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Energy Income Partners, LLC claims compliance with the Global Investment Performance Standards (GIPS®). Energy Income Partners has been independently verified for the periods October 2003 to December 2020.

#### The Firm

Energy Income Partners, LLC (EIP) is an independent investment management firm established in 2003. In November 2004, EIP became affiliated with Pequot Capital Management until August 2006, at which time the firm re-established its independence as Energy Income Partners, LLC. In June 2006, EIP registered as an independent investment advisor with the United States Securities and Exchange Commission. EIP manages and sub-advises a variety of funds and portfolios whose primary investments are concentrated in the energy industry.

For a compliant presentation, verification report, and /or the firm's list of composite descriptions, please contact Energy Income Partners, LLC at 203-349-8232 or ir@eipinvestments.com.

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For more information, contact: Energy Income Partners LLC at 203-349-8232 www.eipinvestments.com

# EIP

# Energy Income Partners, LLC

Is The Energy Transition Dead?

March 17, 2022









Energy Income Partners, LLC claims compliance with Global Investment Performance Standards (GIPS®).



### **EIP Overview**

### The Firm

- Founded in 2003
- AUM = \$4.8 Billion\*
- 21 employees, 18 of which have an ownership or profit interest.
- Research Team of 7 has 180+ years of experience
- Expert testimony U.S. Senate and U.S. Federal Energy Regulatory Commission

### Current Tiedemann Model Portfolio\*\*

- "Poles & Wires, Pipes & Tanks"
- Legal and natural <u>monopolies</u>
  - Cost-plus profit model
  - Stable & growing assets ⇒stable and growing earnings
- Seek to own the <u>low-cost</u> way of shipping the <u>lowest cost energy</u>
- Quality: management, earnings, balance sheet, assets
- Yield 4.0%
- Historic EPS Growth 7-10%
- Portfolio P/E 14x

<sup>\*</sup> as of January 31, 2022

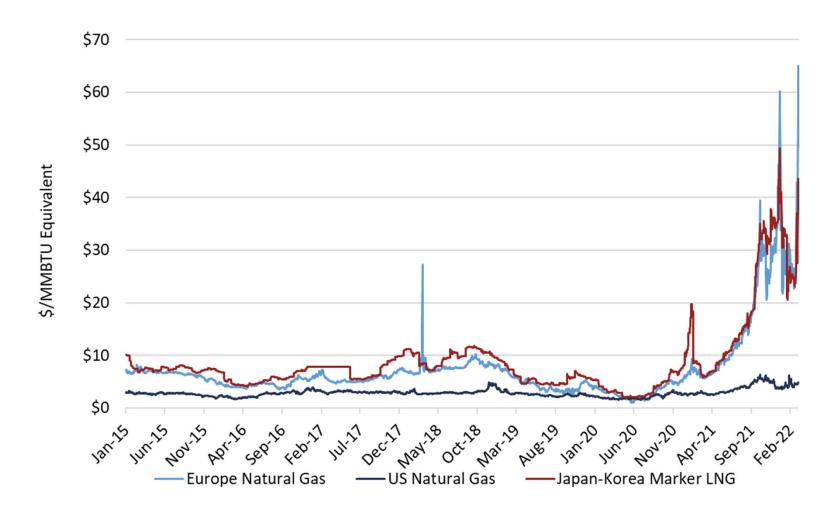
<sup>\*\*</sup> Please see slide 32 for further discussion and disclosure regarding the Yield, Growth, and Valuation information shown above. The Portfolio is the Current Tiedemann Model Portfolio. EIP clients including clients in the Tiedemann portfolio may have a materially different experience than shown above.

### **Outline**

- Supply & Demand Fundamentals of Energy
  - Demand
  - Supply
  - The Energy Transition
- Inflation and Interest Rates
  - Cost plus regulated utility model
  - Impact of interest rates on valuation
- Our Portfolio
  - Dividends, earnings and price
  - Yield, Growth, Valuation

# Price Spike in Natural Gas Prices: U.S., European and Asia

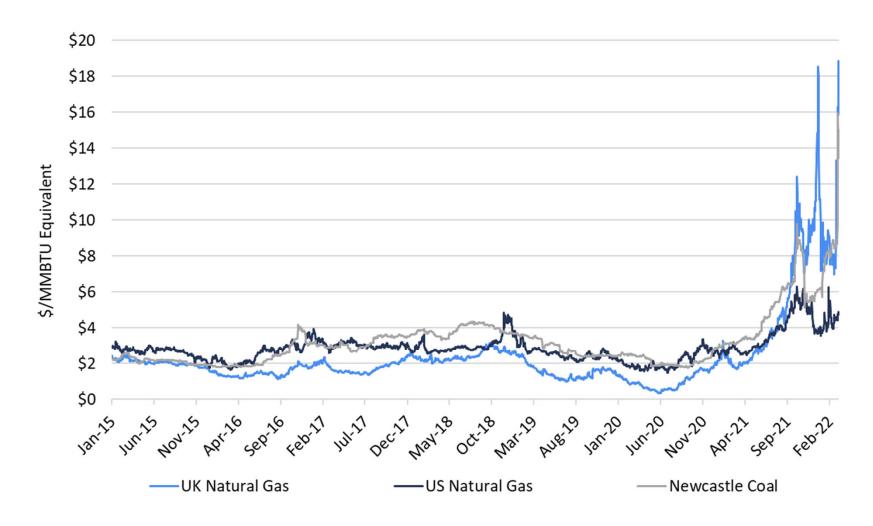




Source: Bloomberg, EIP. Data from 1/1/15-3/4/22.



## Coal Prices Respond to Fuel Switching



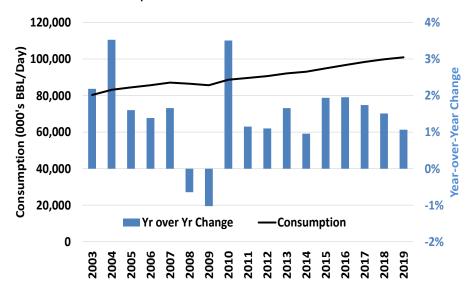
Source: Bloomberg, EIP. Data from 1/1/15-3/4/22.

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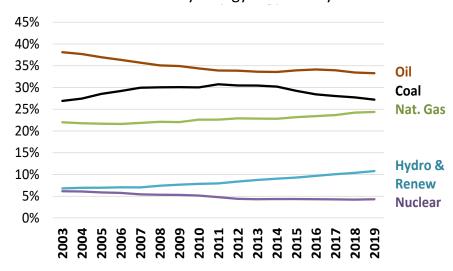


### Pre-Pandemic Demand Trends – Oil and Gas

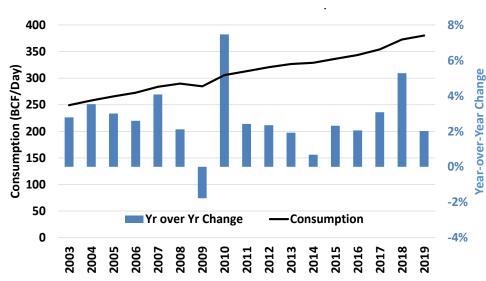
#### Global Oil and Liquid Petroleum Demand 2003-2019



#### Share of Global Primary Energy Demand by Fuel



#### Global Natural Gas Demand 2003-2019



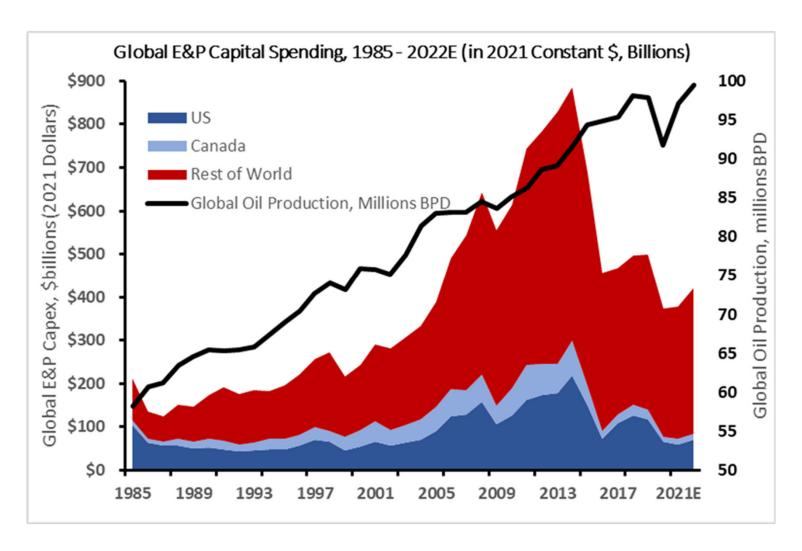
- Renewables and natural gas are stealing share primarily from coal.
- Long downtrend in oil's share decelerated over the last decade

Source: BP Statistical Review of World Energy, June 2020

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## Petroleum Industry Capital Spending History



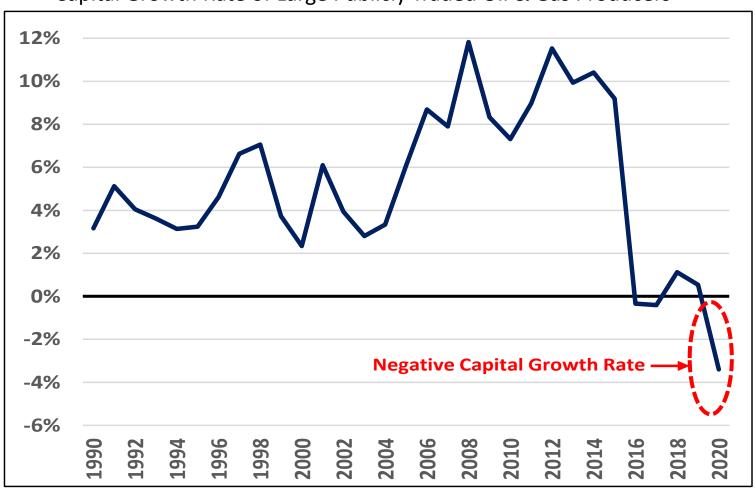
Sources: Evercore ISI Research (using a compilation of Company Data, Salomon Brothers, Salomon Smith Barney, Lehman Brothers, Barclays Capital, and Evercore ISI Research estimates), U.S. Bureau of Economic Analysis, EIA, EIP estimates.

