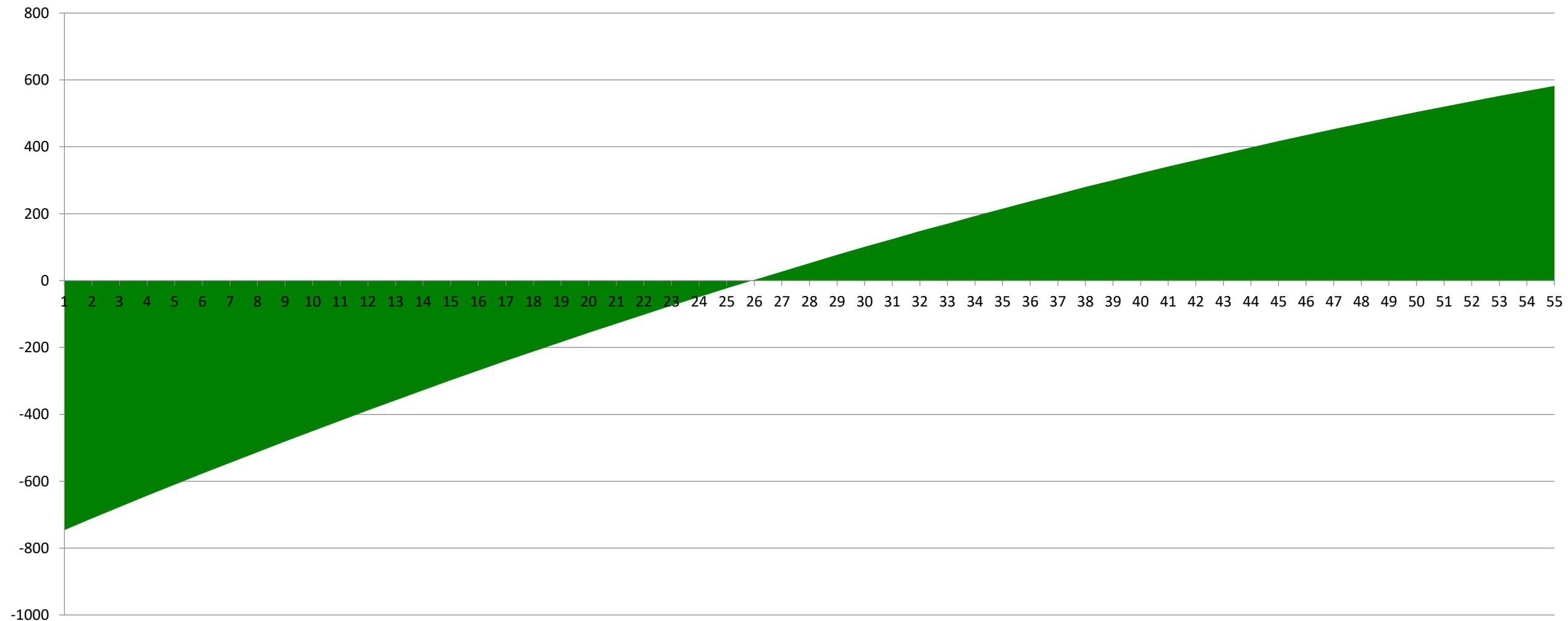
# Time to Full Recovery If Returns (5%) to Tax Savings from MACRS Delivered to Investors

**Capital Recovery for \$1.2 million investment (Coal-fired Power Plants), with  
55 year service life, 20-year MACRS, 5% Compound Interest**



