

# Unleashing U.S. LNG

The Largest Green Initiative on the Planet





# Unleashing U.S. LNG: A Note on Current Geopolitical Events

We at EQT have been working on the concepts underpinning this presentation over the recent months. Our goal has been to present a climate-centric argument for leveraging U.S. natural gas to replace international coal, as we believe this to be one of most important initiatives available to the world in addressing climate change.

However, the recent invasion of Ukraine by Russia highlights another key benefit of unleashing U.S. LNG – providing energy security to our allies while weakening the energy dominance of our adversaries.

It is our belief that the emissions reduction impact of a ramped U.S. LNG program targeting international coal still holds even if a portion of that LNG is used to transition our NATO allies off Russian natural gas.

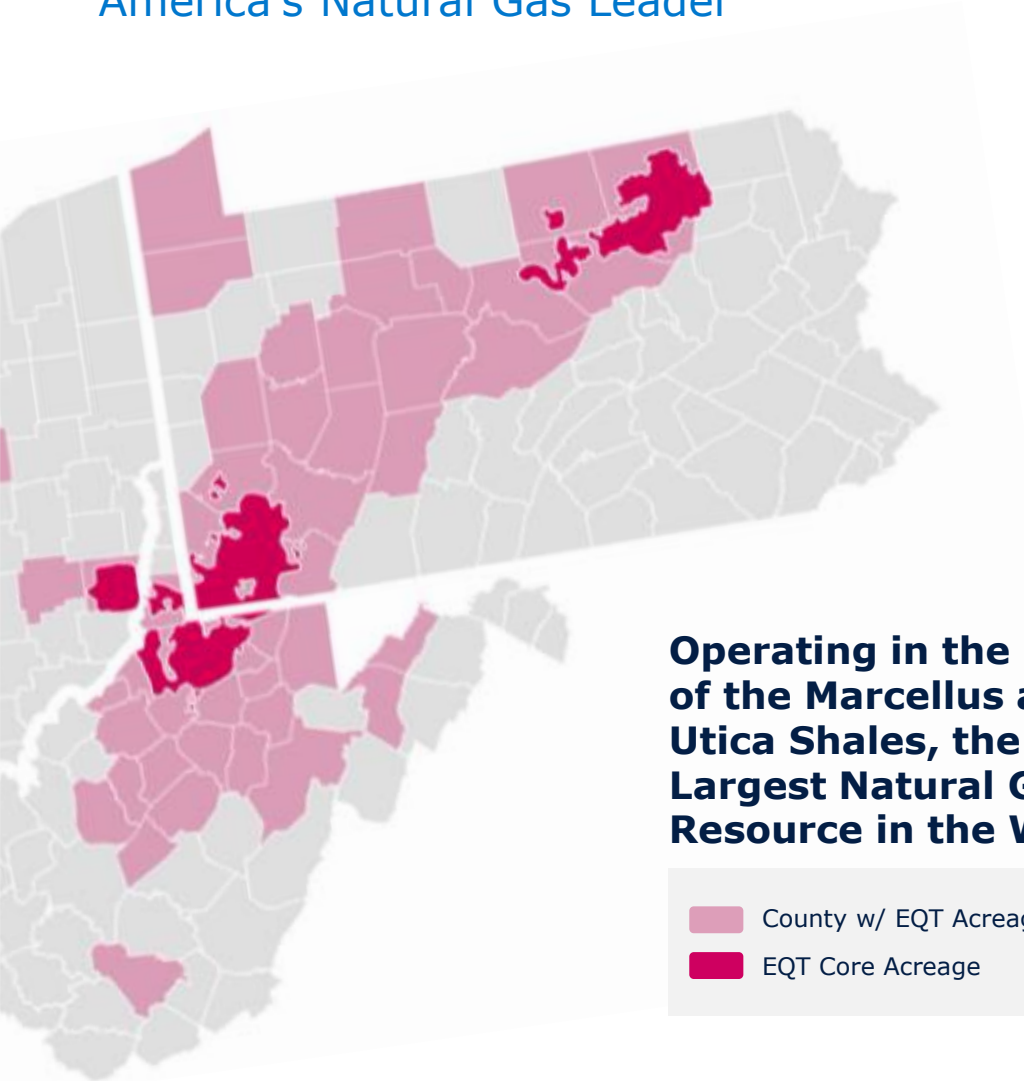
Recent events in Asia, Europe and New England demonstrate that the energy ecosystem is extremely interconnected... except where it isn't. While our emissions analysis contemplates directly replacing international coal, diverting a portion of that supply to target Europe would result in existing European supply from Russia being displaced and consumed elsewhere, and that consumption would almost certainly be in lieu of coal. While displaced Russian natural gas would find a home, that home would be at a lower price as a result of our addressing a key demand area and adding supply to the world. And that means less money financing Russian aggression.

We are living in a time of energy shortage globally. The ramifications of this are already apparent, with elevated inflation and geopolitical strife. Our efforts in this presentation are to address the misconceptions that have put us in this position, and to outline a solution that could address them.

Toby Z. Rice  
President and Chief Executive Officer

# EQT Corporation

America's Natural Gas Leader



**Operating in the Core of the Marcellus and Utica Shales, the Largest Natural Gas Resource in the World**



1. Source: EIA 2. Net zero on a Scope 1 and 2 basis for EQT's production segment operations and based on assets owned by EQT as of 6/30/2021. 3. Source: Rystad; GHG Emissions (Kg CO2e)/Production of Hydrocarbons (Bcfe)



## #1

Producer of natural gas in the United States<sup>1</sup>

## Net Zero

By or before 2025<sup>2</sup>  
(among the fastest in the industry)

Since 2005, EQT contributed to

## ~5%

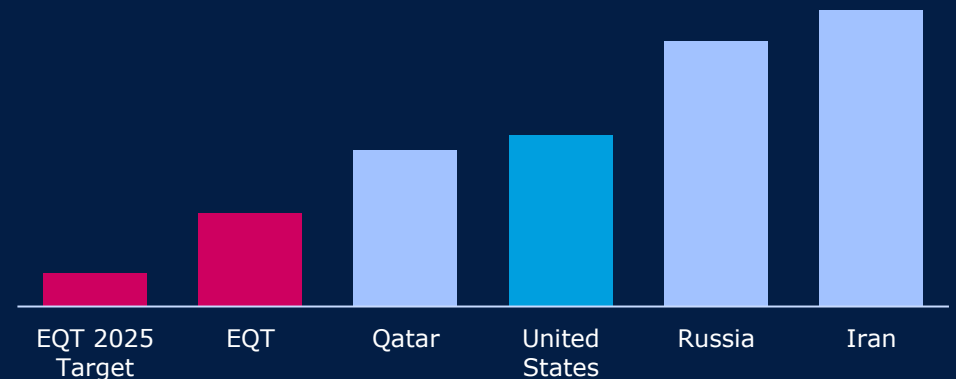
of all reductions in U.S. GHG emissions  
(total U.S. solar industry ~8%)

If EQT were a country, it would be the

## 12th

largest producer in the world  
(~25 Tcf of proved reserves)

### Emissions Intensity of Natural Gas Producers<sup>3</sup>





# Executive Summary

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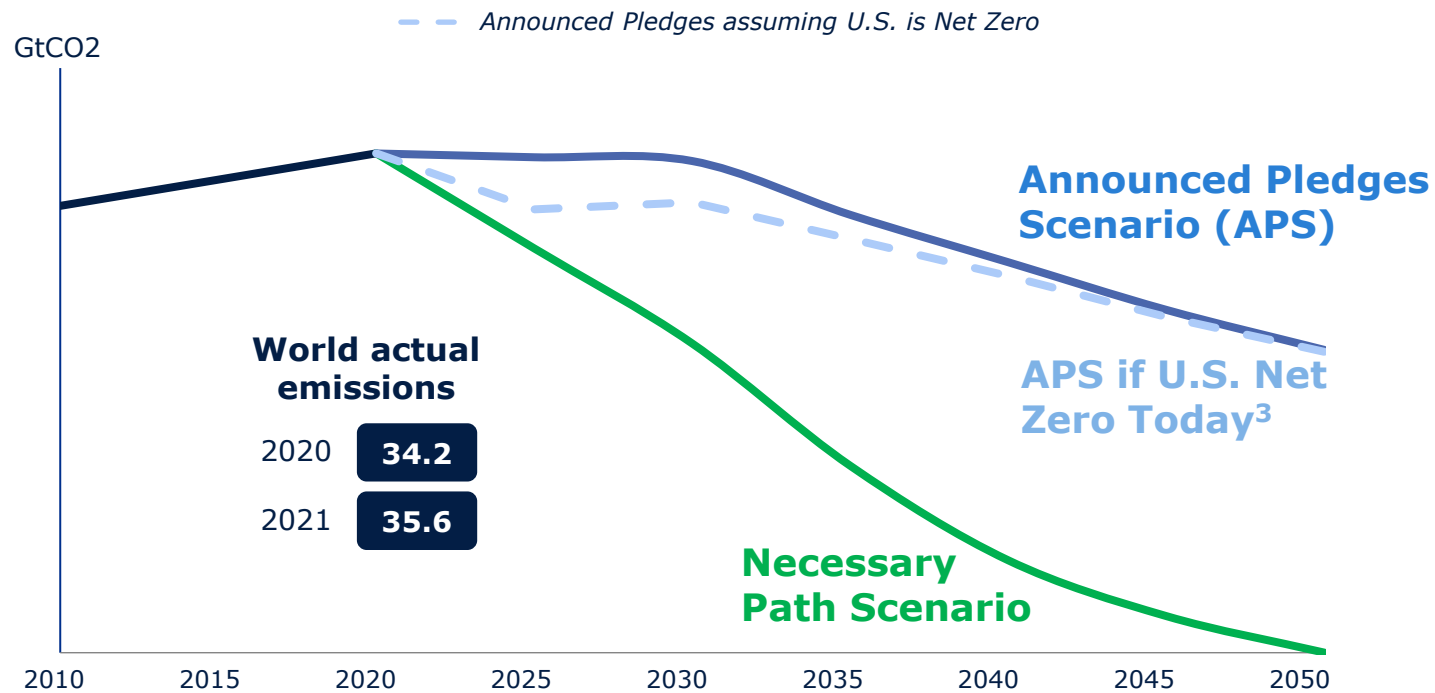


# Climate Change is a Global Problem

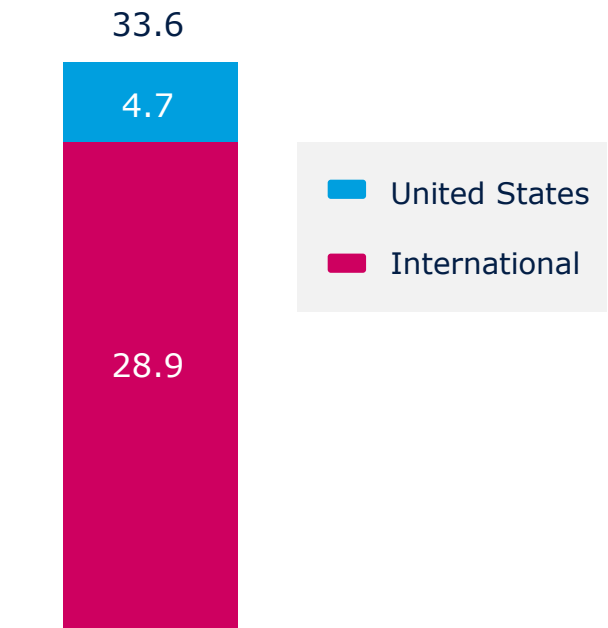
This Global Problem Cannot be Solved Without Addressing International<sup>1</sup> Emissions