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### Capital Growth Rate of Large Publicly Traded Oil & Gas Producers



(Capex – DD&A)

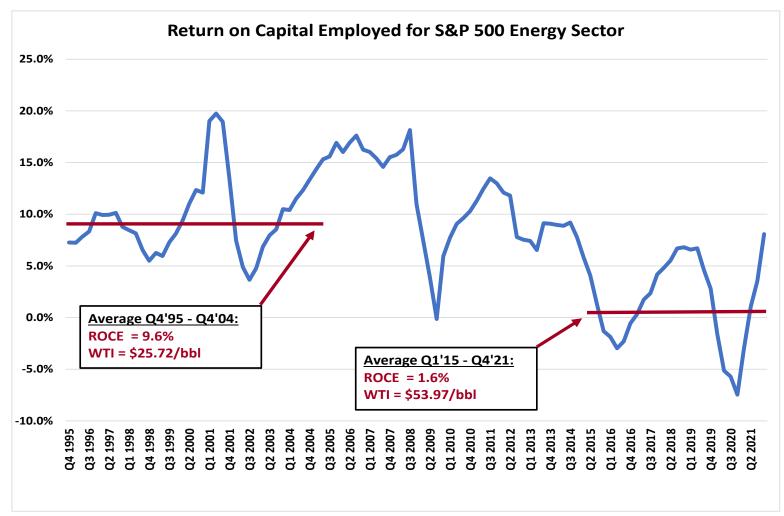
PP&E

Source: FactSet, Bloomberg, EIP Estimates

The above chart calculates the capital growth rate of a composite of major oil companies selected by EIP using annual company reported data sourced from Bloomberg. The composite included the following companies (tickers): XOM, CVX, COP, RDSA LN, BP LN, OXY, EOG, TTE FP, DVN, MRO, APA. Inclusions of other companies may change the information above and EIP's analysis. Inclusions of other companies may change the information above and EIP's analysis.



## Shareholder Revolt Caused by Poor Returns

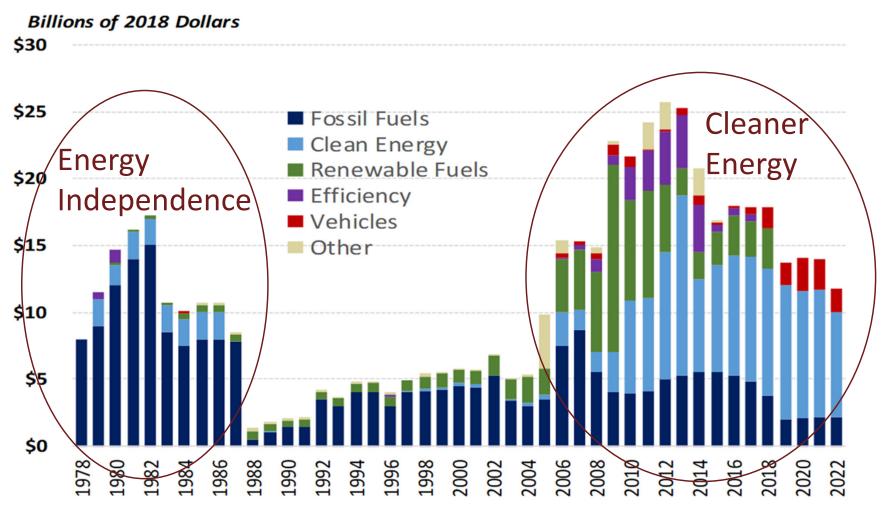


Source: FactSet, Bloomberg, EIP Estimates

The composite included the following companies (tickers): XOM, CVX, COP, EOG, SLB, PXD, OXY, MPC, KMI, WMB, DVN, VLO, PSX, BKR, HAL, OKE, HES, FANG, CTRA, MRO, APA. Inclusions of other companies may change the information above and EIP's analysis. The red line and right-hand side of the above chart calculates the return on capital employed (ROCE) of a composite of major oil companies selected by EIP using annual company reported data sourced from Bloomberg. ROCE = (Earnings plus after-tax interest) / (Total Assets minus Current Liabilities).



### **Energy Transition: Federal Tax Incentives**



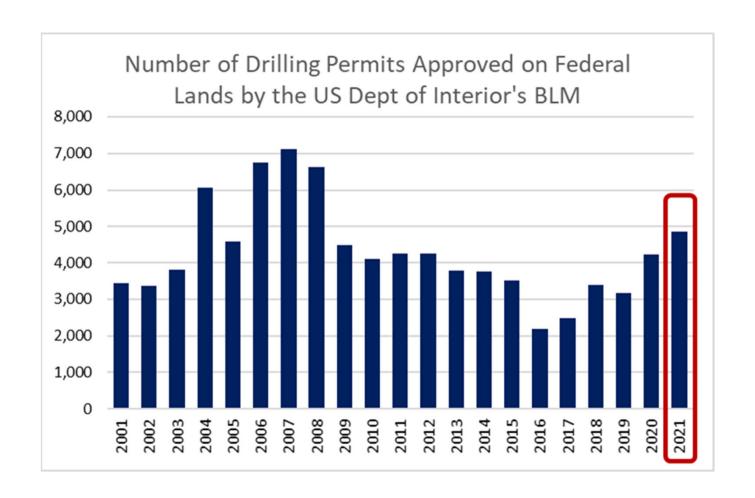
Source: Congressional Research Service: The Value of Energy Tax Incentives for Different Types of Energy Resources - March 19, 2019. Energy tax incentives include the value of (1) energy tax expenditures, as estimated by the JCT; (2) energy tax provisions that offset excise tax liability, such as tax incentives for ethanol and biofuels (through 2015); and (3) outlays that are related to tax provisions, notably outlays associated with Section 1603 grants in lieu of tax credits. Annual estimates are the sum of individual tax expenditures and other tax provisions and do not reflect possible interaction effects. Tax expenditure estimates are based on current law, and thus do not reflect forgone revenues associated with retroactive extensions of expired provisions.

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## **Drilling Permits on Federal Lands**

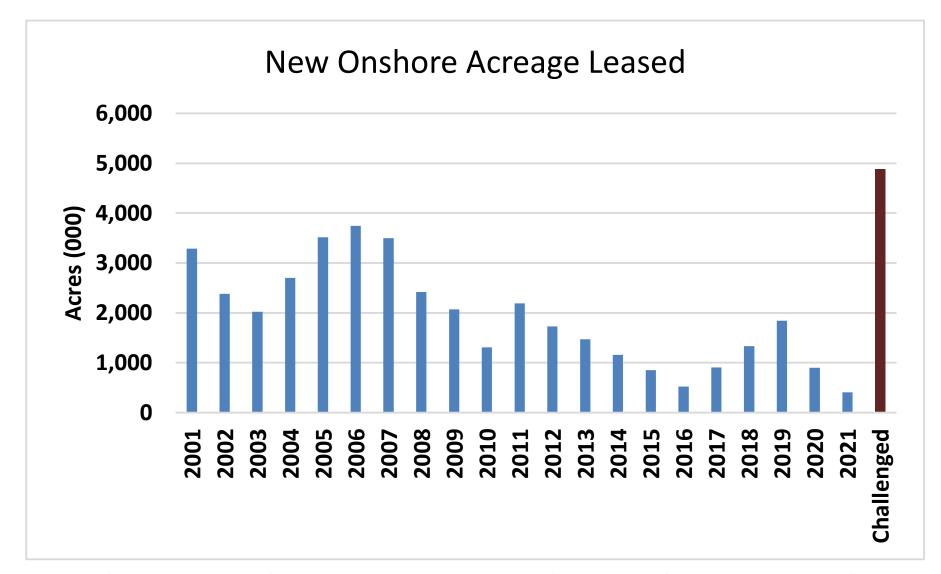


Source: U.S. Department of the Interior Bureau of Land Management (BLM), Oil and Gas Statistics - FY 2021, Table 7 Number of Approved APDs. The table contains the total number of Federal Applications for Permit to Drill (APDs - Federal) by state approved by the BLM each fiscal year. Oil and gas operators may not begin drilling activities on a lease without an approved APD and posted bond.

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# Drop in Newly Leased Acreage Due Mostly to Legal Challenges

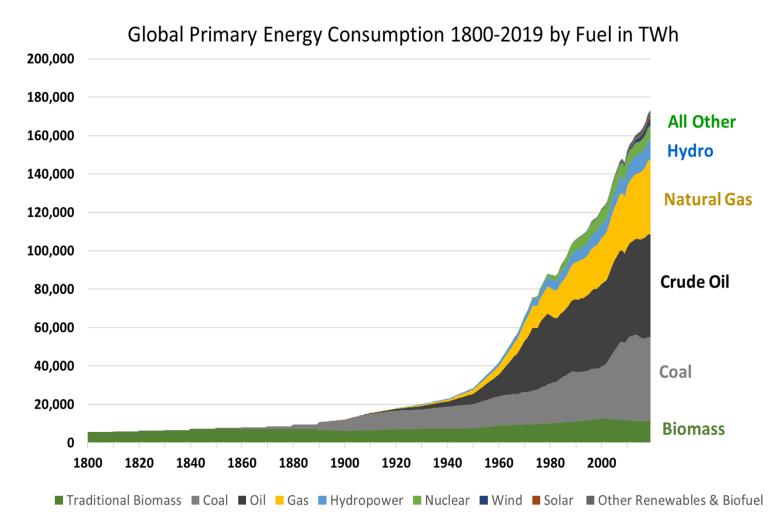




Source: Dept of Interior and Declaration of Peter Cowan, Sr. Leasing Specialist, US Dept. of Interior, Bureau of Land Management, Division of Fluid Minerals before the US District Court for the Western District of Louisiana, May 19, 2021



## **Energy Transition: Long History**



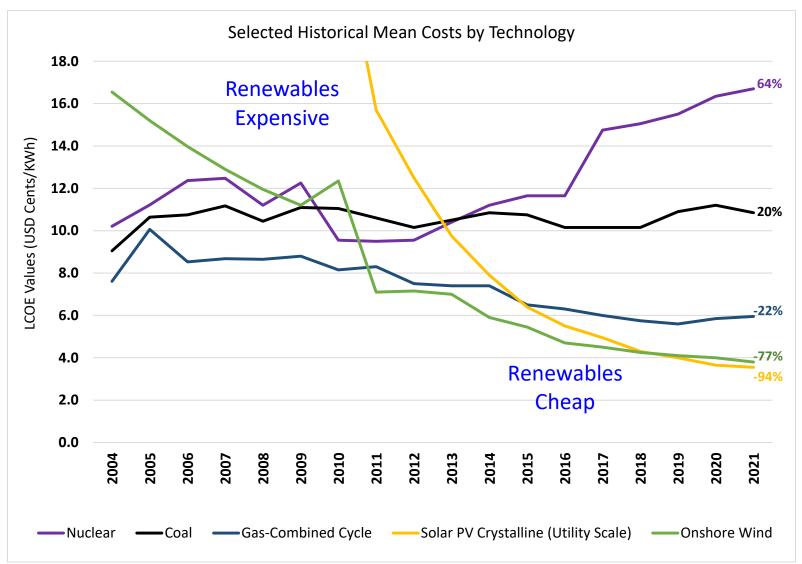
The modern energy system has been transitioning for 150 years towards fuels that are cheaper, more reliable, safer and cleaner.