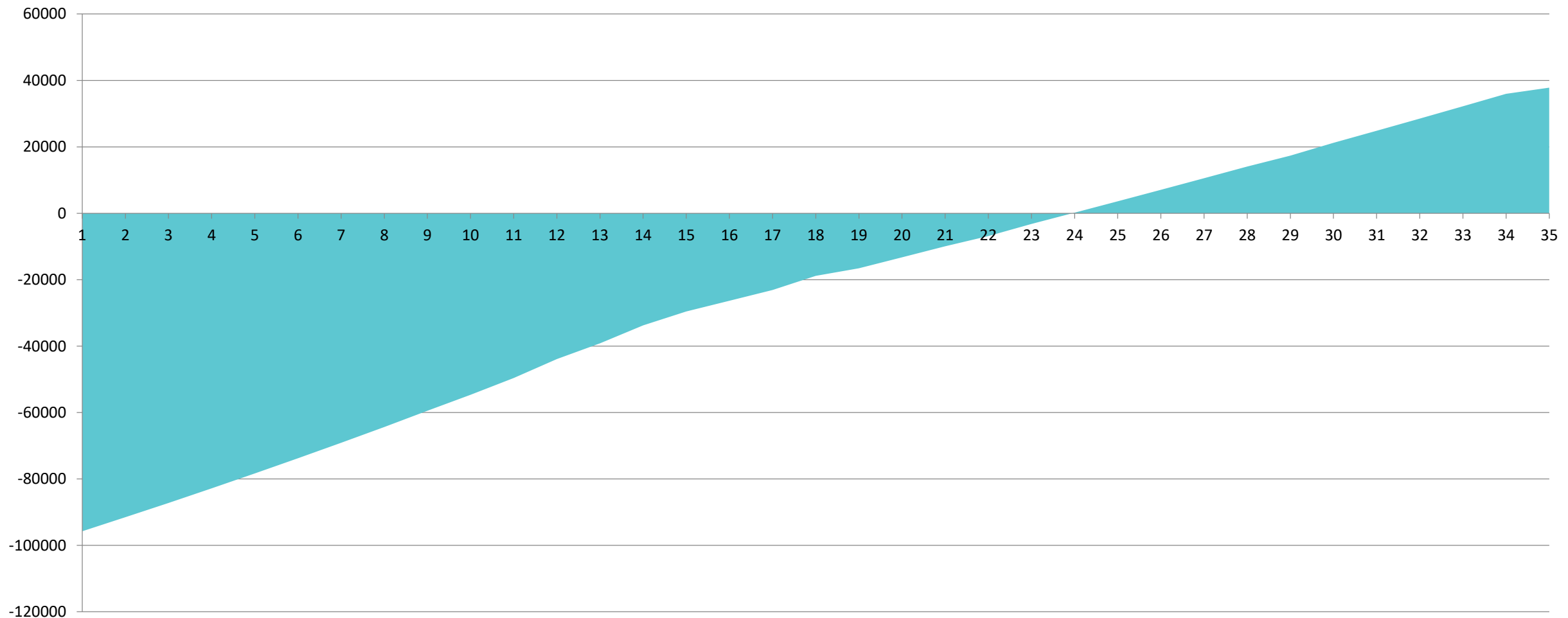
# Time for Full Recovery If Returns (5%) to Tax Savings from Bonus Depreciation Delivered to Investors

**Capital Recovery for \$1.2 million investment (Coal-fired Power Plant), with 55 year service life, 100% Bonus Depreciation, 5% Compound Interest**