**Even if the United States were net zero today, the world would still miss its climate goals**

## Projected Total Global CO<sub>2</sub> Emissions from Coal, Oil, and Natural Gas<sup>2</sup>



## Global 2019 Emissions Billion Metric Tons of CO<sub>2</sub>



1. For purpose of this presentation, "International" refers to all countries except for the United States 2. Announced Pledges Scenario (APS) = Assumes that all climate commitments made by governments around the world and longer-term net zero targets, will be met in full and on time; Necessary Path Scenario = Sets out a narrow pathway for the global energy sector to achieve net zero CO<sub>2</sub> emissions by 2050 3. Assuming U.S. 2020 4.8 GtCO<sub>2</sub> emissions become zero in the next few years



# The U.S. Currently Has No International Plan

## And We Are Failing to Understand What the International Community Needs

### Domestic Policy

U.S. Led the World in Emissions Reduction 2005-2019

**2005:** U.S. was a Major Coal Consumer

#### Phase 1: 2005-2020

- Coal-to-gas switching accounted for 61% of all emissions reduction within the U.S.

#### Phase 2: Optimization 2020+

- Ramp deployment of renewables supported by natural gas baseload.

### U.S. Policy Focus

Targeting Domestic Emissions

**\$250 billion**

Bipartisan Infrastructure<sup>1</sup>

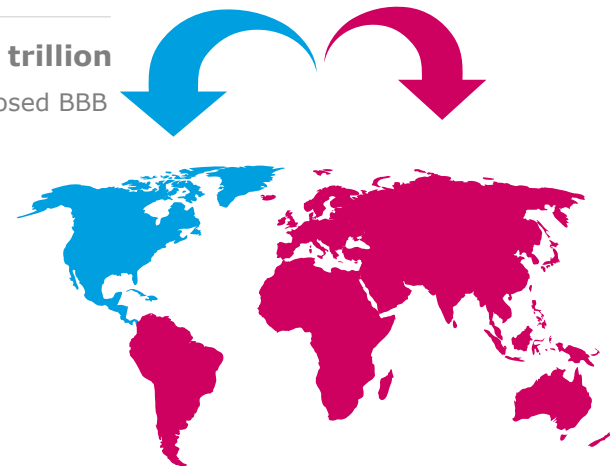
Targeting International Emissions

**\$0 billion**

Proposed

~\$2 trillion

Proposed BBB



Domestic Emissions

**< 5**

Billion Metric Tons CO2 Per Year

International Emissions

**29**

Billion Metric Tons CO2 Per Year

### Global Emissions

### International Policy

Completely Absent, Ignored

**2022:** The World is a Major Coal Consumer

- The rest of the world is currently where the U.S. was in 2005, but on a scale that is six times larger and with insufficient resources to address the problem. Coal accounts for ~50% of international energy emissions, and absolute emissions are rising.

#### Phase 1 (needed): 2022-2040

- Rapid replacement of coal with U.S. natural gas via LNG, resulting in full-cycle emissions reduction of at least 48% vs coal. Continue build out of renewables.

#### Phase 2: 2040+ Optimization

- Ramp deployment of renewables supported by natural gas baseload.

1. Only counting clean energy related investment based on 11/08/21 statement from The White House.  
Source: IEA World Energy Outlook 2021 for 2019; The White House Briefing; ICF Update to the life-cycle analysis of GHG emissions for U.S. LNG exports analysis



# Unleashing U.S. LNG: The Largest Green Initiative on the Planet

Equal to the Combined Impact of Every Domestic Mainstream Green Solution

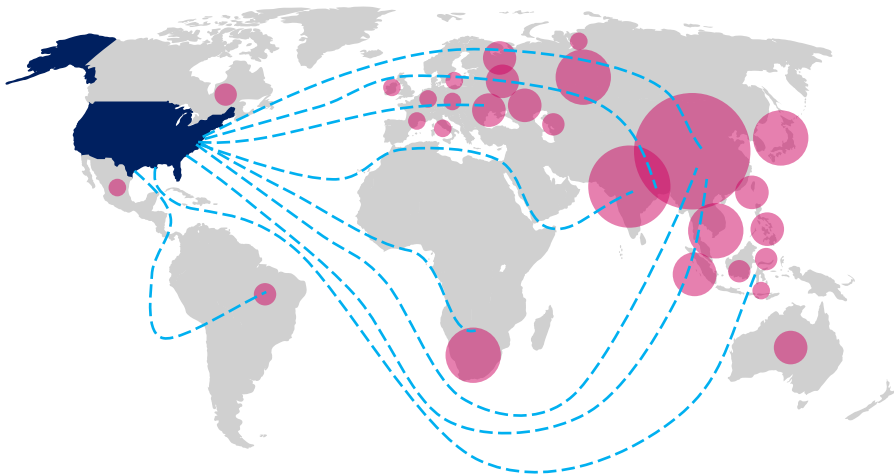
## The Demand

- There is currently 175 Bcfd of coal-to-gas switching demand in the world

## The Plan

- Quadruple U.S. LNG capacity to 55 Bcfd<sup>1</sup> by 2030 to replace international coal at an unprecedented pace
- Fully funded by the natural gas industry. Ready to deploy today

## Targeting International Coal Emissions with U.S. LNG



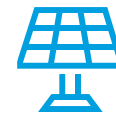
## The Result

- By 2030, an unleashed U.S. LNG scenario would reduce international CO2 emissions by an incremental -1.1 billion metric tons<sup>2</sup> per year
- U.S. citizens will be paid for this initiative (tax revenues and an additional \$75Bn in royalties<sup>3</sup>), as opposed to paying for it

## The emissions reduction impact of an unleashed U.S. LNG scenario is equal to:



Electrifying every U.S. passenger vehicle



Powering every home in America with rooftop solar and backup battery packs



Adding 54,000 industrial scale windmills, doubling U.S. wind capacity

**Combined**

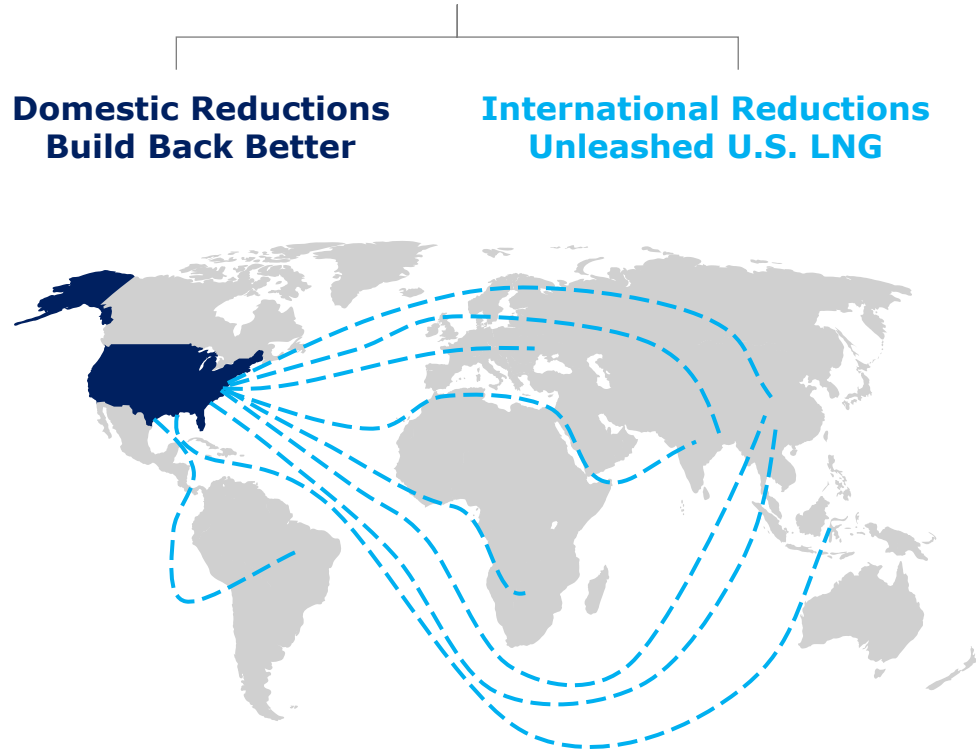
1. Including current capacity, capacity under construction, and future new capacity 2. Assuming 3 bcf under construction, and 40 bcf additional capacity by 2030 3. Incremental cumulative royalties above 2021 levels from 2022-2030 assuming 20% of revenue @ \$3.75 / mcf



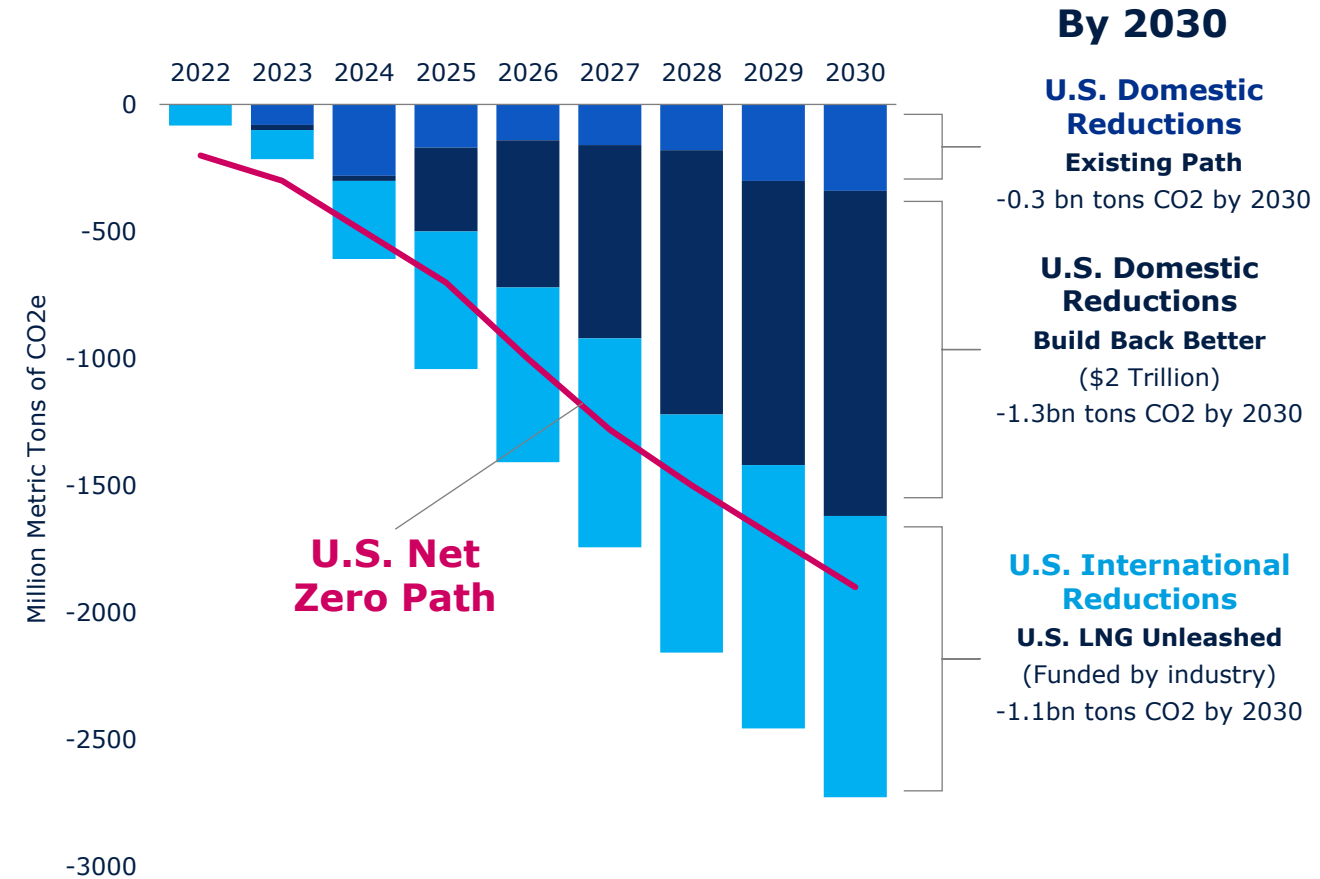
# Adding Unleashed U.S. LNG to Build Back Better