From 2009- 2019, solar (in red) went from 55 TWh to 1,793 TWh a CAGR of over 40% but try to find the red wedge o n this graph.

Source: Our World in Data as of 12/31/2019



## **Energy Transition: Costs vs Reliability**



Levelized Cost of Energy "LCOE" does <u>not</u> include the cost of making the whole system reliable.

Reliability has a cost and a value.

Source: Lazard's Levelized Cost of Energy Version 15.0, October 2021, EIP. Please see slides 55-56 for additional disclosures regarding both EIP and Lazard's assumptions.

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# Energy Transition is not Dead, it's....well...... Transitioning



- The <u>Energy Transition</u> is transitioning
  - It's [not] just about the carbon, stupid
    - Costs and performance
    - Reliability/resilience
    - Safety
  - It's not just about wind, solar, batteries and fuel cells
    - Seasonal shifts and extreme weather require long-term storage and dispatchable, on-demand power
    - NIMBY-ism against wind and solar farms
    - Carbon Capture, Use and Storage (CCUS)
    - NetPower zero carbon gas turbines
    - Small Modular [nuclear] Reactors (SMR)
  - Size matters: Zero carbon by 2050?
    - 70% of carbon emissions from power and transport sectors
    - Existing infrastructure will lever new technologies (supply and demand)
    - Pipeline and Power utilities will drive decarbonization

# Energy Transition is not Dead, it's....well...... Transitioning – in Their Own Words:



Larry Fink 2020 Letter:

"[Blackrock is]exiting investments that present a high sustainabilityrelated risk, such as thermal coal producers."

Larry Fink 2022 Letter:

"Divesting from entire sectors – or simply passing carbon-intensive assets from public markets to private markets – will not get the world to net zero."

 Ray Dalio in January 2022: "Thank God for the oil producers."

Biden Administration:\*

Granting more drilling permits on federal lands per month than Trump Administration.

# Each cited as issues inflation, social justice, civil discord, etc. In other words, don't forget about the "S" in ESG.

<sup>\*</sup> Source: https://thehill.com/policy/energy-environment/584671-biden-approving-oil-gas-drilling-permits-on-public-lands-at-faster

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# **Energy System Market Structure**

- All industries/systems comprise <u>production</u>, <u>storage</u> and <u>transport</u>
- The energy system has these parts but also two halves:
  - 1. Regulated monopoly "rate-base" assets
    - Cost-plus monopoly business model
    - Stable growing rate-base stable growing earnings
    - Lower cost of financing
    - Assets are mostly transport infrastructure
    - Benefit from energy innovation
    - Public/private partnerships common carrier with "obligation to serve"
    - Eminent domain

### 2. <u>Competitive market assets</u>

- Cyclical margins
- Higher cost of financing
- Assets are mostly energy production
- Hurt by falling costs due to innovation
- No obligation to serve

# Profit Driver of Regulated Monopoly Utility



# Typical Business

# Legal & Natural Monopoly Business

### Price per Unit

- X Units Sold
- = Total Revenue
- Costs
- = Profit
- : Investment
- = Return on Investment

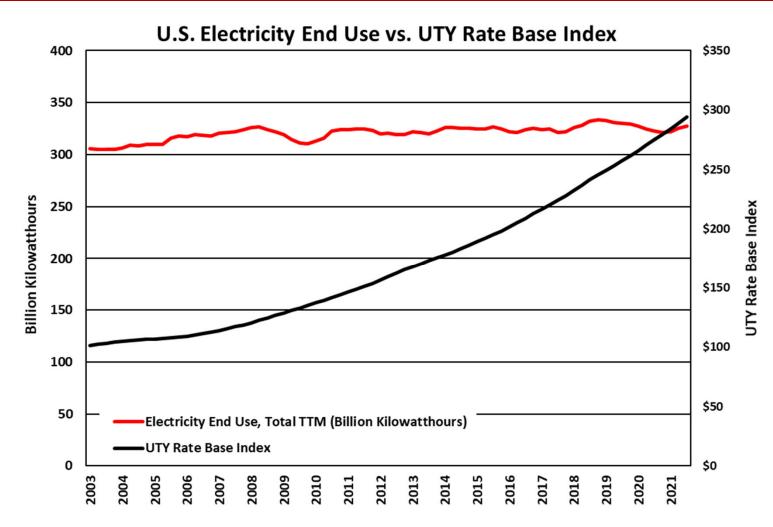
### Return on Investment (Allowed/Agreed)

- X Investment
- = Profit
- + Costs
- = Revenue
- Units Sold
- = Price per Unit

The examples shown above represent EIP's view of the basic differences between a RAB Business and a Typical Business and are presented for illustrative purposes. It is not meant to reflect any particular company or companies held by EIP in the portfolios it manages.

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### Flat Top Line, Rising Bottom Line



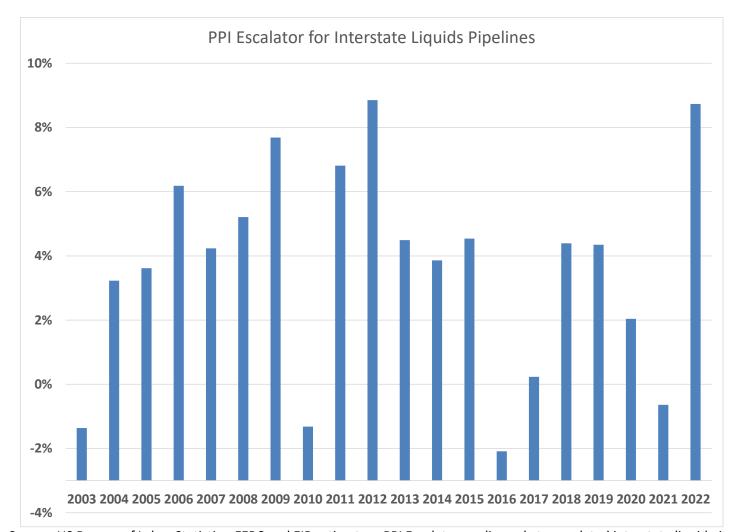
While U.S.
Electricity
demand grows
at less than 1%
per year, UTY
rate base is
growing about
6% per year.

Source: Bloomberg, Energy Information Administration. Data as of September 30,2021. Please see definition of UTY on slides 53-54.

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# PPI Escalator for Interstate Petroleum Pipelines





Pipeline tariffs increase on July 1 each year. This year will be nearly 9%.

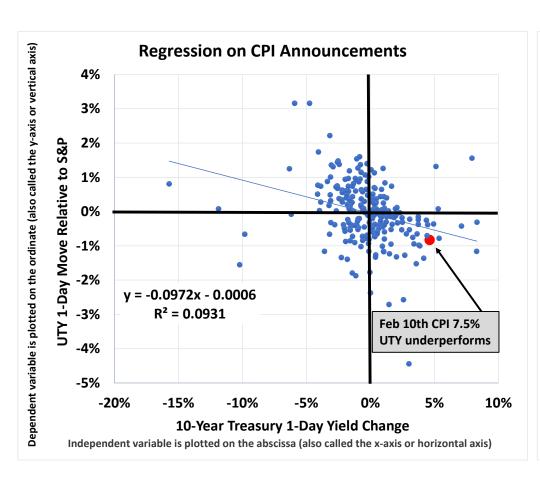
Nearly 1/4 of Tied Current Portfolios invested in petroleum pipelines.

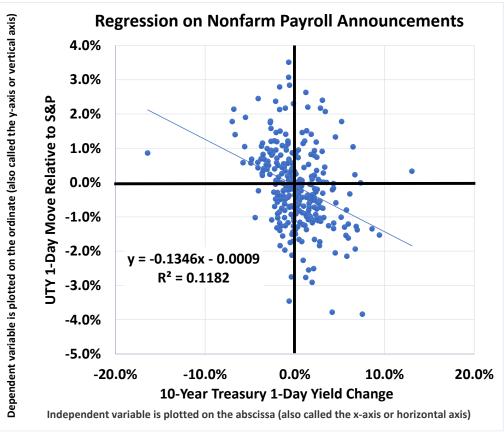
Source: US Bureau of Labor Statistics, FERC and EIP estimates. PPI Escalator applies only to regulated interstate liquid pipelines. Market-based rates also tend to follow these changes.

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# Confirmation Bias – Utility Performance on CPI and Payroll Reporting Days

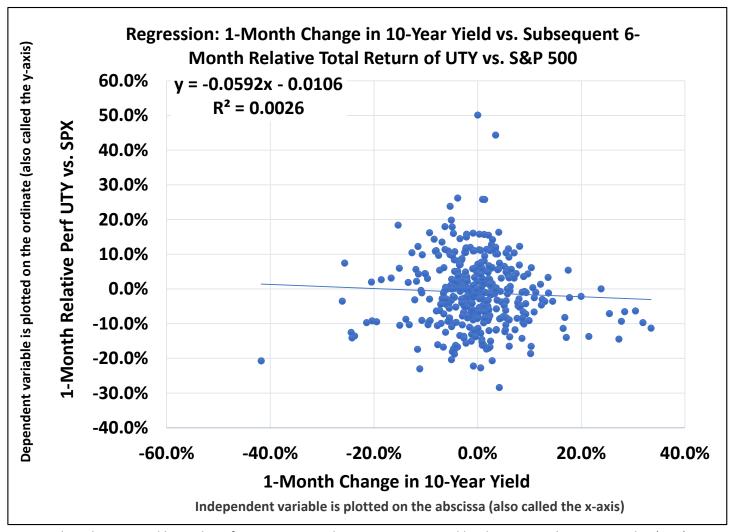






Everyone notices UTY relative performance on CPI and Payroll report days which "confirms" conventional wisdom. But no one pays attention on all the other days......

# Correlation with 10-Year U.S. Treasury?

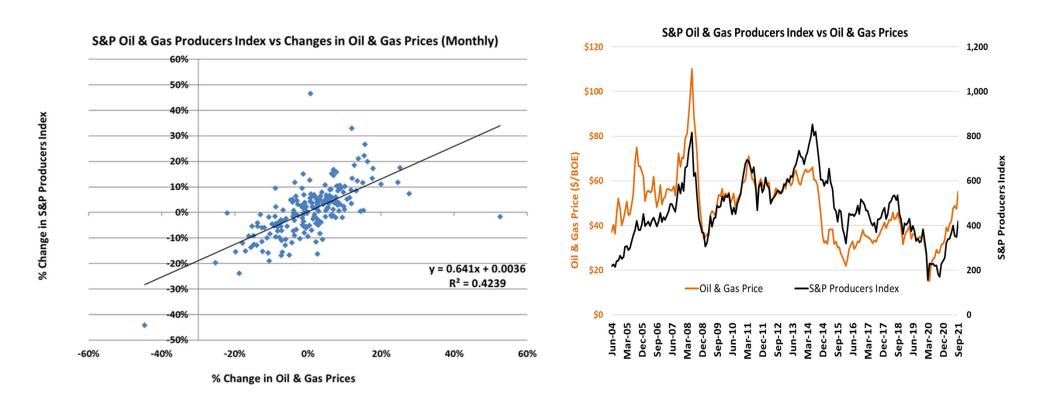


There has been no correlation between utilities and interest rates over a 6-month holding period

Source: Bloomberg: Trend line is best fit regression. Utilities are represented by the PHLX Utility Sector Index (UTY). 10 YR US Treasury: Bloomberg GT 10 Govt. See definitions on slides 53-54. This information is provided for illustrative purposes only and is not intended to represent the experience of any investor in any EIP managed account. Past performance is no guarantee of future results.