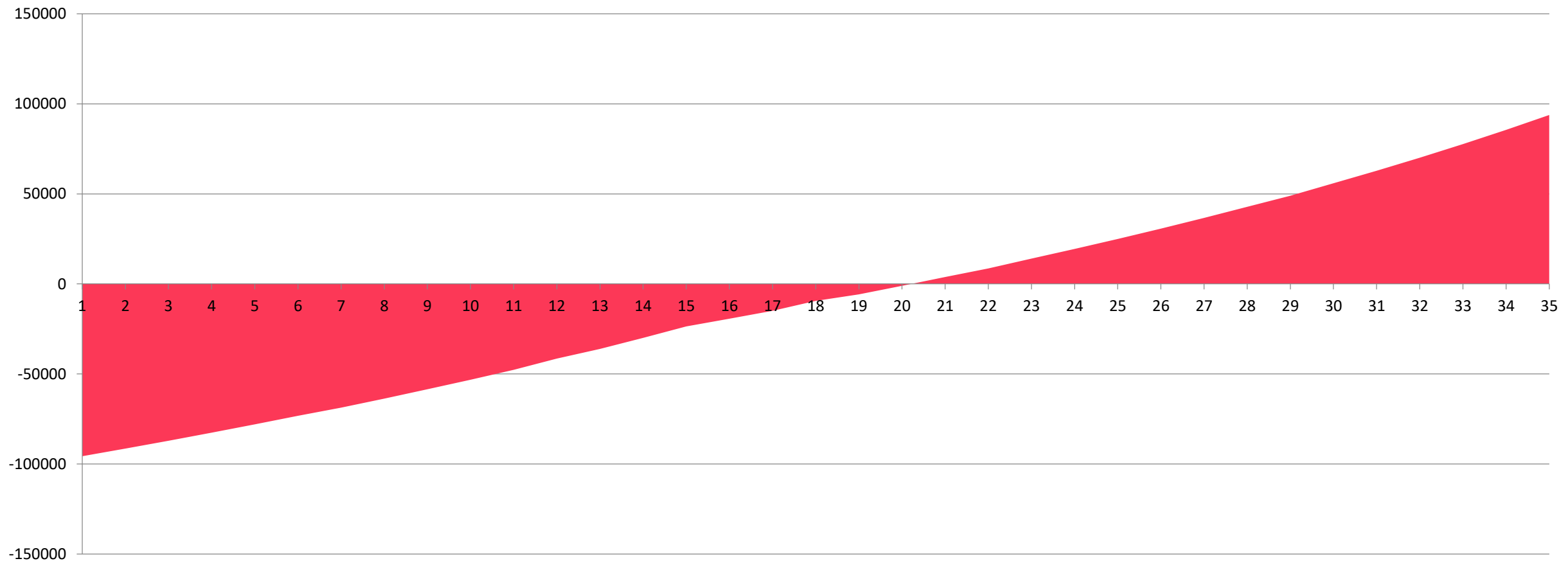
# Time to Full Recovery If Returns (5%) to Tax Savings from MACRS Delivered to Investors