U.S. Could Be Ahead of Our Net Zero Path

## Combined Solutions Put the U.S. Impact on Global Emissions Ahead of the Net Zero Path



## Combining Domestic and International Climate Change Policies







# **Focusing our Climate Efforts on the World's Largest Problem: International Coal**

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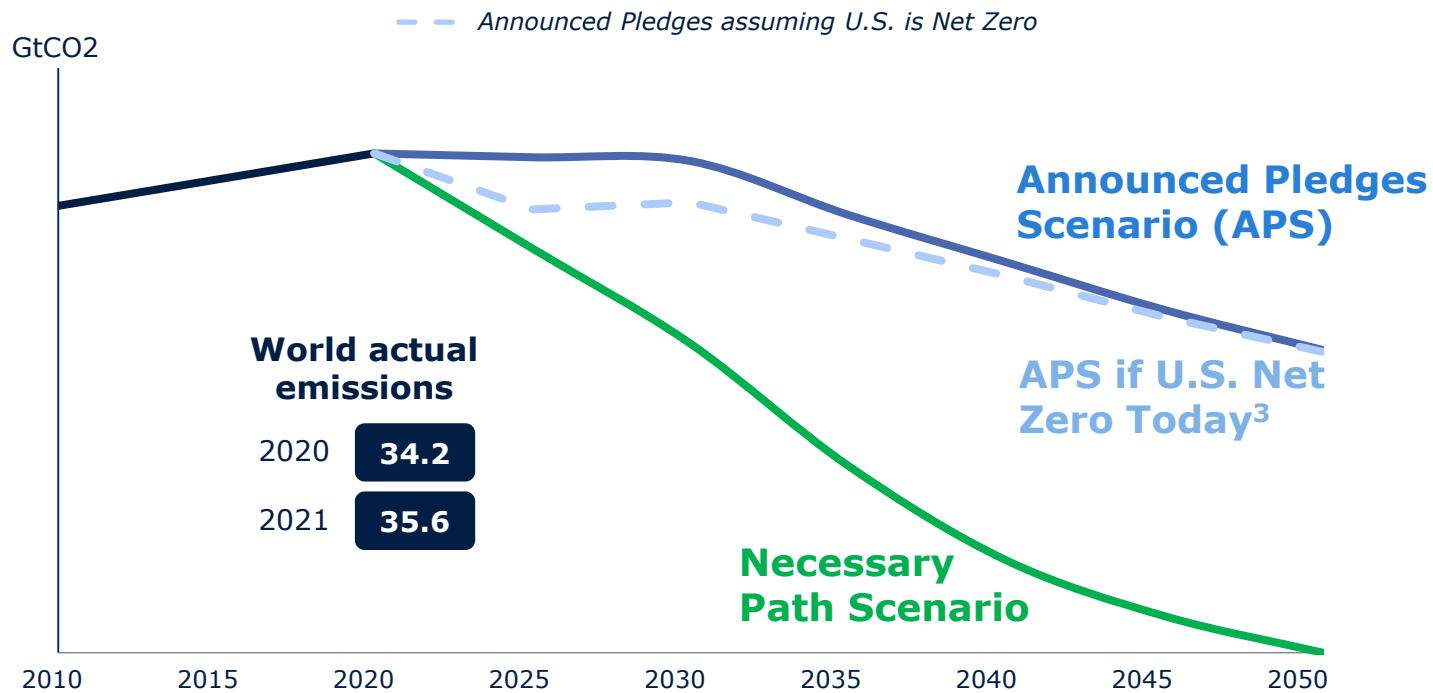


# Climate Change is a Global Problem

This Global Problem Cannot be Solved Without Addressing International<sup>1</sup> Emissions

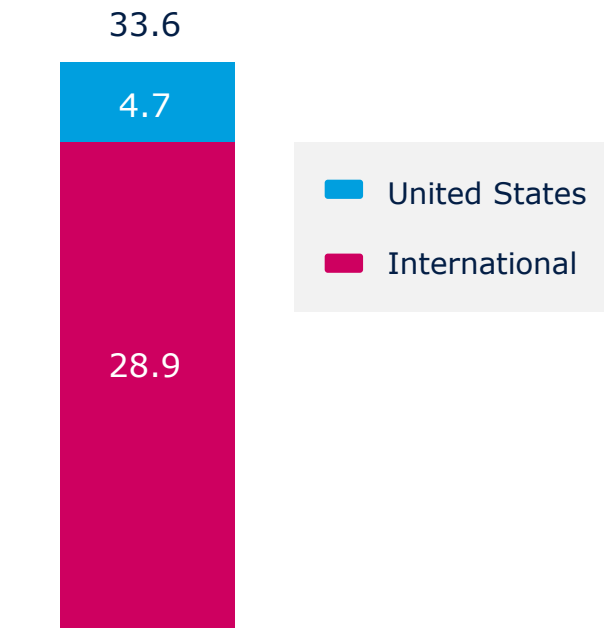
**Even if the United States were net zero today, the world would still miss its climate goals**

## Projected Total Global CO<sub>2</sub> Emissions from Coal, Oil, and Natural Gas<sup>2</sup>



## Global 2019 Emissions

Billion Metric Tons of CO<sub>2</sub>



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# The Elephant in the Room: International Coal

International Coal Use is at All Time Highs, and Rising...

**For the next 20 years, reducing international coal should be our top climate priority**

## Change in CO<sub>2</sub> Emissions from Coal (2005-2019)

**+4.4 Billion Metric Tons**

### International CO<sub>2</sub> Emissions from Coal

The emissions impact of increased international coal consumption was roughly the same as adding another United States to the world

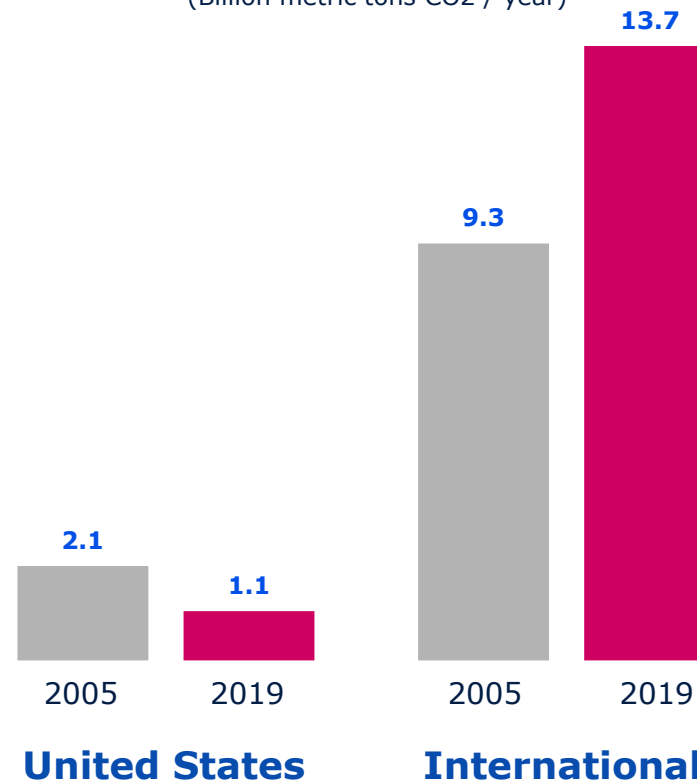
**-1 Billion Metric Tons**

### U.S. CO<sub>2</sub> Emissions from Coal

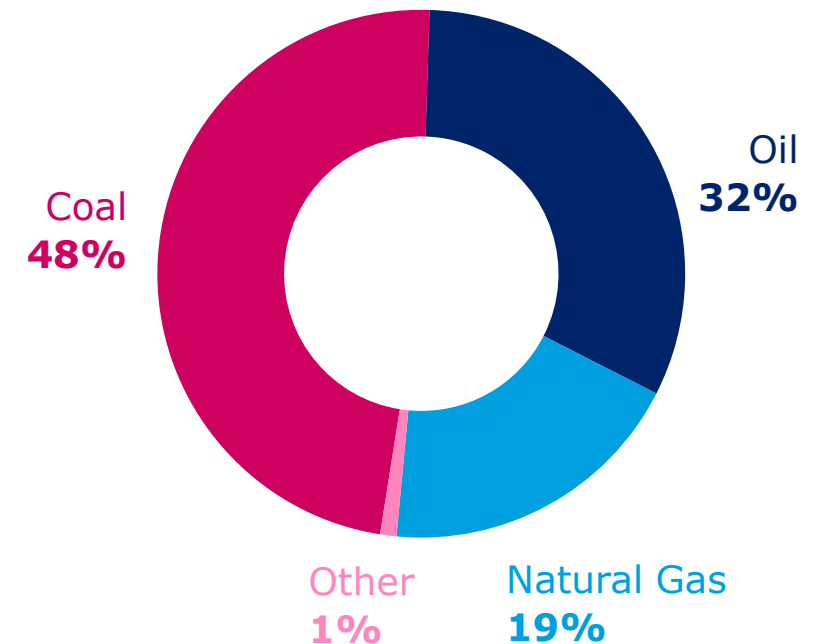
U.S. natural gas displaced domestic coal consumption at unprecedented rates

## Coal CO<sub>2</sub> Emissions

(Billion metric tons CO<sub>2</sub> / year)