# This is What a High Correlation Looks Like

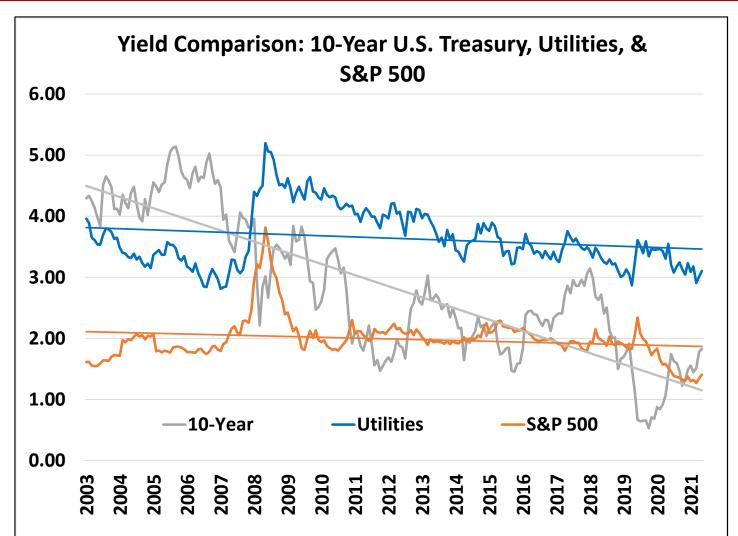


Compare the weak correlation on the previous graph to the strong correlation between the S&P Oil & Gas Producers Index and oil and gas prices.

Data Range: 06/30/04-9/30/21. This information is for illustrative purposes only and is not intended to represent the experience of any investor Source: Bloomberg; Index is the S&P supercomposite of Oil & Gas Producers (TKR: S15OILP). See definitions on slides 53-54. in any EIP managed account. Past performance is no guarantee of future results.

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# Correlation with 10-Year U.S. Treasury?

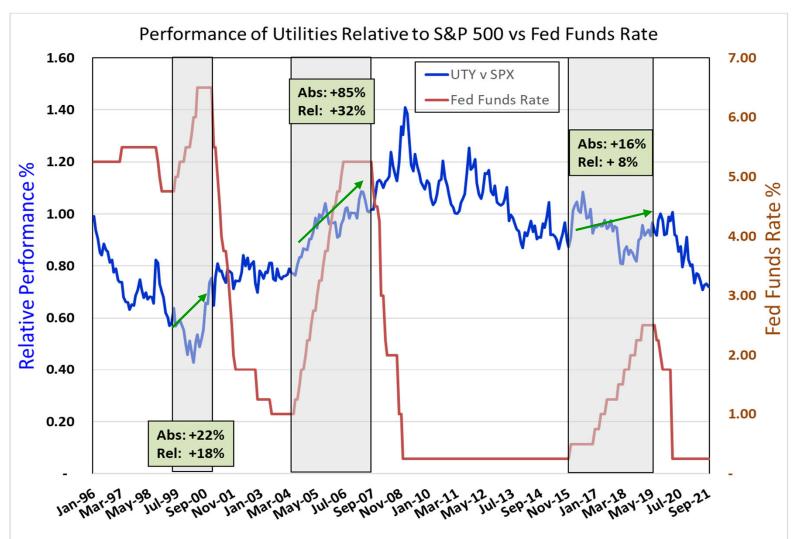


There has been virtually no correlation between utility or S&P 500 yield and 10 Yr US Treasury yield

Source: Bloomberg: Trend line is best fit regression. Utilities are represented by the PHLX Utility Sector Index (UTY). 10 YR US Treasury: Bloomberg GT 10 Govt. See definitions on slides 53-54. This information is provided for illustrative purposes only and is not intended to represent the experience of any investor in any EIP managed account. Past performance is no guarantee of future results.



### UTY Relative Performance vs Fed Funds Rate



Okay, so no correlation to 10-yr Treas. But we are about to enter a multi-year FED tightening cycle.

In each of the Fed tightening cycles over last 25 years, the utility index has <u>risen</u> and <u>outperformed</u> the S&P 500

Source: Bloomberg. Utilities are represented by the PHLX Utility Sector Index (UTY). See definitions on slides 53-54. Data range: 12/31/95-09/30/21. This information is for illustrative purposes only and is not intended to represent the experience of any investor in any EIP managed account. Past performance is no guarantee of future results.

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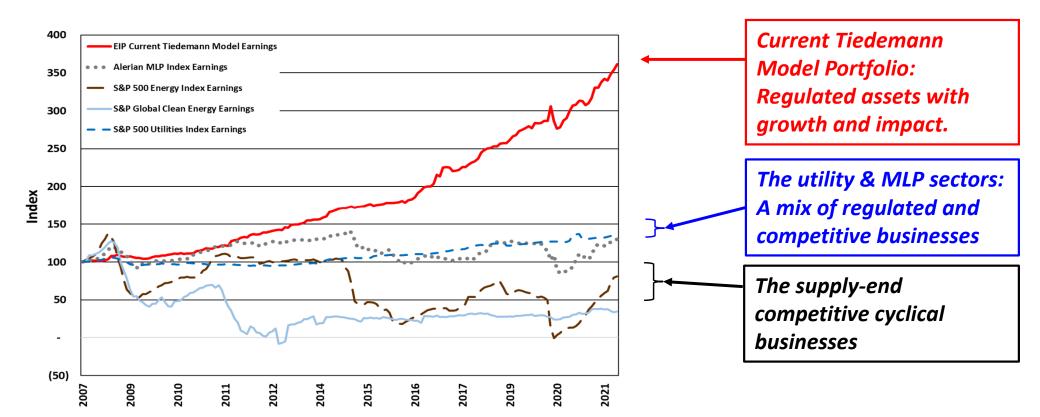
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### Earnings Growth and Stability: Current Tiedemann Model Portfolio vs Energy Sub-Sectors



### 13-year Earnings History for Energy Sub-sectors

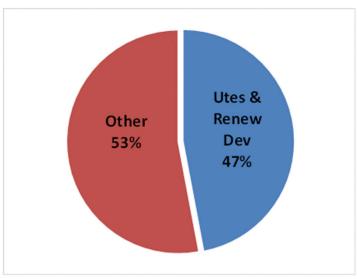


Source: EIP calculations based upon Bloomberg, FactSet and EIP Estimates as of December 31, 2021. The information provided in this Portfolio Analysis represents the blended historical results of securities held by the Current Tiedemann Model Portfolio as of December 31, 2021. The Current Tiedemann Model Portfolio is 50% Energy Infrastructure Strategy and 50% EIP's Carbon Impact Strategy. Each security's percentage in this portfolio is set as of December 31, 2021. This chart is provided for informational purposes only and should not be construed as an offer to sell, or a solicitation of an offer to buy, any investment and/or investment-related services. Actual client holdings during the historical periods covered by the chart above deviated significantly from any other EIP client portfolio, both in terms of the names held in accounts and the respective weightings of those names as percentages of assets under management. The information shown herein was created with the benefit of hindsight and does not represent the actual experience of clients, which may be materially less favorable during portions and/or the entirety of the period noted above. Percentages are not reallocated to reflect companies that did not exist during the time-period specified. The Current Tiedemann Model Portfolio information shown above does not include the reinvestment of dividends, interest, and other income. The data shown above does not reflect the deduction of fees and expenses that would have been paid if the Current Tiedemann Model Portfolio was held in accounts, including, but not necessarily limited to, advisory fees, brokerage expenses, and custody charges. Investing entails risk including risk of losing all of your money. Please see Tiedemann Performance on Slide 52 and definitions on Slides 53-54.

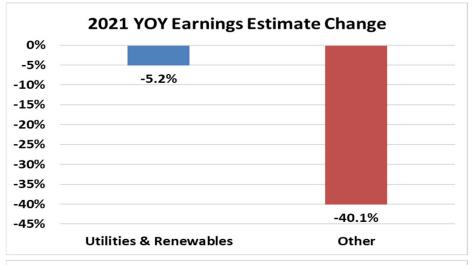
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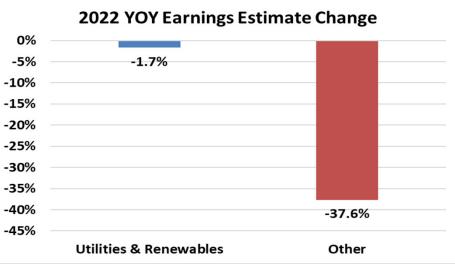
# Global Clean Energy ETF Earnings Trends (ICLN US)











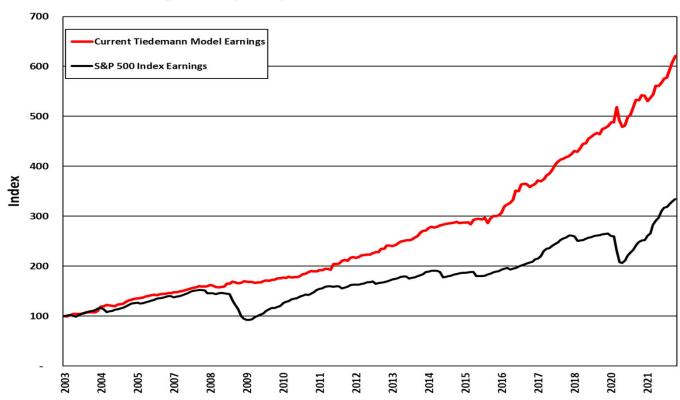
The information provided above is based on the holdings of ICLN as of March 3, 2022. The data above is for informational purposes only and is not a solicitation to buy or sell a particular security or a recommendation to buy a particular security. See definitions on slides 53-54.