## Capital Recovery with 15-year MACRS over 35-year service life, 5% Compound Interest (Natural Gas Facilities)

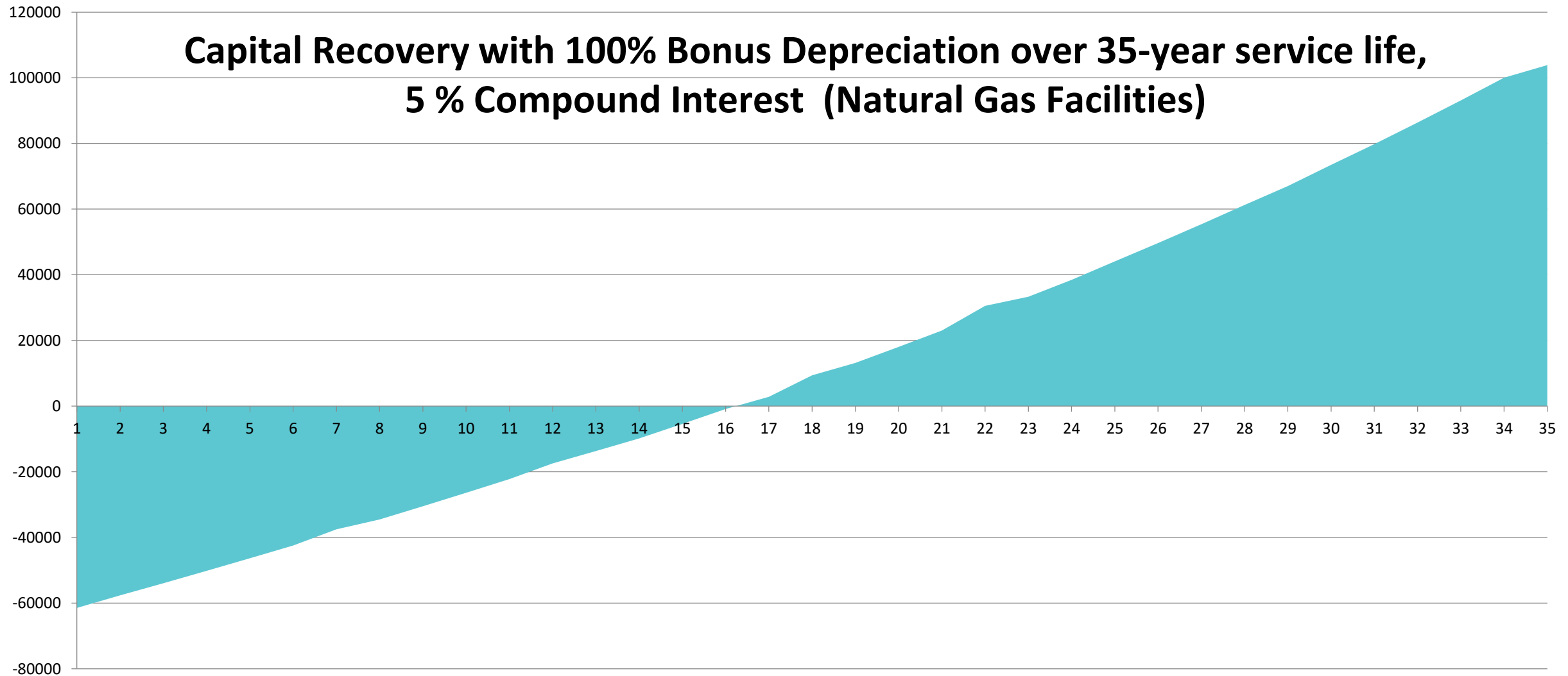


# Time to Full Recovery If Returns (7%) to Tax Savings from MACRS Delivered to Investors

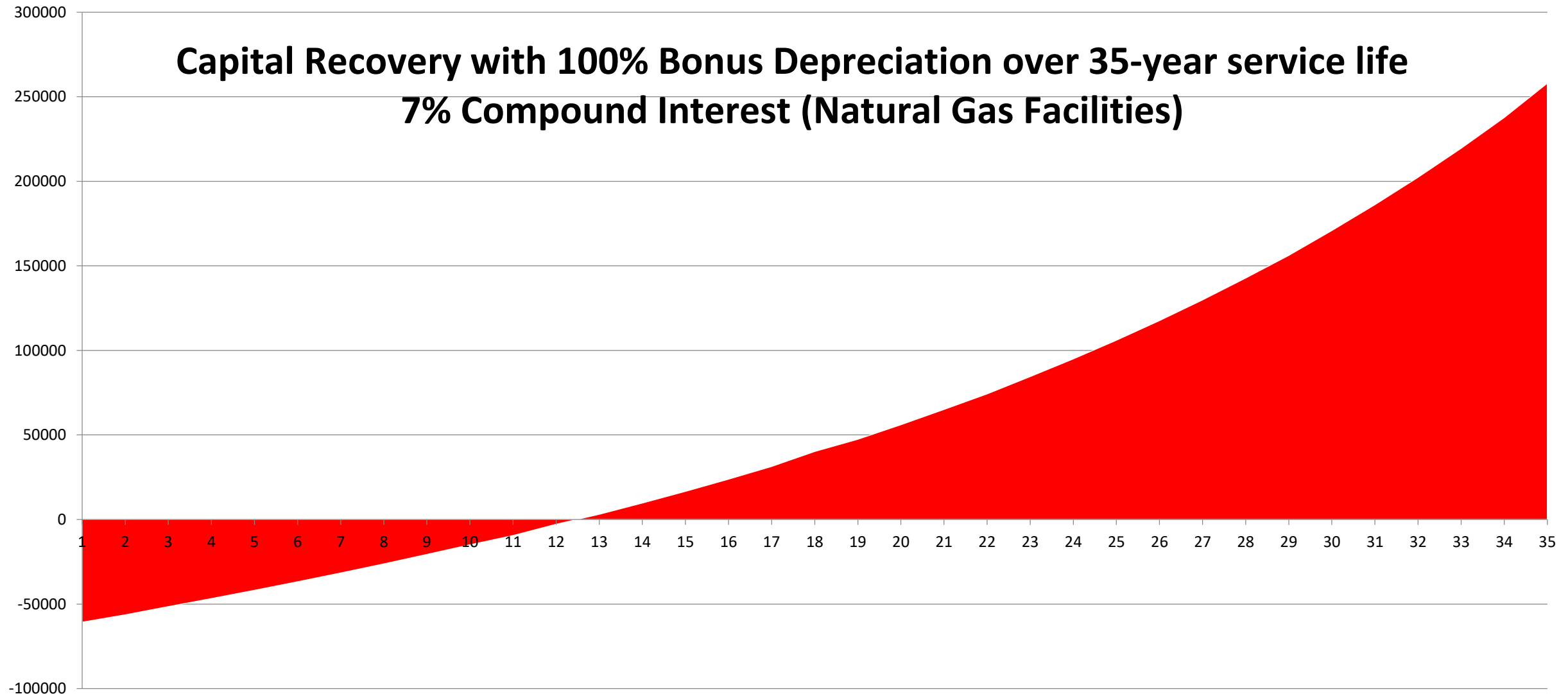
## Capital Recovery with 15-year MACRS 7% Compound Interest (Natural Gas Facilities)