## Current International Energy Emissions Sources<sup>1</sup>



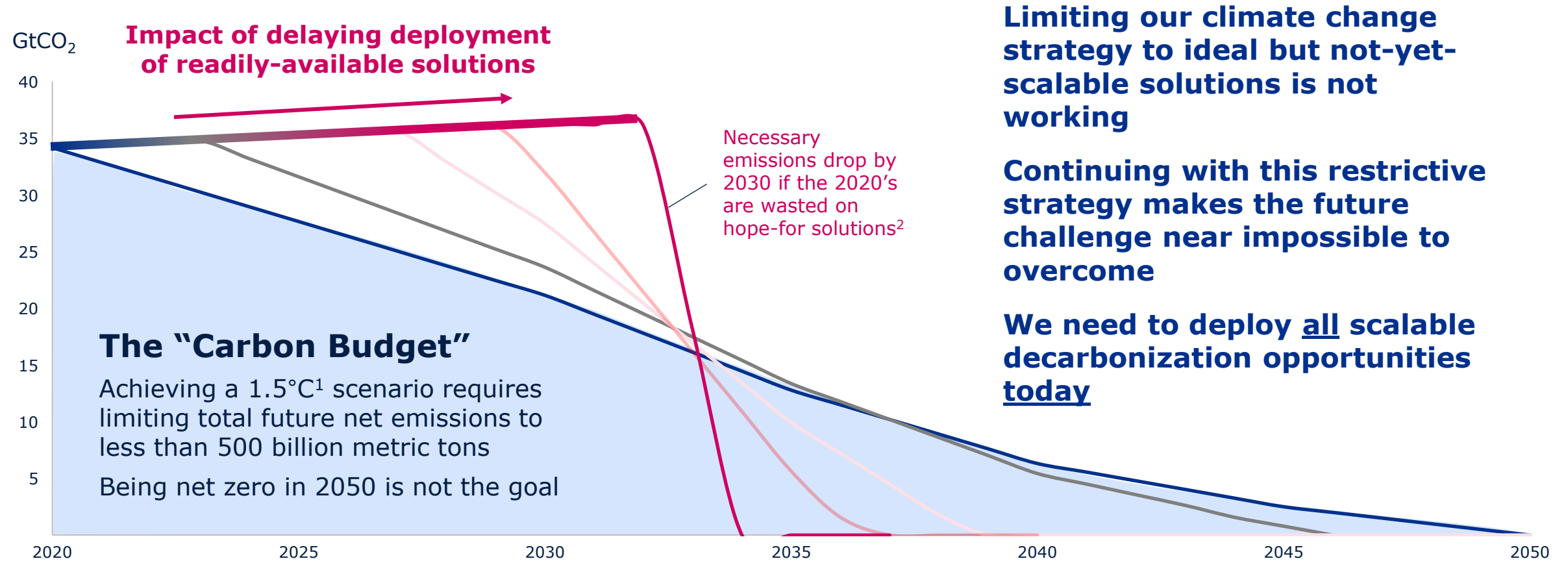
1. Calculated as total global emissions by energy source minus emissions by energy source for U.S. for 2019



# The “Carbon Budget” Cannot Wait on Hoped-For Solutions

Limiting Remaining Emissions to < 500 Billion Metric Tons Requires Rapid Action

## Illustrative CO<sub>2</sub> Emissions Abatement Trajectories



1. Estimated emissions under IEA Net Zero scenario

Note: Remaining scenarios / lines are illustrative to show the cost of not acting now (have been inspired from IPCC’s Climate Change 2021 – The Physical Science Basis report)

Source: IEA World Energy outlook 2021; IPCC’s Climate Change 2021 – The Physical Science Basis report; EQT analysis

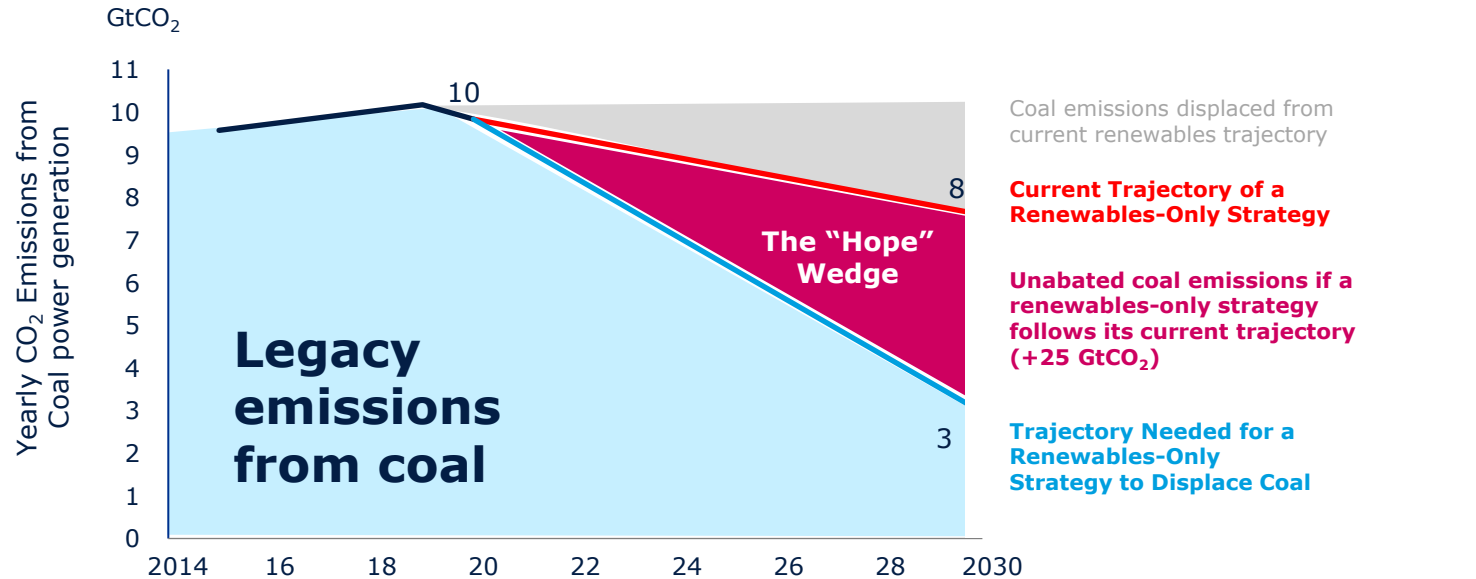


# The Risk of A Renewables-Only Strategy

Coal is the Backup if Unrealistic "Hope" does not Become a Reality

## Current Trajectory of the World's Renewables-Only Strategy<sup>1</sup>

- Historical
- IEA Net Zero Scenario: \$2Tn/year
- Current Renewables-Only Trajectory. \$400Bn/year
- ▲ Additional CO<sub>2</sub> from Coal if IEA Net Zero Scenario Proves Unobtainable



- **The most dangerous part of a renewables-only strategy is what happens if renewables are not (or cannot be) deployed as quickly as hoped**
- Any shortfall without alternative solutions means unnecessary coal emissions will continue through 2050. This risk cannot be taken
- Natural gas serves as the safety net in the event renewables are not (or cannot be) deployed as quickly as hoped

1. NZE scenarios assumes 6.8 Gt of coal emissions replaced by renewables by replacing 6 kTWh of power generation. In the current growth rate scenario, because the investment is ~1/3rd, the emission reduction is assumed in a similar proportion.

## IEA Net Zero Scenario

requires unrealistic solar and wind adoption from undeveloped countries

**~2x – 3x**

**Current Investment Rate**

for a total of \$10-16 Trillion over the next 9 years

**The consequence of "hope" not becoming a reality:**

**Wasting ~5% of the total carbon budget by 2030**

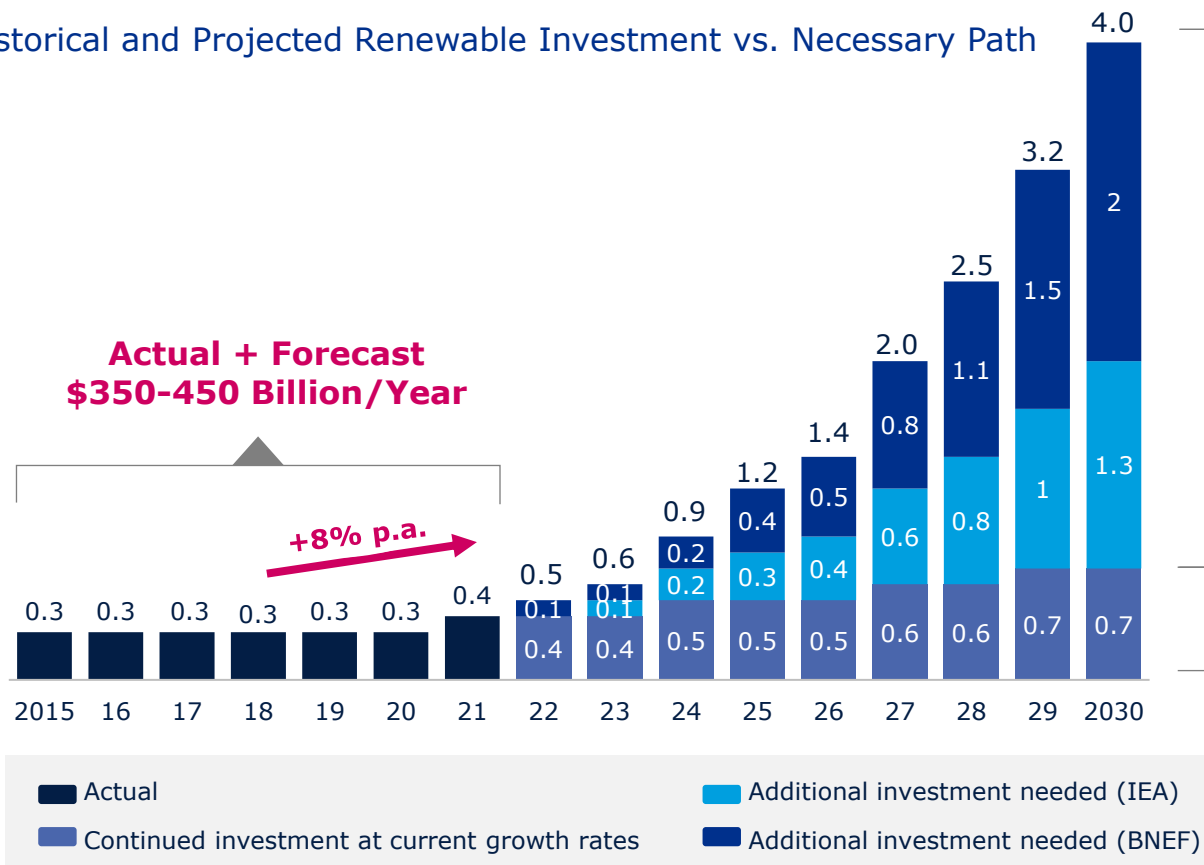
# "Hoping" Undeveloped Countries Can Afford a Renewables-Only Transition