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# Earnings Growth and Stability: Current Tiedemann Model Portfolio vs S&P 500



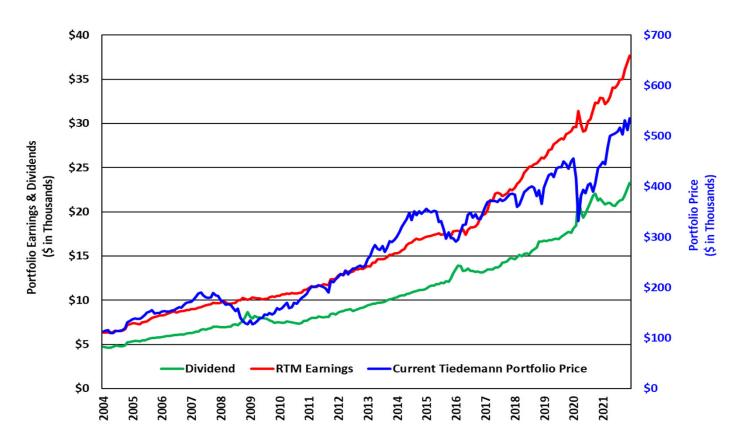
#### Earnings History Comparison: Current Tiedemann Model vs S&P 500



Source: EIP calculations based upon Bloomberg, FactSet and EIP Estimates as of December 31, 2021. The information provided in this Portfolio Analysis represents the blended historical results of securities held by the Current Tiedemann Model Portfolio as of December 31, 2021. The Current Tiedemann Model Portfolio is 50% Energy Infrastructure Strategy and 50% EIP's Carbon Impact Strategy. Each security's percentage in this portfolio is set as of December 31, 2021. This chart is provided for informational purposes only and should not be construed as an offer to sell, or a solicitation of an offer to buy, any investment and/or investment-related services. Actual client holdings during the historical periods covered by the chart above deviated significantly from any other EIP client portfolio, both in terms of the names held in accounts and the respective weightings of those names as percentages of assets under management. The information shown herein was created with the benefit of hindsight and does not represent the actual experience of clients, which may be materially less favorable during portions and/or the entirety of the period noted above. Percentages are not reallocated to reflect companies that did not exist during the time-period specified. The Current Tiedemann Model Portfolio information shown above does not include the reinvestment of dividends, interest, and other income. The data shown above does not reflect the deduction of fees and expenses that would have been paid if the Current Tiedemann Model Portfolio was held in actual client accounts, including, but not necessarily limited to, advisory fees, brokerage expenses, and custody charges. Investing entails risk including risk of losing all of your money. Please see Tiedemann Performance on Slide 52 and definitions on Slides 53-54.

# Long Term Earnings, Dividends, and Prices of the Current Tiedemann Model Portfolio

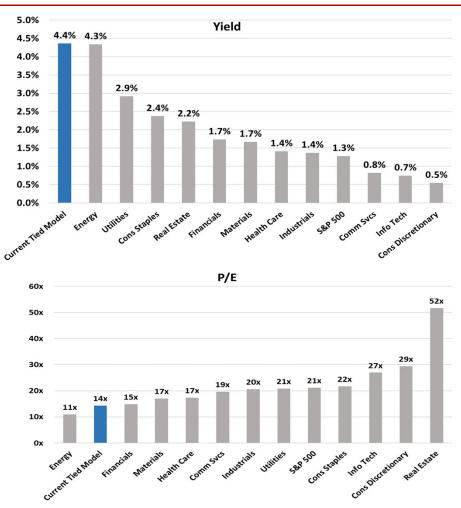


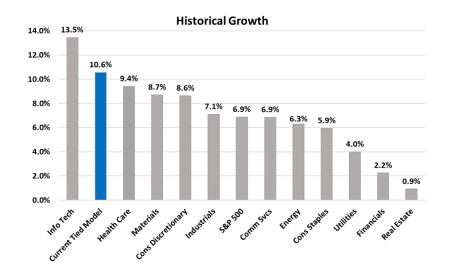


Source: EIP calculations based upon Bloomberg data. The information provided in this Portfolio Analysis represents the blended historical results of securities held by the Current Tiedemann Model Portfolio as of December 31, 2021. The Current Tiedemann Model Portfolio is 50% Energy Infrastructure Strategy and 50% EIP's Carbon Impact Strategy. Each security's percentage in this portfolio is set as of December 31, 2021. This chart is provided for informational purposes only and should not be construed as an offer to sell, or a solicitation of an offer to buy, any investment and/or investment-related services. Actual client holdings during the historical periods covered by the chart above deviated significantly from any other EIP client portfolio, both in terms of the names held in accounts and the respective weightings of those names as percentages of assets under management. The information shown herein was created with the benefit of hindsight and does not represent the actual experience of clients, which may be materially less favorable during portions and/or the entirety of the period noted above. Percentages are not reallocated to reflect companies that did not exist during the time-period specified. The Current Tiedemann Model Portfolio information shown above does not include the reinvestment of dividends, interest, and other income. The data shown above does not reflect the deduction of fees and expenses that would have been paid if the Current Tiedemann Model Portfolio was held in actual client accounts, including, but not necessarily limited to, advisory fees, brokerage expenses, and custody charges. Investing entails risk including risk of losing all of your money. Please see Tiedemann Performance on Slide 52 and definitions on Slides 53-54.

## Yield, Growth and Valuation: Current Tiedemann Model Portfolio vs. All S&P Sectors







If the "non-cyclical energy infrastructure" companies in our portfolio were a sector, it would compare favorably to all other S&P sectors on Yield, Growth and Valuation

Source: EIP calculations based upon Bloomberg data.

•The above graphs show the yield, earnings growth and valuation of the Current Tiedemann Model Portfolio versus other sectors. The information provided in this Portfolio Analysis represents the blended historical results of securities held by the Current Tiedemann Model Portfolio is 50% Energy Infrastructure Strategy and 50% EIP's Carbon Impact Strategy. Each security's percentage in this portfolio is set as of December 31, 2021. This chart is provided for informational purposes only and should not be construed as an offer to sell, or a solicitation of an offer to buy, any investment and/or investment-related services. Actual client holdings during the historical periods covered by the chart above deviated significantly from any other EIP client portfolio, both in terms of the names held in accounts and the respective weightings of those names as percentages of assets under management. The information shown herein was created with the benefit of hindsight and does not represent the actual experience of clients, which may be materially less favorable during portions and/or the entirety of the period noted above. Percentages are not reallocated to reflect companies that did not exist during the time-period specified. The Current Tiedemann Model Portfolio information shown above does not include the reinvestment of dividends, interest, and other income. The data shown above does not reflect the deduction of fees and expenses that would have been paid if the Current Tiedemann Model Portfolio was held in actual client accounts, including, but not necessarily limited to, advisory fees, brokerage expenses, and custody charges. Investing entails risk including risk of losing all of your money. Please see Tiedemann Performance on Slide 52 and definitions on Slides 53-54.

## Recap



- High prices are explained by a long capital spending cycle
  - Biden election is a rounding error
  - Europe's polices are different than the US
  - Energy transition will become more bipartisan and more balanced between conventional and alternative energy sources
- Inflation and Interest Rates
  - EIP runs a portfolio of cost-plus profit drivers
  - Interest rates not correlated to relative valuations
- EIP Portfolio
  - Yield: higher than any sector
  - Growth: second only to tech sector
  - Valuation is lower than any sector
  - Sentiment is turning towards lower valuation, shorter duration and inflation hedges

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### **EIP Contact Info**





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203-349-8241

Jon Ackerhalt and Jayme Martino are registered with Foreside Fund Services, LLC which is not affiliated with Energy Income Partners, LLC or its affiliates.



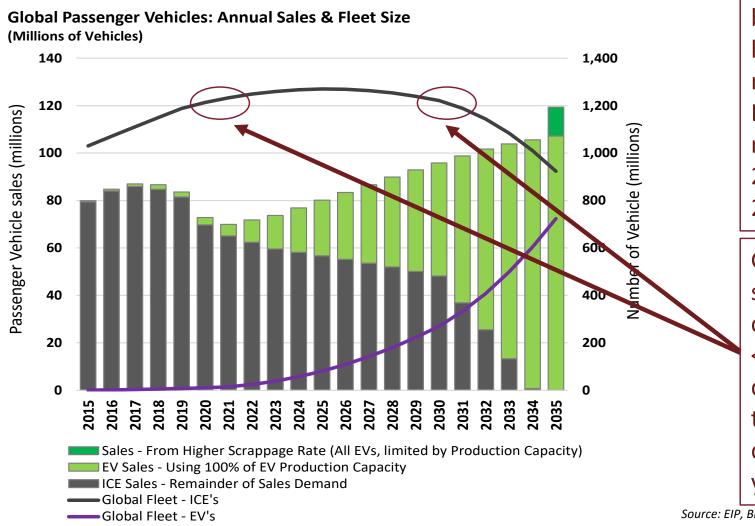
# **Appendix**

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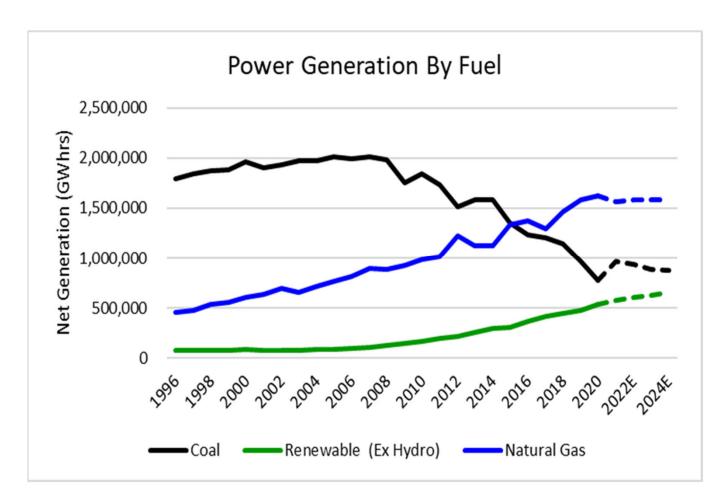
This forecast is based on a hypothetical rapid ramp in worldwide EV vehicle sales reaching 50% in 2030 and 100% in 2035.

Growth in fleet size/miles driven combined with <5% fleet turnover delay decline in transport fuel demand for ten+years.

Source: EIP, Bloomberg NEF.



### **Energy Transition: Recent History (U.S.)**



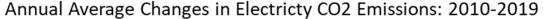
Natural gas and renewables are complementary.

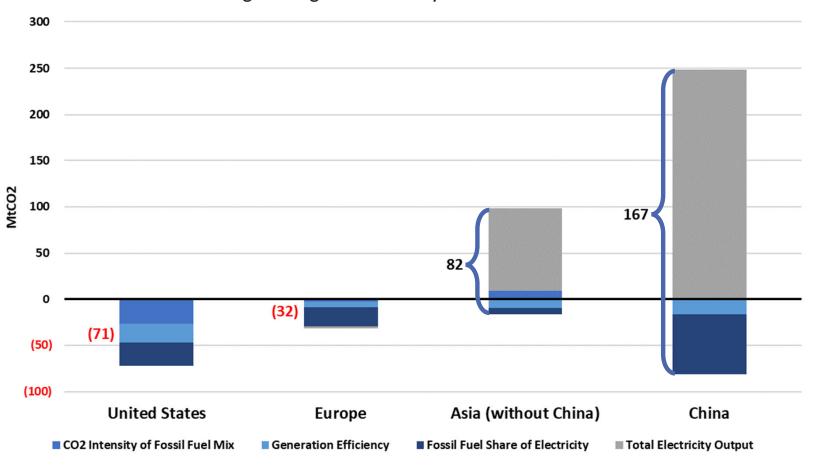
Nat gas role in backing up wind and solar at lower cost than batteries, drives higher, not lower use.