# Time for Full Recovery If Returns (5%) to Tax Savings from Bonus Depreciation Delivered to Investors



# Time to Full Recovery If Returns (7%) to Tax Savings from MACRS Delivered to Investors



**2. Demands for Excess ADIT.** The TJCA of 2017 reduced corporate income tax rates from 35% to 21%. State officials are demanding that the Excess ADIT be used to reduce current consumers' electricity rates.

**Problem: This will further reduce electricity rates, increase electricity use, and multiply the negative externalities from pollution and climate change.**

**Solution: Don't do it. Maintain the Excess ADIT as an insurance pool to cover the costs of stranded assets.**

**3. Securitization of Unrecovered Asset Costs.** Coal-fired power plants are closing. Public utilities have asked Public Service Commissions to allow them to issue bonds to immediately pay investors for their stranded assets, with the ratepayers to repay the bonds over time.

**Problem: This requires consumers to pay twice for assets they may have already paid for. It also allows utility investors to enjoy the economic benefits of an interest free loan from the government.**

**Solution: Don't do it. Use the ADIT to offset stranded assets.**

- I argue for allocating returns to ADIT and Excess ADIT to a Retirement Reserve to be released to investors upon implementation of effective climate regulation.
- Without these conditions, a change to FERC and Tax Policy to allow Investors to enjoy ADIT immediately would likely:
  - encourage overinvestment in fossil fuel infrastructure and assets, and
  - generate further carbon lock-in.

When linked to effective pollution and climate change regulation, the policy change has a number of attractive features:

- **Salient:** Tax and regulatory change should be explicitly characterized as a payoff to investors in utilities to reimburse stranded asset claims.
- **Cheap:**
  - Tax and regulatory change would only shift the incidence of the tax subsidies currently available; does not increase the amount of tax subsidies or otherwise effect the federal budget.
- **Precise:**
  - the period for recovering any remaining stranded assets could be designed to track the phase-in of environmental controls and any increase in stringency.
  - Completion of cost recovery could be designed to match the phase-out period or elimination of fossil fuel based technology.
- **Flexible:** Delays can be accommodated by charging any additional returns to ADIT during that prolonged period as a return of capital.

# Tax / Book Disparities in Other Jurisdictions

Tax Follows Financial & Regulatory Accounting for Depreciation	Comments	Tax DOES NOT Follow Financial & Regulatory Accounting for Depreciation	Comments
Argentina	Yes, for moveable property	Australia	No
Brazil	Yes	Canada	No
France	Yes	China	No
Germany	Yes	India	No
Italy	Yes	Japan	No
Korea	Yes	Kuwait	No
Netherlands	In principle, with adjustments.	Malaysia	No
Portugal	Yes	Mexico	No
Spain	Yes, but subject to corporate income tax limits	Nigeria	No
Sweden	Yes	Russia	No
Turkey	Yes	Saudi Arabia	No
		Singapore	No
		South Africa	No
		United Kingdom	No for tangible assets; Yes, for intangible assets
		United States	No



Thank you!