Eliminating Coal Requires Unsustainable Investment



## Renewables Investment

Historical and Projected Renewable Investment vs. Necessary Path



## Scenario Assumptions

**+ \$5-11 Trillion**

Additional investments<sup>1</sup> to achieve Net Zero

**At Risk: 7 Billion Metric Tons Per Year**

Emissions at risk if assumptions do not materialize

## Current Pace

**~\$5 Trillion**

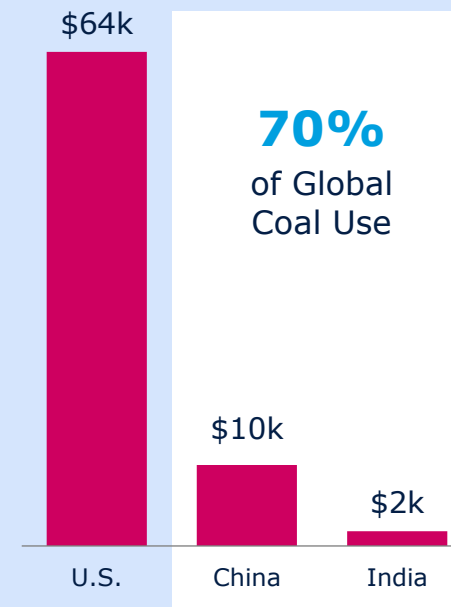
Investments<sup>2</sup> into renewables at current rates

**~2 GTCO<sub>2e</sub>/year<sup>3</sup>**

GHG reduction at 2030

The substantial majority of the \$16 Trillion needed would have to be borne by undeveloped and underdeveloped countries

## Per Capita GDP<sup>4</sup>

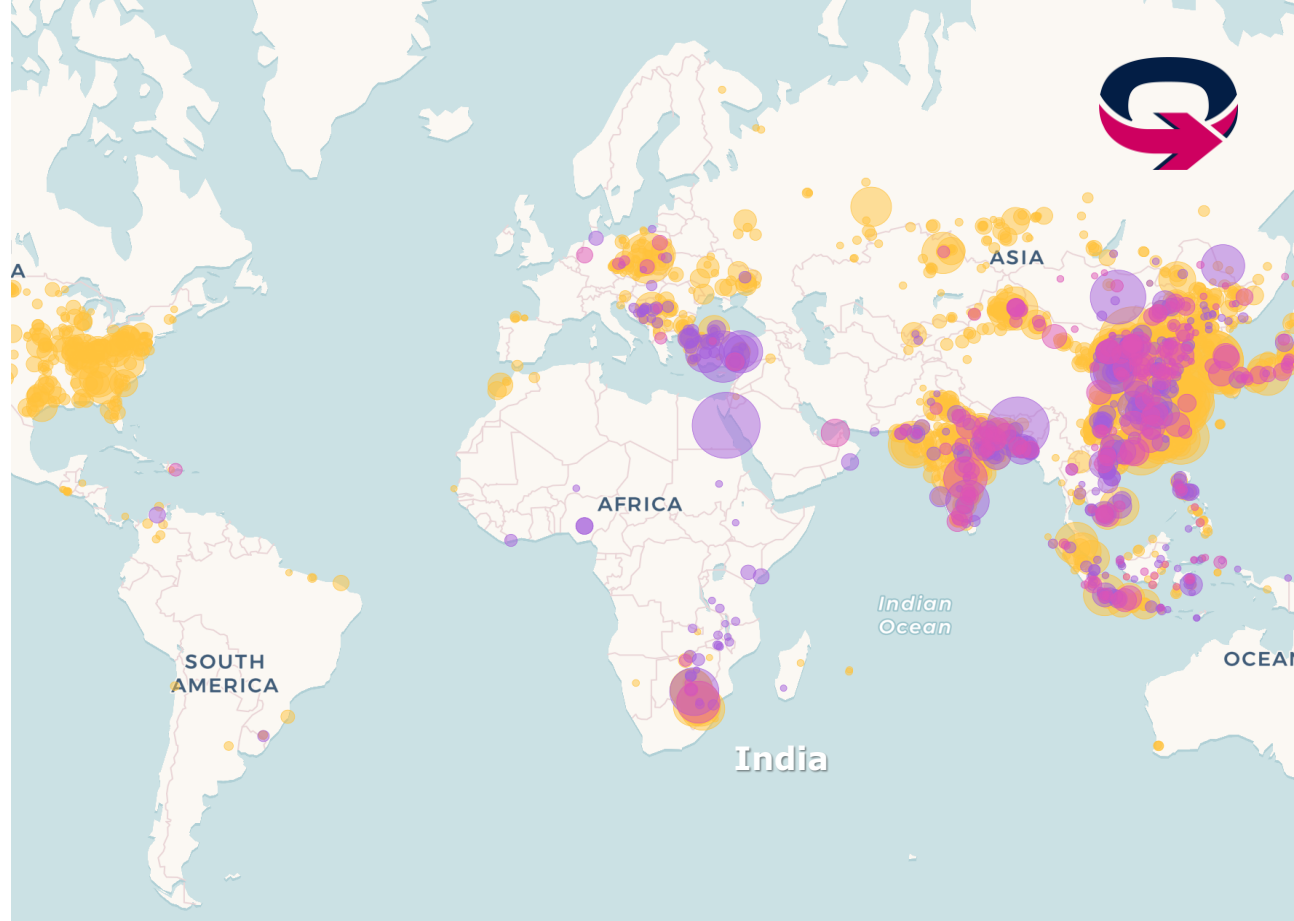
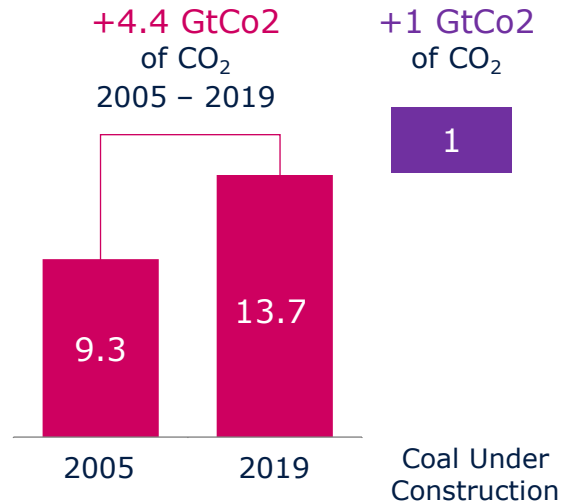


1. The high end is based on green scenario from BloombergNEF, investment profile for IEA case is calculated by splitting total investment through 2030 with assuming a smoothed growth rate // Investment profile for BNEF case is calculated by splitting total investment of BNEF's 22-25' and 26-30' with consistent growth rates in each period in-line with BNEF's total investment for each period. 2. Assumes investment growth at current rates: 8% annual growth. 3. Based on WEO 2021 Net zero scenario, ~13 TWh additional power from renewables by 2030; ~6 TWh of that will replace coal and rest will cover additional demand. The 6 TWh coal-to-renewable will reduce emissions by ~7 GtCO<sub>2e</sub>. For the current-trend scenario, the GHG reduction from renewables is calculated using the same % split between coal replacement and meeting new demand. 4. World Bank 2020.

# We are Seeing the Result of a Strategy Based on "Hope"

Coal Emissions are Increasing While Alternative Actionable Solutions Remain Untapped

## International CO<sub>2</sub> Emissions from Coal Emitted Per Year (Billion Metric Tons)



## More Coal Plants are Being Constructed

- 176 GW of coal plants being constructed right now (China has been adding one coal plant per week)
- **Nearly 2x the coal capacity retired by the U.S. since 2005 (~93 GW)**

- Active Coal Power Plant
- New Coal Power Plant Under Construction

**Our approach to climate change cannot be limited to "hoping" non-OECD countries can move faster... We need to provide solutions.**

1. New emission from coal estimated by multiplying carbon intensity with power generation from new plants under construction. Carbon intensity for coal calculated to be ~1.15 Mt/TWh and power generation is assuming 50 - 68% utilization of new plants (utilization based on existing utilization of coal plants in countries where the plants are being built).

Source: IEA World Energy Outlook, Global coal plant tracker, ICF Update to the life-cycle analysis of GHG emissions for U.S. LNG exports analysis, 2020 Form EIA-860 Schedule 3, Global energy monitor briefing 2021



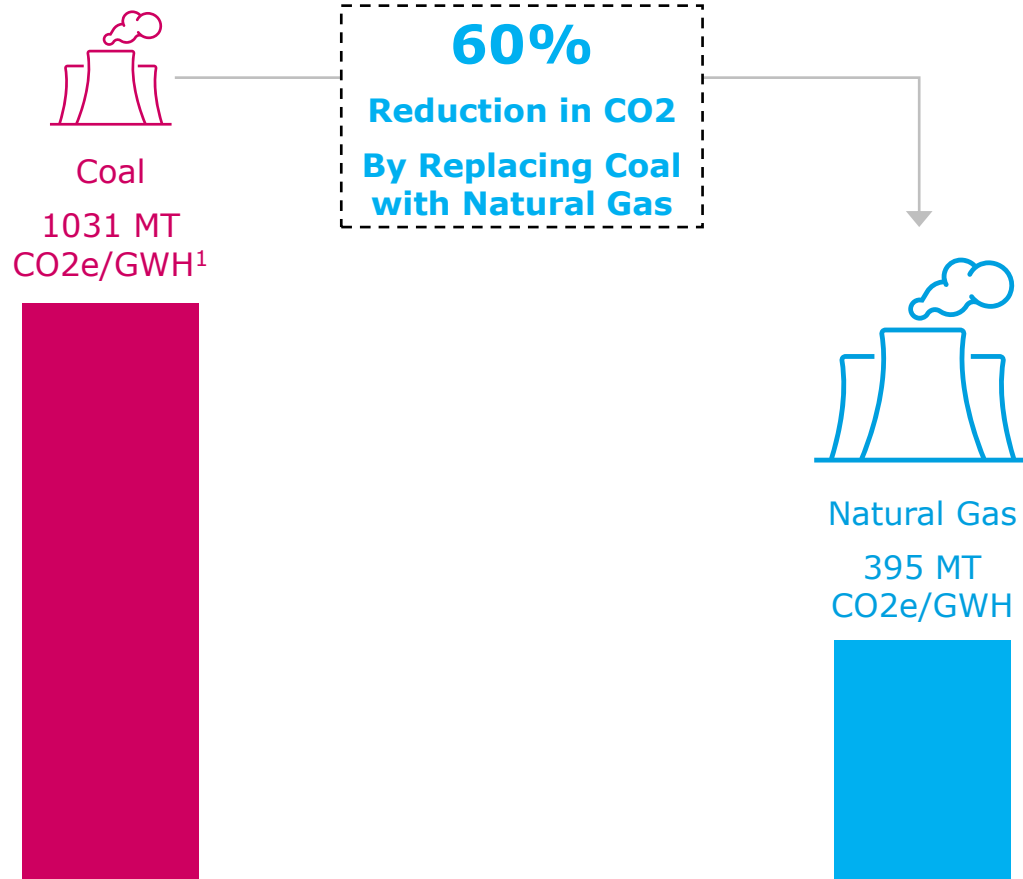
# **The U.S. Model: World-Leading Emissions Reduction by Replacing Coal with Gas**