Source: EIA, Bloomberg, SNL Financial, Wolfe Research. Estimates based on Wolfe Research as of Sept 21, 2021.



### U.S. Carbon Reductions are Leading the World





Low-cost shale gas has driven a larger reduction in carbon for the United States than in Europe, despite rising electricity production.

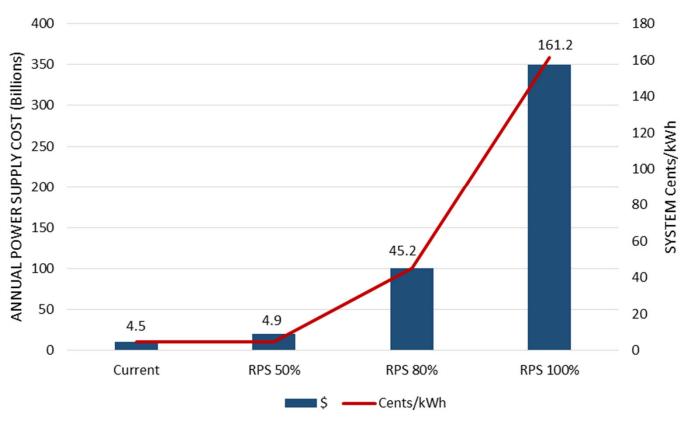
Source: International Energy Agency, CO2 Emissions from Fuel Combustion: Overview, Statistical Report August 2021. MtCO2 is metric tons of carbon dioxide.

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### California Power Supply Cost on Varying Renewable Portfolio Standards (RPS) With Full Storage



California case study shows what happens to the cost of electricity when solar & wind exceed 50% of power generation and are backed up by batteries rather than natural gas.

Source: Clean Air Task Force, "Armond Cohen Testimony in Support of the Climate and Community Protection Act, S. 2992" February 12, 2019.

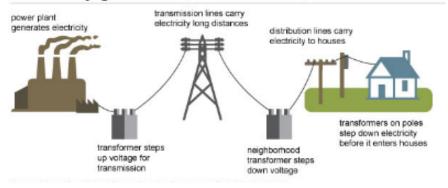
California Independent System Operator (CAISO) Power Supply Costs. CAISO is the grid operator that oversees the operation of California's bulk electric power system, transmission lines, and wholesale electricity market.

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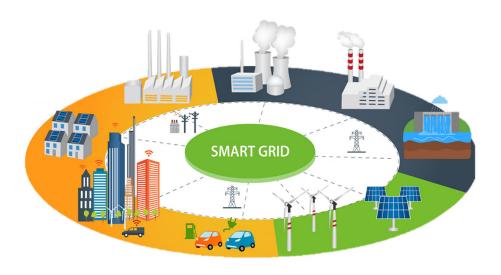
# Evolution of the Power Grid – Now it starts Getting Complicated



#### Electricity generation, transmission, and distribution



Source: Adapted from National Energy Education Development Project



Source: https://blog.meinbergglobal.com/2019/07/16/use-cases-for-timing-in-power-grids/

<u>Before:</u> Large power plants sit at the center of a radial grid sending power in one direction; more steel than intelligence.

Now: Recent changes have been mostly substituting large-scale gas and renewable sources for coal while adding new transmission.

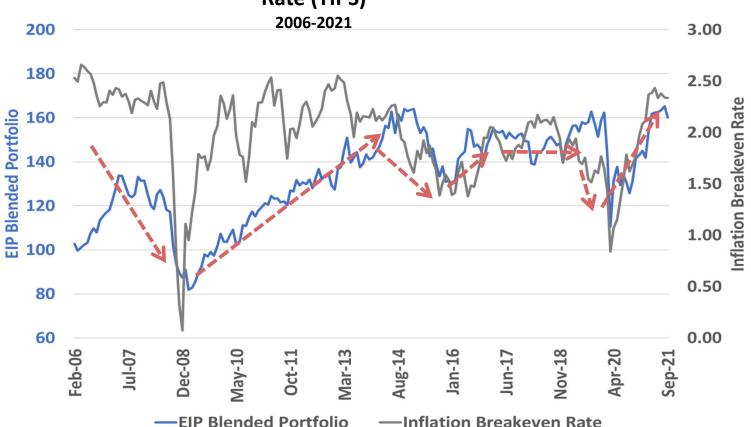
<u>Future:</u> A multi-directional network of diverse power sources, storage, and demand response minimizing emissions and improving reliability and safety.

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## EIP Blended Portfolio vs. Breakeven Inflation Rate (10-Year US Treasury – TIPS)



## Energy Infrastructure Blended Portfolio vs B/E Inflation Rate (TIPS)

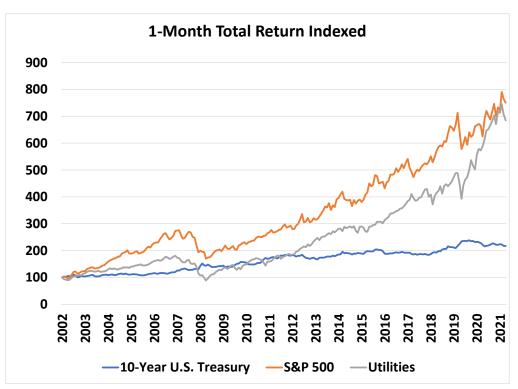


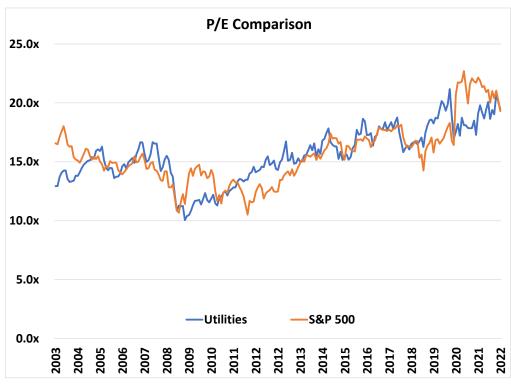
There is a positive correlation between a diversified basket of energy infrastructure companies and Inflation expectations.

Source: Bloomberg. As a representation of the EIP SMA portfolio, we have used a combined portfolio of 35% weight to the Alerian MLP Index and 65% weight to the PHLX Utility Sector Index. Please note that the EIP SMAs will have materially different components than the combined index portfolio described above. Actual client holdings during the historical periods covered by the chart above deviated significantly from the EIP Proxy Portfolio, both in terms of the names held in accounts and the respective weightings of those names as percentages of assets under management. The information shown herein was created with the benefit of hindsight and does not represent the actual experience of clients, which may be materially less favorable during portions and/or the entirety of the period noted above. Percentages are not reallocated to reflect companies that did not exist during the time-period specified. The EIP Proxy Portfolio information shown above does not include the reinvestment of dividends, interest, and other income. The data shown above does not reflect the deduction of fees and expenses that would have been paid if the EIP Proxy Portfolio was held in actual client accounts, including, but not necessarily limited to, advisory fees, brokerage expenses, and custody charges. Investing entails risk including risk of losing all your money. Descriptions of the Indices that compose the proxy portfolio may be found on Slide 53-54

# Utility Total Returns & Valuations vs. S&P 500







Utility index total return has been in line with S&P 500 as lower growth is offset by higher yield. Change in valuation has not been a factor.

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- Bipartisan Infrastructure Act:
  - Headline \$1.2 trillion
  - Energy ~\$120 billion
    - Electricity grid resilience, expansion, security, efficiency, siting
    - Fuel & Technology including carbon capture & storage
    - Electric Vehicle Infrastructure
- Build Back Better Budget Reconciliation Bill (BBB):
  - Headline \$1.75 trillion
  - Energy ~\$560 billion
    - \$ 300B+ for green energy (tax credits for wind solar, EVs, nuclear)
    - R&D, loan guarantees, social programs
- COP26
  - Global pledge to reduce methane emissions
    - An opportunity for natgas pipelines and utilities
  - Carbon market clarity and coal phase-down

Source: www.whitehouse.gov 7/10/20 FT AI



### EIP's Engagement & Advocacy

#### **Expert testimony**

- U.S. Senate Committee on Energy and Natural Resources
- Federal Energy Regulatory Commission (FERC)
  - Allowed returns on equity inquiry.
  - Pipeline certification inquiry.

#### Advocacy

- Incentive ratemaking
  - Cost, safety, reliability, environmental impact
  - Value added not just costs incurred
- Capital efficiency

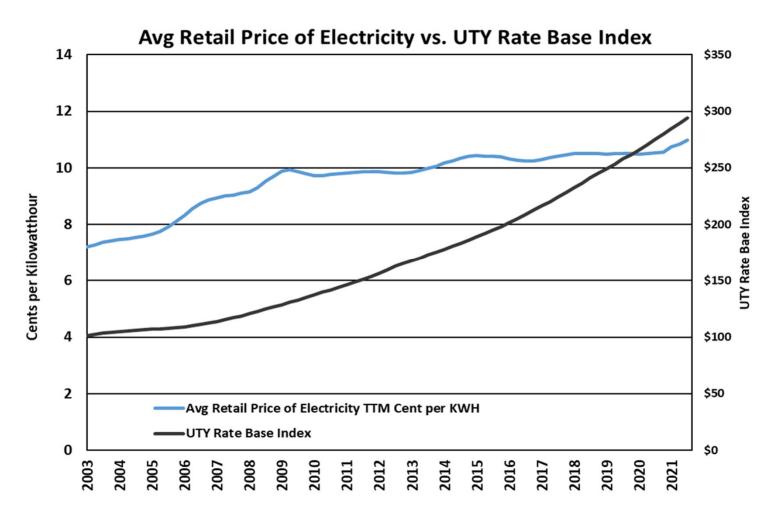
#### Other Engagement

- FERC (Federal Energy Regulatory Commission)
- Industry associations
- State regulators
- Environmental advocates
- Aspen Institute
- Smart Electric Power Alliance (SEPA)

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# Rate Base Growth Not Driving Customer Bills Higher Due to Lower Costs



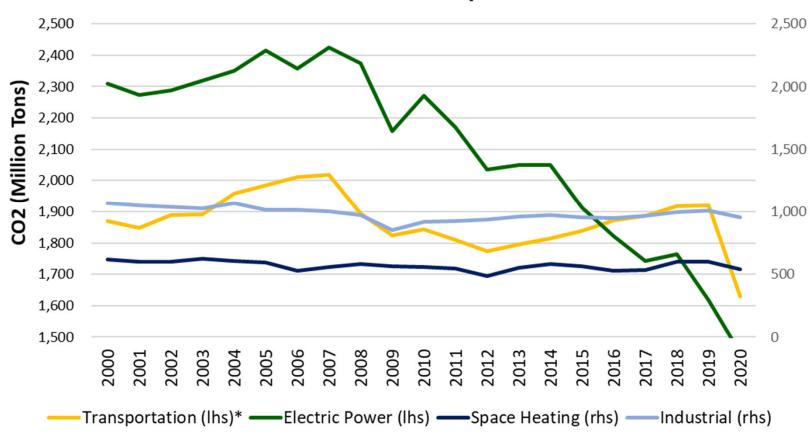


Source: Energy Information Administration, Bloomberg. Data as of September 30, 2021. Rate Base of UTY Constituents is defined as the growth year over year for each market capitalization weighted member of the UTY. Rate Base is calculated by (Capital Expenditures + Depreciation)/ Net Fixed Assets based on the members in the UTY. Rate Base is indexed to 100.