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# The Basics of Coal-to-Gas Switching

A 60% Reduction in CO<sub>2</sub> Emissions



Source: EIA electricity data + power plant emissions 2020, EIA carbon dioxide emissions coefficients, EIA average operating heat rate



## Need to Know...

### Purpose

- Natural gas power plants provide baseload energy, a perfect complement to intermittent energy sources like wind and solar

### Fewer Power Plants Needed

- Natural gas plants run 50% more efficiently than coal plants (~1 natural gas plant can replace ~2 coal plants)

### A Much Cleaner Fuel

- A molecule of natural gas emits 50% less CO<sub>2</sub> than coal
- Add it all up: Less infrastructure + a 60% reduction in CO<sub>2</sub> emissions

## With a Substantial Path to a Net Zero Future with Natural Gas

Natural Gas With Carbon Capture

**100%**

Carbon Free Energy

Blue Hydrogen with Carbon Capture

**100%**

Carbon Free Energy

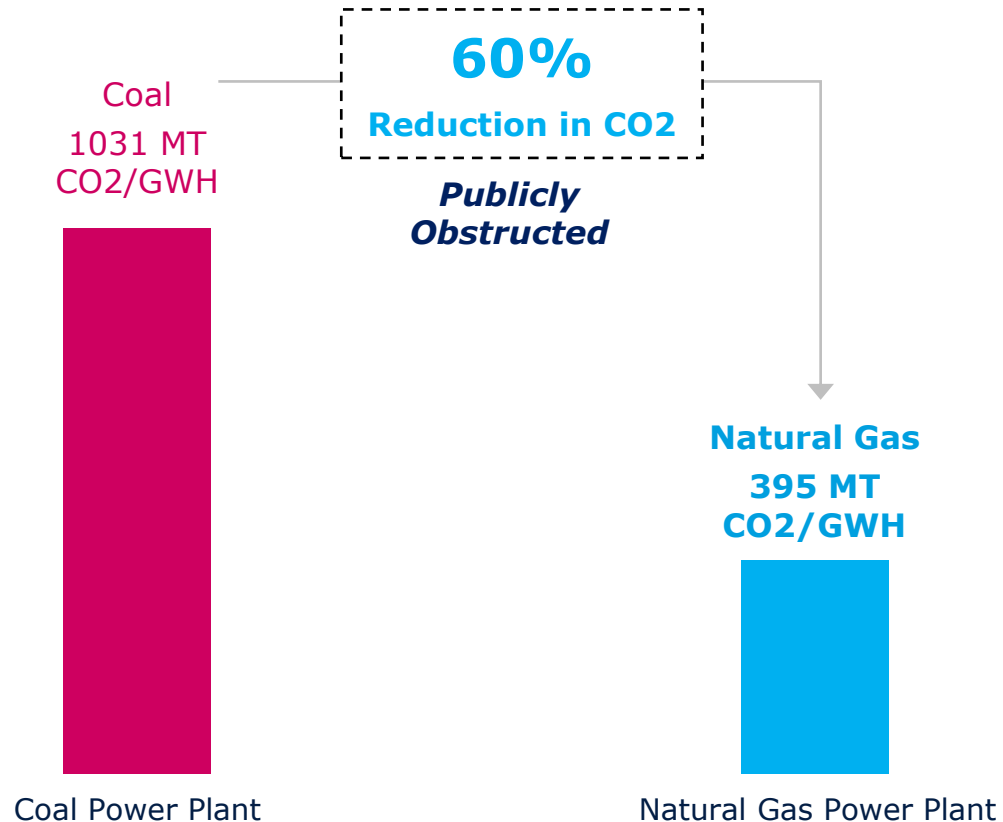


# Natural Gas is the Electric Vehicle of Power Generation

Coal-to-Gas Switching and Vehicle Electrification Deliver the Same Percentage Emissions Reduction

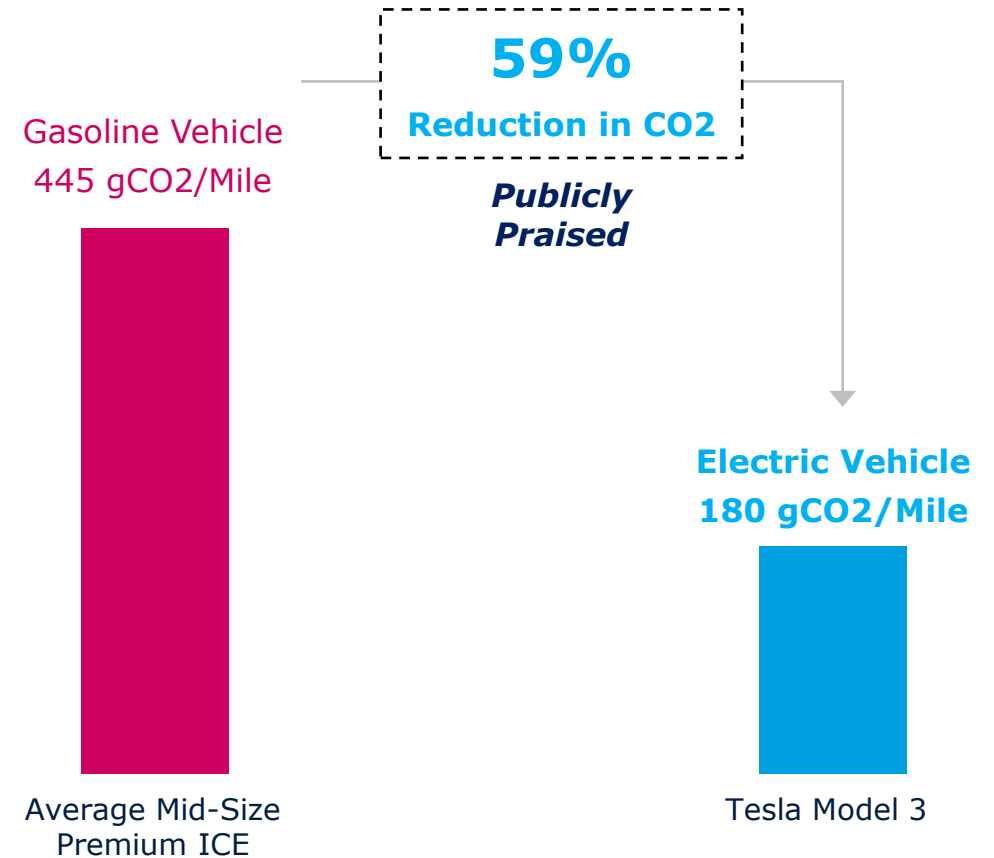
## Electric Power Sector

Common Categorization: **"Fossil Fuels"**



## Transportation Sector

Equally Appropriate Categorization: **"Cars"**





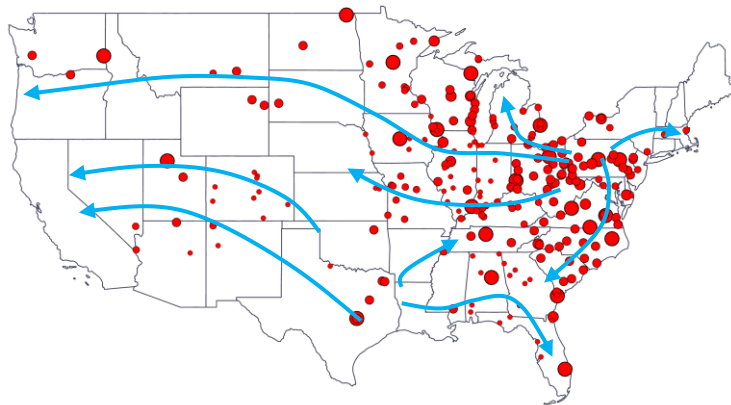
# The U.S. Emissions Reduction Model: An Untold Success Story

U.S. Emissions Decreased by ~1 Billion Metric Tons of CO<sub>2</sub> in 15 Years, Led by Natural Gas Replacing Coal

- The **U.S. leads all countries (and the entire EU) in emissions reduction** since 2005
- The leading contributor to reducing emissions was coal-to-gas switching, accounting for 61% of all emissions reduction within the U.S.
- This effort came at zero cost to U.S. taxpayers, and was the single largest emissions reduction effort in the world

## From 2005-2020

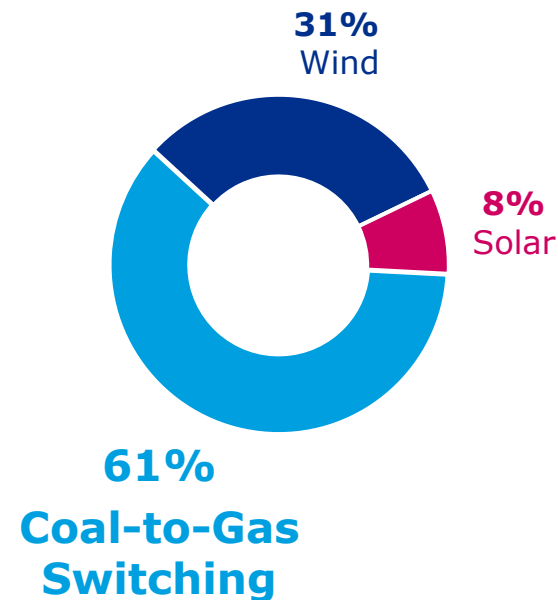
Natural Gas Replaced >200 Coal Plants



 Natural Gas from Gas Shales

 Retired Coal Plant due to natural gas switching

## U.S. CO<sub>2</sub> Emissions Reduction by Solution<sup>1</sup>



## 2005 – 2019 CO<sub>2</sub> Reduction<sup>2</sup>

(Million Metric Tons of CO<sub>2</sub>)

Country	CO <sub>2</sub> Reduction
<b>United States</b>	<b>-959</b>
United Kingdom	-188
Italy	-147
Germany	-144
Japan	-122
Ukraine	-120
Spain	-104
France	-77
Venezuela	-51
Greece	-39

1. Data obtained from EIA's U.S. Energy-Related Carbon Dioxide Emissions, 2019 report, splitting wind and solar proportionally to their increased in power generation from 2005 to 2019 per EIA's renewable generation data; 2. Data obtained from IEA. Source: IEA World Energy outlook 2021; EIA emissions data; EIA form 80 retired plant data, EQT analysis