#### **Energy Transition: Impact of Power Sector**

#### **Carbon Emissions by Sector**



Power
Generation
accounts for
about 65% of
the reductions
to U.S. Carbon
Emissions since
the 2007 peak.

Source: U.S. Dept. of Energy, EIA Monthly Energy Review - March 2021. LHS - Left hand side. RHS - Right hand side.

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<sup>\*</sup>Carbon Emissions in the Transportation sector dropped significantly in 2020 due to the COVID lockdown.

# Carbon Tax and Import Adjustment – Who is for it?



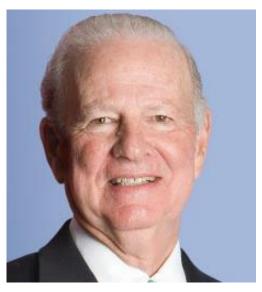
So which ultra liberal environmental radicals advocated for a carbon tax on both domestic and imported goods?

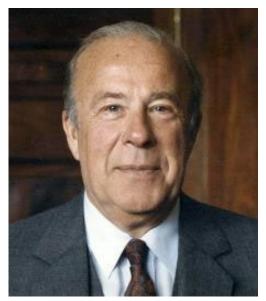
.....these guys:

The Climate Leadership Council advocates for 4 things:

- 1. A gradually increasing carbon tax
- 2. Carbon dividends for all Americans
- 3. Border Carbon Adjustments
- 4. Significant regulatory simplification

Source: Climate Leadership Council





#### James A Baker III

- White House Chief of Staff under Reagan & Bush
- Secretary of State under George H.W. Bush
- Secretary of Treasury under Reagan

#### George Schultz

- Secretary of State under Ronald Reagan
- Secretary of Treasury &
- Secretary of Labor & Director OMB under Richard Nixon

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### Implications of Texas & California Blackouts

#### **Investor Perspective:**

- More capital spending and higher growth for gas and power utilities.
- Re-center the debate (and therefore sentiment) between renewables and fossil fuels.

### Policy Perspective:

- Calls to eliminate natural gas will be met with the counter argument:
   Natural gas heating kept homes from freezing. 100% electrification would have been a massive public health disaster.
- More guardrails on competitive markets.
- Regulated "rate base" model viewed more favorably.
- Interconnectivity rises in importance accelerating transmission build.

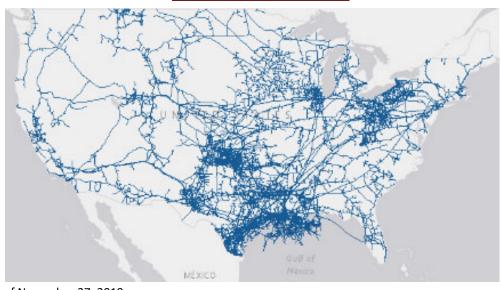
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#### Poles & Wires, Pipes & Tanks

#### **Electric Transmission Lines**

#### **Natural** Gas Pipelines



Electric Transmission Lines and Natural Gas Pipelines Source: EIA Energy Mapping System as of November 27, 2019

- The value of our companies derives from the rights-of-way and the incumbency of their natural or legal monopolies which replaces competition with a cost-plus profit model with an allowed return on equity that results in a smoother more predictable earnings progression.
- These rights-of-way were originally granted to and are largely owned by publicly-traded gas and power utilities and major oil companies.
- Some of these companies are pure play investments in infrastructure but most have some exposure to variable margin merchant businesses. Portfolio construction strives to maximize the former and minimize the latter while optimizing yield, growth and valuation with the best management teams

7/9/20 FT AI

# Current Tiedemann Model Portfolio Exposures by Segment



Current Tiedemann Model Portfolio											
Electric Power	33.1%										
Renewables	12.9%										
Natural Gas	28.4%										
Total Petroleum	22.0%										
Crude Oil	12.3%										
Petroleum Products & NGLs	9.7%										
Other	3.6%										
Total	100%										

The portfolio exposure to natural gas pipelines and related logistics, electric utilities and renewable development has increased over the last ten years and now accounts for over 70% of the portfolio's operating income.

Source: Corporate reports and EIP estimates. The information provided above is based on the Current Tiedemann Model Portfolio holdings as of December 31, 2021. Electric Power includes transmission, distribution, and generation. Natural Gas includes gathering and processing, intra & interstate pipelines, storage & LNG terminaling, regulated LDCs, and marketing/logistics. Crude Oil includes interstate pipelines, gathering, oil & gas production and mining, and marketing and logistics. Petroleum products & NGLs include NGL pipelines, refined petroleum product pipes, propane distribution, and NGL marketing and logistics. Other includes terminals and petroleum & bulk. EIP has management discretion to change portfolio may change at any time and without notice.

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# EIP Investment Team: Extensive Industry and Investment Experience



	<u>Title</u>	Years Exp.	Background
Jim Murchie	PM	38	Rice, Harvard, BP, Bernstein, Tiger, Lawhill
Eva Pao	PM	23	Rice, Harvard, Enron, Lawhill
John Tysseland	PM	24	Univ. of Texas, Raymond James, Citigroup
Saul Ballesteros	Trading	23	Duke, Northwestern, Enron, Mirant, FP&L
Sam Brothwell	Rsch. Dir	. 35	UNM, PNM, Moody's, Merrill, Wells, Questar
Lou Lazzara	Analyst	15	Villanova, Columbia, PwC, Fitch, Citi, Kayne
Lisa Sacerdote	Analyst	25	Wellesley, Boston Univ., Prudential, Putnam, AIG
			7/22/20 FT AI





#### **Tiedemann EIP Energy Infrastructure and Utility Strategy**

Updated as of February 28, 2022

#### Net Returns - Since Inception

	2022	2021	2020	2019	2018	2017	2016
January	1.32%	1.88%	-0.86%	9.73%	1.39%	4.13%	
February	2.66%	-1.06%	-8.50%	1.42%	-8.66%	0.64%	
March		8.91%	-27.98%	4.19%	-4.44%	-0.29%	
April		5.24%	17.56%	-0.10%	4.52%	0.22%	
Мау		1.76%	4.68%	-0.94%	1.87%	-3.15%	
June		1.22%	-4.83%	3.59%	1.43%	-0.14%	
July		-0.88%	3.86%	0.57%	3.97%	3.63%	1.79%
August		1.25%	-0.22%	-0.14%	0.14%	-2.98%	-2.51%
September		-3.58%	-5.12%	1.68%	-1.54%	0.63%	3.91%
October		6.28%	4.18%	-3.44%	-5.07%	-1.94%	-2.71%
November		-3.76%	9.23%	-1.34%	1.58%	-0.54%	0.31%
December		5.31%	0.86%	4.91%	-6.60%	2.67%	3.64%
Year to Date	4.02%	24.05%	-13.65%	21.30%	-11.77%	2.61%	4.29%*

<sup>\*</sup>Note that this year-to-date figure does not include a full year of performance.

All returns reflected are since inception. The return data includes the reinvestment of dividends and capital gains.

The performance shown above is the net performance of the Energy Infrastructure strategy managed by Energy Income Partners, LLC from 2016 till June 30, 2021. Energy Income Partners, LLC began moving toward a 50% Energy Infrastructure Strategy 50% Carbon Impact Strategy on July 1, 2021. Past performance is not indication of future performance nor is it reflective of future portfolio allocation.

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#### **Definitions**

**Alerian MLP Index (AMZ):** A composite of the most prominent energy master limited partnerships, whose constituents represent approximately 85% of the total float-adjusted market capitalization, calculated by Standard & Poor's using a float-adjusted market capitalization methodology on a price-return basis.

**Bloomberg Barclays US Government 10 yr Term Index Total Return:** An index of U.S. Treasury Bonds which only includes bonds near to their original term of between 9 - 10.5 years and uses the standard market capitalization weighting methodology to weight the bonds.

Communication Services (S5TELS): Standard and Poor's 500 Communication Services Index is a capitalization-weighted index. The index was developed with a base level of 10 for the 1941-43 base period. The parent index is SPXL1. This is a GICS Level 1 Sector group. Intraday values are calculated by Bloomberg and not supported by S&P DJI, however the close price in HP<GO> is the official close price calculated by S&P DJI.

Cons Discretionary (S5COND): S&P'S 500 GICS Consumer Discretionary Sector Index is cap-weighted. Includes auto, household durables, textiles & apparel, leisure equipment, hotels, restaurants, other leisure facilities, media production & services and consumer retailing. Intraday values are calculated by Bloomberg and not supported by S&P DJI, however the close price in HP<GO> is the official close

Cons Staples (S5CONS): Standard and Poor's 500 Consumer Staples Index is a capitalization-weighted index. The index was developed with a base level of 10 for the 1941-43 base period. The parent index is SPXL1. This is a GICS Level 1 Sector group. Intraday values are calculated by Bloomberg and not supported by S&P DJI, however the close price in HP<GO> is the official close price

Dividends and other distributions: Sum of companies' dividends and other distributions multiplied by the applicable weightings.

Earnings (recurring): Sum of companies' recurring earnings multiplied by the applicable weightings.

Energy (S5ENRS): Standard and Poor's 500 Energy Index is a capitalization-weighted index. The index was developed with a base level of 10 for the 1941-43 base period. The parent index is SPXL1. This is a GICS Level 1 Sector group. Intraday values are calculated by Bloomberg and not supported by S&P DJI, however the close price in HP<GO> is the official close price calculated by S&P DJI.

**Financials (S5FINL)**: Standard and Poor's 500 Financials Index is a capitalization-weighted index. The parent index is SPXL1. This is a GICS Level 1 Sector group. Intraday values are calculated by Bloomberg and not supported by S&P DJI, however the close price in HP<GO> is the official close price calculated by S&P DJI.

**Health Care (S5HLTH):** Standard and Poor's 500 Health Care Index is a capitalization-weighted index. The index was developed with a base level of 10 for the 1941-43 base period. The parent index is SPXL1. This is a GICS Level 1 Sector group. Intraday values calculated by Bloomberg and not supported by S&P.

**iShares Global Clean Energy (ICLN)** ETF is an exchange-traded fund incorporated in the USA. The ETF tracks the performance of the S&P Global Clean Energy Index. The ETF holds energy, industrial, technology, and utilities stocks that can be predominantly classified as mid cap. The ETF weights these holdings using a market capitalization methodology.

Industrials (S5INDU): Standard and Poor's 500 Industrials Index is a capitalization-weighted index. The index was developed with a base level of 10 for the 1941-43 base period. Theparent index is SPXL1. This is a GICS Level 1 Sector group. Intraday values are calculated by Bloomberg and not supported by S&P DJI, however the close price in HP<GO> is the official close price calculated by S&P DJI.

Information Technology (S5INFT): Standard and Poor's 500 Information Technology Index is a capitalization-weighted index. The index was developed with a base level of 10 for the 1941-43 base period. The parent index is SPXL1. This is a GICS Level 1 Sector group. Intraday values are calculated by Bloomberg and not supported by S&P DJI, however the close price in HP<GO> is the official close price.



### Definitions (cont.)

Materials (S5MATR): Standard and Poor's 500 Materials Index is a capitalization-weighted index. The index was developed with a base level of 10 for the 1941-43 base period. The parent index is SPXL1. This is a GICS Level 1 Sector group. Intraday values are calculated by Bloomberg and not supported by S&P DJI, however the close price in HP<GO> is the official close price calculated by S&P DJI.

**Price:** Sum of companies' stock price multiplied by the applicable weightings.

Real Estate (S5RLST): S&P 500 Real Estate Sector GICS Level 1

**S&P 500 Index:** A capitalization-weighted index of 500 stocks. This Index is designed to measure performance of the broad domestic economy through changes in the aggregate market value of 500 stocks representing all major industries.

**S&P Supercomposite Oil & Gas Producers Index (S15OILP):** An index which includes the stocks in the oil & gas exploration & production sub industry of the S&P 1500 Index (SPR).

Standard and Poor's 500 Utilities Index (S5UTIL) is a capitalization-weighted index. The parent index is SPXL1. The index was developed with a base value of 100 as of December 30, 1994. This is a GICS Level 1 Sector group. Intraday values are calculated by Bloomberg and not supported by S&P DJI, however the close price in HP<GO> is the official close price.

Standard and Poor's 500 (Economic Sectors) Index (SPXL1) is a capitalization-weighted index. The index is designed to measure performance of the broad domestic economy through changes in the aggregate market value of 500 stocks representing all major industries. The index was developed with a base level of 10 for the 1941-43 base period.

**Tiedemann Model Portfolio:** Includes holdings of the Tiedemann Model Portfolio as of December 31, 2021. The Current Tiedemann Model Portfolio is 50% Energy Infrastructure Strategy and 50% EIP's Carbon Impact Strategy. The information provided in this Portfolio Analysis represents the blended historical results of securities held by the Tiedemann Model Portfolio as of December 31, 2021.

UTY Index (UTY): The PHLX Utility Sector Index (UTY) is a market capitalization-weighted index composed of geographically diverse public utility stocks.

The indices have not been selected to represent an appropriate benchmark with which to compare an investor's performance, but rather are disclosed to allow for comparison of the investor's performance to that of certain well-known and widely recognized indices. An index is unmanaged, does not incur fees or expenses and an investment cannot be made directly in an Index.



### LCOE Assumptions (Slide 14)

Lazard's Levelized Cost of Energy Analysis - Version 15.0, Levelized Cost of Storage Analysis - Version 7.0, and Levelized Cost of Hydrogen- Version 2.0 November 15, 2021.

#### Levelized Cost of Energy (LCOE)

Levelized Cost of Energy (LCOE) is a comparative tool to analyze the total cost of generating electricity from a given source technology and fuel, levelized over a project's expected economic lifespan. LCOE considers fuel, variable and fixed operating and maintenance costs, debt service, and an expected equity return acceptable to an investor's risk tolerance. LCOE analysis is performed by both governmental agencies such as the U.S. Department of Energy, as well as by commercial research and investment consultancies such as Bloomberg New Energy Finance (BNEF) and Lazard. The information provided has been developed by Lazard and reproduced with Lazard's permission.

The instantaneous, periodic and levelized cost of producing electricity depends on many factors. Among the most influential are:

- Capacity factor. Expressed as a percentage, the number of hours in a given period that a power plant can produce electricity at its full nameplate capacity. CF=(Watt-hours of nameplate capacity production / 8,760 hours in a year)
- Fuel. For renewable wind and solar, zero.
- The overnight installed cost. The total cost per watt of generating capacity of a given project assuming construction could be completed in a 24 hour period.
- The cost of debt and equity financing and the ratio of the two in the project's capital structure
- Federal and state tax incentives and subsidies.

LCOE is a theoretical construct intended to inform comparative analysis. In using LCOE, EIP is neither opining on nor endorsing any forecast of electricity prices, relative economic merits of any power generation technology or fuel.

#### **Summary Considerations**

Lazard has conducted this analysis comparing the LCOE for various conventional and renewable energy generation technologies in order to understand which renewable energy generation technologies may be cost-competitive with conventional generation technologies, either now or in the future, and under various operating assumptions. We find that renewable energy technologies are complementary to conventional generation technologies, and believe that their use will be increasingly prevalent for a variety of reasons, including to mitigate the environmental and social consequences of various conventional generation technologies, RPS requirements, carbon regulations, continually improving economics as underlying technologies improve and production volumes increase, and supportive regulatory frameworks in certain regions.

In this analysis, Lazard's approach was to determine the LCOE, on a \$/MWh basis, that would provide an after-tax IRR to equity holders equal to an assumed cost of equity capital. Certain assumptions (e.g., required debt and equity returns, capital structure, etc.) were identical for all technologies in order to isolate the effects of key differentiated inputs such as investment costs, capacity factors, operating costs, fuel costs (where relevant) and other important metrics. These inputs were originally developed with a leading consulting and engineering firm to the Power & Energy Industry, augmented with Lazard's commercial knowledge where relevant. This analysis (as well as previous versions) has benefited from additional input from a wide variety of Industry participants and is informed by Lazard's many client interactions on this topic.



### LCOE Assumptions (Slide 14 cont)

Lazard has not manipulated the cost of capital or capital structure for various technologies, as the goal of this analysis is to compare the current levelized cost of various generation technologies, rather than the benefits of financial engineering. The results contained herein would be altered by different assumptions regarding capital structure (e.g., increased use of leverage) or the cost of capital (e.g., a willingness to accept lower returns than those assumed herein).

Key sensitivities examined included fuel costs, tax subsidies, carbon pricing and costs of capital. Other factors would also have a potentially significant effect on the results contained herein, but have not been examined in the scope of this current analysis. These additional factors, among others, could include: capacity value vs. energy value; network upgrades, transmission, congestion or other integration-related costs; significant permitting or other development costs, unless otherwise noted; and other costs of complying with various environmental regulations (e.g., carbon emissions offsets or emissions control systems). This analysis also does not address potential social and environmental externalities, including, for example, the social costs and rate consequences for those who cannot afford distributed generation solutions, as well as the long-term residual and societal consequences of various conventional generation technologies that are difficult to measure (e.g., nuclear waste disposal, airborne pollutants, greenhouse gases, etc.).

		Solar PV										_								
		Rooftop-	Residential	Rooftop—C&I		Comr	Community		Utility Scale— Crystalline <sup>(1)</sup>		Utility Scale— Thin Film <sup>(1)</sup>		Solar Thermal Tower with Storage <sup>(1)</sup>		Geothermal		Wind—Onshore		Wind-Offshore	
	Units	Low Case	High Case	Low Case	High Case	Low Case	High Case	Low Case	High Case	Low Case	High Case	Low Case	High Case	Low Case	High Case	Low Case	High Case	Low Case	High Case	
Net Facility Output	MW	0.005	0.005	1	1	5	5	150	150	150	150	110	150	20	50	175	175	210	385	
EPC Cost	\$/kW	\$2,475	\$2,850	\$1,400	\$2,850	\$1,200	\$1,450	\$950	\$800	\$950	\$800	\$7,950	\$5,250	\$3,775	\$4,875	\$1,025	\$1,350	\$2,500	\$3,600	
Capital Cost During Construction	\$/kW	-	-	-	-	-	-	-	-	-	-	\$1,150	\$750	\$550	\$700	-	1	-	_	
Total Capital Cost	\$/kW	\$2,475	\$2,850	\$1,400	\$2,850	\$1,200	\$1,450	\$950	\$800	\$950	\$800	\$9,090	\$6,000	\$4,325	\$5,575	\$1,025	\$1,350	\$2,500	\$3,600	
Fixed O&M	\$/kW-yr	\$15.00	\$18.00	\$11.75	\$18.00	\$12.00	\$16.00	\$13.00	\$9.50	\$13.00	\$9.50	\$75.00	\$80.00	\$13.00	\$13.00	\$22.50	\$36.00	\$65.75	\$79.50	
Variable O&M	\$/MWh	_	-	-	_	-	-	-	-	_	-	-	-	\$8.00	\$22.00	-	-	-	-	
Heat Rate	Btu/kWh	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Capacity Factor	%	18%	14%	23%	17%	21%	17%	34%	21%	36%	23%	68%	39%	90%	80%	55%	38%	53%	49%	
Fuel Price	\$/MMBtu	-	-	-	_	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Construction Time	Months	3	3	3	3	4	6	9	9	9	9	36	36	36	36	12	12	12	12	
Facility Life	Years	25	25	25	25	30	30	30	30	30	30	35	35	25	25	20	20	20	20	
CO <sub>2</sub> Emissions	lb/MWh	-	-	-	-	-	-	-	-	_	-	-	-	-	-	-	-	-	-	
Levelized Cost of Energy	\$/MWh	\$147	\$221	\$67	\$180	<b>\$</b> 59	\$91	\$30	\$41	\$28	\$37	\$126	\$156	\$56	\$93	\$26	\$50	\$66	\$100	

<sup>(1)</sup> The "Low Case" represents assumptions used to calculate the low end of the LCOE range, representing a project with 18 hours of storage capacity. The "High Case" represents assumptions used to calculate the high end of the LCOE range, representing a project with eight hours of storage.

Source: : Lazard's Levelized Cost of Energy Analysis - Version 15.0, Levelized Cost of Storage Analysis - Version 7.0, and Levelized Cost of Hydrogen- Version 2.0 November 15, 2021.

Includes capitalized financing costs during construction for generation types with over 12 months of construction time.