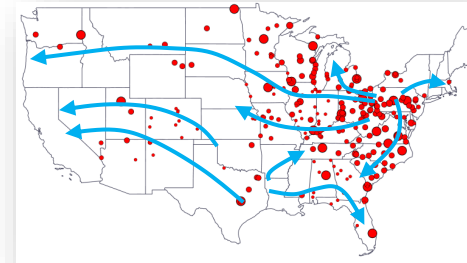
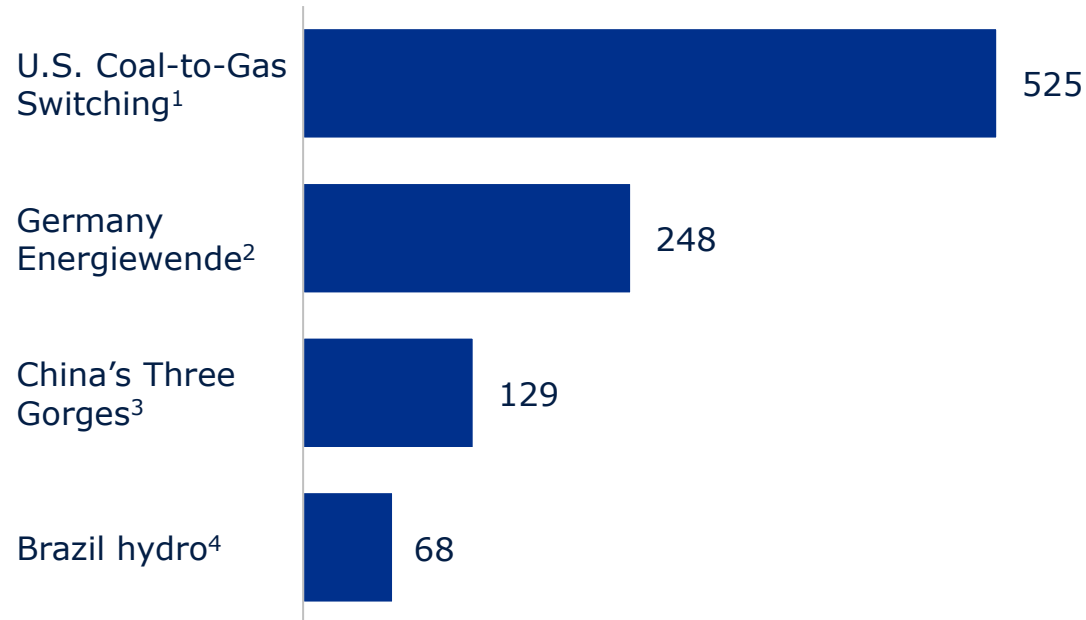


# Putting this Success into Perspective

## U.S. Coal-to-Gas Switching was the Largest Green Megaproject on the Planet

### Impact of Green Mega Projects

(Annual Million Metric Tons CO<sub>2</sub> Reduced 2005-2019)



### U.S. Coal-to-Gas Switching

- Funded by natural gas industry
- Replaced >200 coal plants since 2005



### Germany Energiewende

- Government-funded: ~\$80 Bn<sup>5</sup>
- ~30,000 windmills + 2 million solar arrays installed<sup>6</sup>
- Electricity costs up 3x since 2000<sup>7</sup>



### China's Three Gorges

- Government-funded: \$37 Bn<sup>8</sup>
- Largest power plant in the world

1. Total CO<sub>2</sub> emissions variation between 2005 and 2019 according to EIA report; 2. Germany's CO<sub>2</sub> emissions reduction from 2005 to 2020 (from 997 to 749 MtCO<sub>2</sub>/TWh) based on Federal Ministry For Economic Affairs And Climate Action data; 3. China's Three Gorges Dam 110 TWh generation in 2020 assumed to replace coal which has a carbon intensity factor of 1.15 MtCO<sub>2</sub>/TWh; 4. Brazil hydro generation growth between 2005 and 2020 was 60 TWh assumed to replace coal which has a carbon intensity factor of 1.15 MtCO<sub>2</sub>/TWh; 5. Estimated Germany's climate financing from 2011 through 2021; 6. Per Germany's wind Energy association and Clean Energy Wire; 7. Price index x3 in 2019 compared to 2000 based on BDEW data; 8. China's Three Gorges Dam, including resettling the 1.3 million people it displaced, cost 254.2 billion yuan (\$37.23 billion), according to the Xinhua news agency.



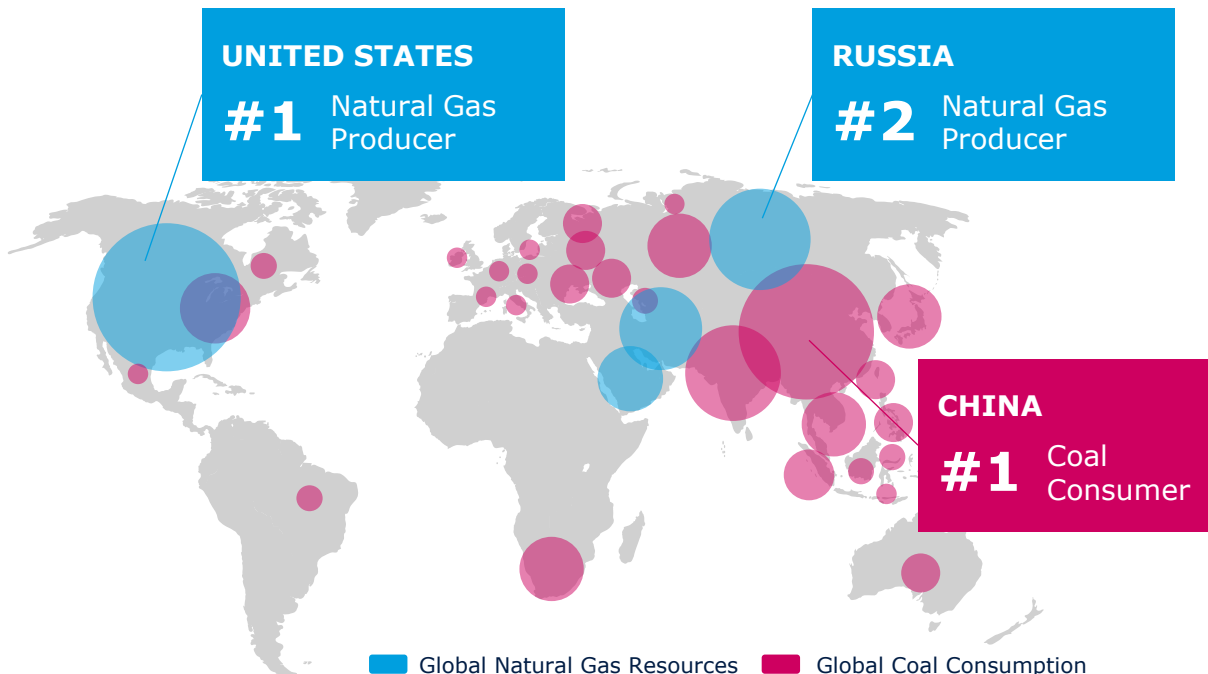
# Coal-To-Gas Switching: Why Haven't Others Followed Our Lead?

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# Why Haven't Others Followed Our Lead?

## They Don't Have Access to the Necessary Natural Gas Resources

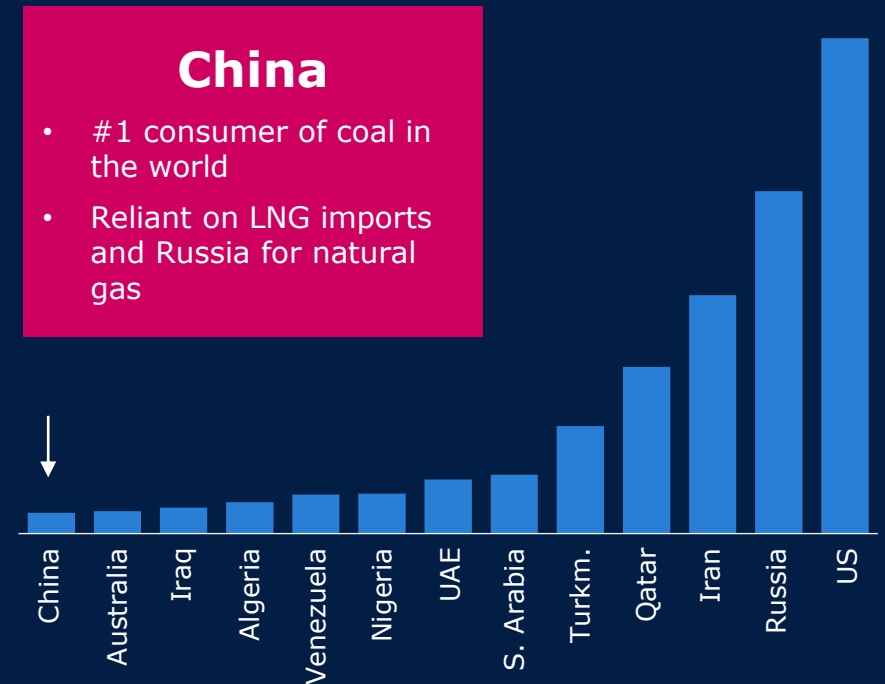
- ~2/3rds of the world's natural gas is concentrated in four countries: United States, Russia, Iran and Qatar
- Coal-reliant countries do not have the natural gas resources to facilitate coal-to-gas switching absent imports
- And they are trying... China is the world's #1 importer of LNG, and growing



1. As used in this presentation, U.S. values are ~460 TCF of proven reserves plus >2,000 TCF of gas resources economical at ~\$3.75/mcf; for the rest of the countries values are limited to proven gas reserves per OPEC data due to not having economically viable unconventional production today;



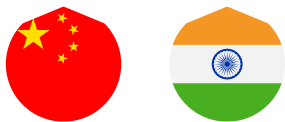
## Natural Gas Economic Resources by Country<sup>1</sup>, TCF



# Emissions From Coal-Reliant Countries are Soaring Without Access to Natural Gas

In the last 20 years, China and India's coal usage added 6.5 billion metric tons of CO<sub>2</sub> emissions, the equivalent of ~3 billion gasoline vehicles<sup>1</sup>, due to lack of available alternatives. Other developing countries are following suit.

## China and India Combined Coal Emissions



2000



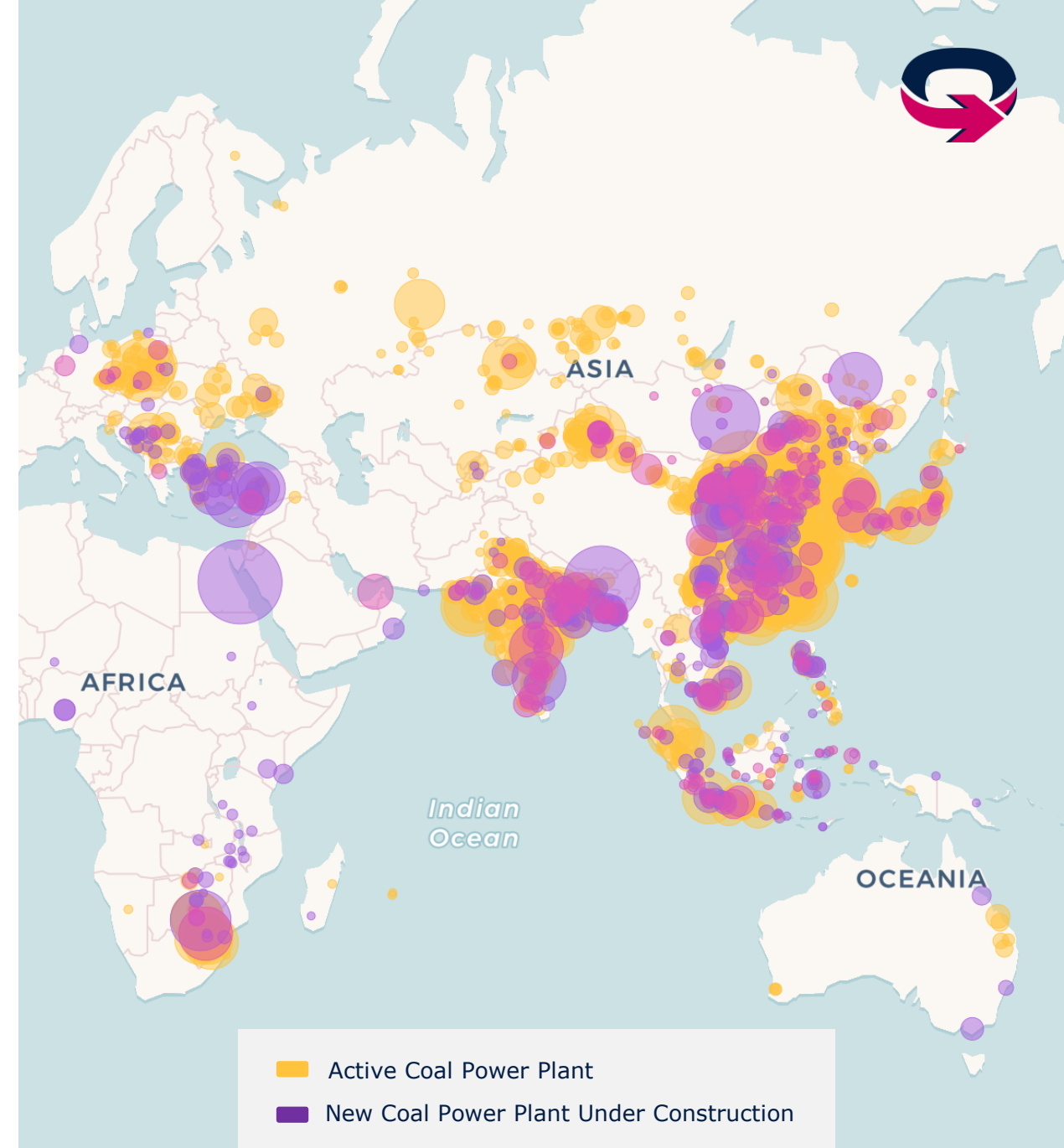
2019

**~3 Billion  
Metric Tons**

**~9.5 Billion  
Metric Tons**

1. ~6 bn Metric Tons added and assuming 15,000 Kms driven per year

Source: IEA website, Global coal plant tracker, ICCT Vehicle life-cycle GHG emissions in U.S



# The U.S. has a Duty to Provide Solutions

The World Lacks the Resources to Address Climate Change

**GDP Per Capita (\$)**



**Natural Gas Resources (TCF)**



**Coal Consumption Change Since 2005 (PJ)**



**CO2 Emissions Change Since 2005 (Million Metric Tons CO2)**

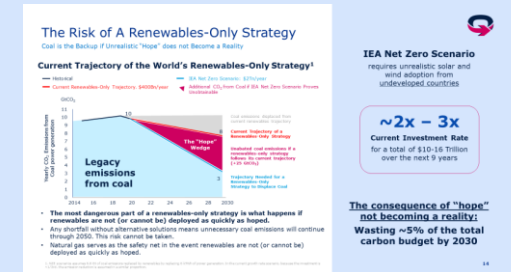


Used value from East Asia and Pacific. South Asia GDP per capita of \$1,824 has not been included.  
 Based on Entire Asia including South Asia  
 Source: Statista, IEA statistics, IEA World Energy Balances, EIA Annual Energy Outlook 2021 Assumptions, Reserves per country from OPEC Annual Statistical Bulletin 2021

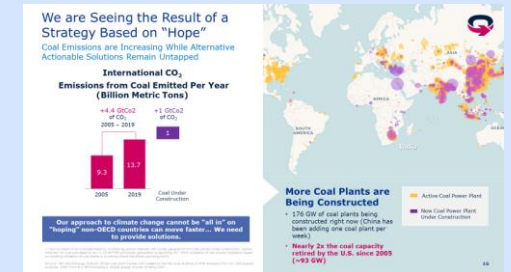


## If the U.S. Does Not Provide the World with Natural Gas

We Resort to "Hope"...

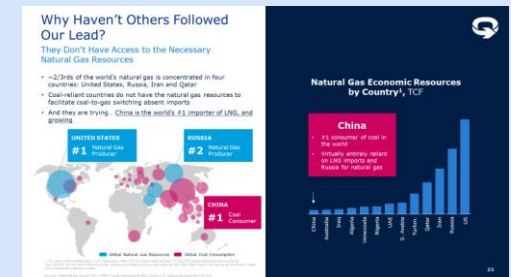


...and Remain Reliant on Coal



or

We "Hope" Russia, Iran and Qatar Fill the Void







# **The Needed U.S. International Policy: Provide a Solution to International Coal**

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# The U.S. Currently Has No International Plan

## And We Are Failing to Understand What the International Community Needs

### Domestic Policy

U.S. Led the World in Emissions Reduction 2005-2019

**2005:** U.S. was a Major Coal Consumer

#### Phase 1: 2005-2020

- Coal-to-gas switching accounted for 61% of all emissions reduction within the U.S.

#### Phase 2: Optimization 2020+

- Ramp deployment of renewables supported by natural gas baseload.

### U.S. Policy Focus

Targeting Domestic Emissions

**\$250 billion**

Bipartisan Infrastructure<sup>1</sup>

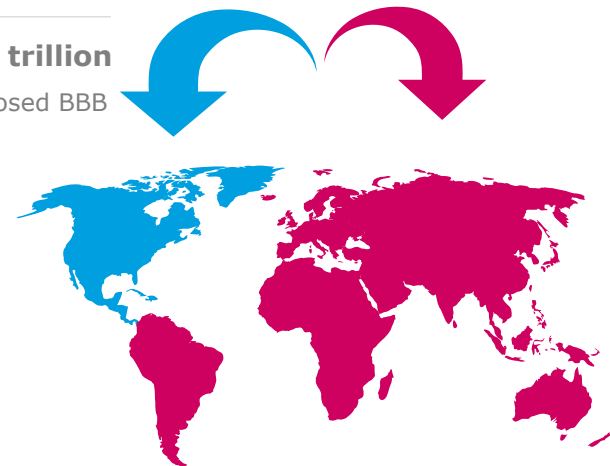
Targeting International Emissions

**\$0 billion**

Proposed

~\$2 trillion

Proposed BBB



Domestic Emissions

**< 5**

Billion Metric Tons CO2 Per Year

International Emissions

**29**

Billion Metric Tons CO2 Per Year

### Global Emissions

### International Policy

Completely Absent, Ignored

**2022:** The World is a Major Coal Consumer

- The rest of the world is currently where the U.S. was in 2005, but on a scale that is six times larger and with insufficient resources to address the problem. Coal accounts for ~50% of international energy emissions, and absolute emissions are rising.

#### Phase 1 (needed): 2022-2040

- Rapid replacement of coal with U.S. natural gas via LNG, resulting in full-cycle emissions reduction of at least 48% vs coal. Continue build out of renewables.

#### Phase 2: 2040+ Optimization











- Ramp deployment of renewables supported by natural gas baseload.

1. Only counting clean energy related investment based on 11/08/21 statement from The White House.  
Source: IEA World Energy Outlook 2021 for 2019; The White House Briefing; ICF Update to the life-cycle analysis of GHG emissions for U.S. LNG exports analysis



# Natural Gas: The U.S. Solution to International Coal

Natural Gas is the Only Exportable, Currently-Scalable Solution to International Coal

Clean Energy Solution	Replaces Coal	Emission Reduction vs Target <sup>2</sup>	Exportable	Subsidized vs. Obstructed	Rapid Deployment
 <b>U.S. Natural Gas</b>	✓	<b>-60%</b>	✓	<b>Obstructed</b>	✓
 <b>Electric Vehicles</b>	✗	-60%	✓	<b>Subsidized</b>	✗
 <b>Nuclear</b>	✓	-98%	✗	<b>Obstructed</b>	✗
 <b>Batteries</b>	✓	-92%	✗	<b>Subsidized</b>	✗
 <b>Wind</b>	✓	-98%	✗	<b>Subsidized</b>	✗
 <b>Solar</b>	✓	-93%	✗	<b>Subsidized</b>	✗
 <b>Hydrothermal</b>	✓	-98%	✗	<b>Subsidized</b>	✗
 <b>Geothermal</b>	✓	-98%	✗	<b>Subsidized</b>	✗
 <b>Biofuel</b>	✗	-95%	✓	<b>Subsidized</b>	✗
 <b>Hydrogen</b>	✓	-89%	✗	<b>Subsidized</b>	✗

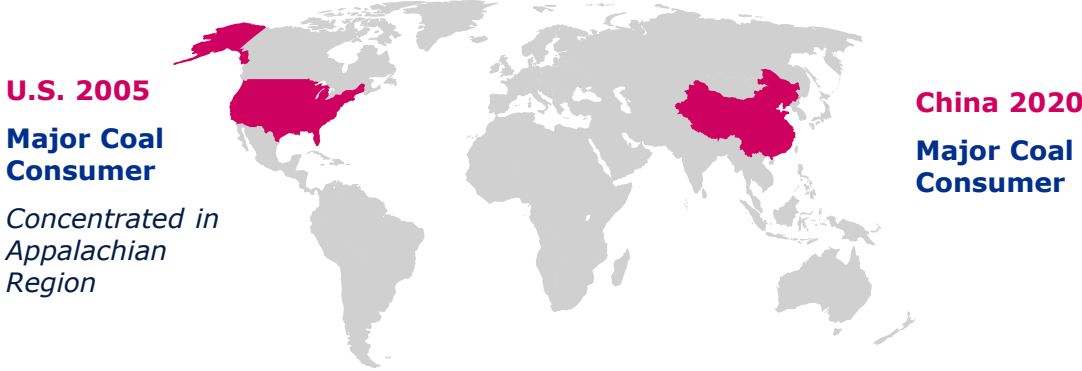
1. The U.S. currently imports 93% of all wind/solar/batteries from international sources, primarily China 2. Target for coal replacement considered to be 1.19 MtCO<sub>2</sub>/TWh;

Source: IEA World Energy outlook 2021; IEA's Global EV Outlook 2021; World Nuclear Association; Kinder Morgan Investor Presentation; International Council on Clean Transportation (ICCT); EIA; Energy.gov; S&P Global; EQT analysis

# China's Current Electricity Mix Mirrors that of Pennsylvania and Ohio in 2005



With Natural Gas Supply, China Could Replicate the U.S. Model for Emissions Reduction



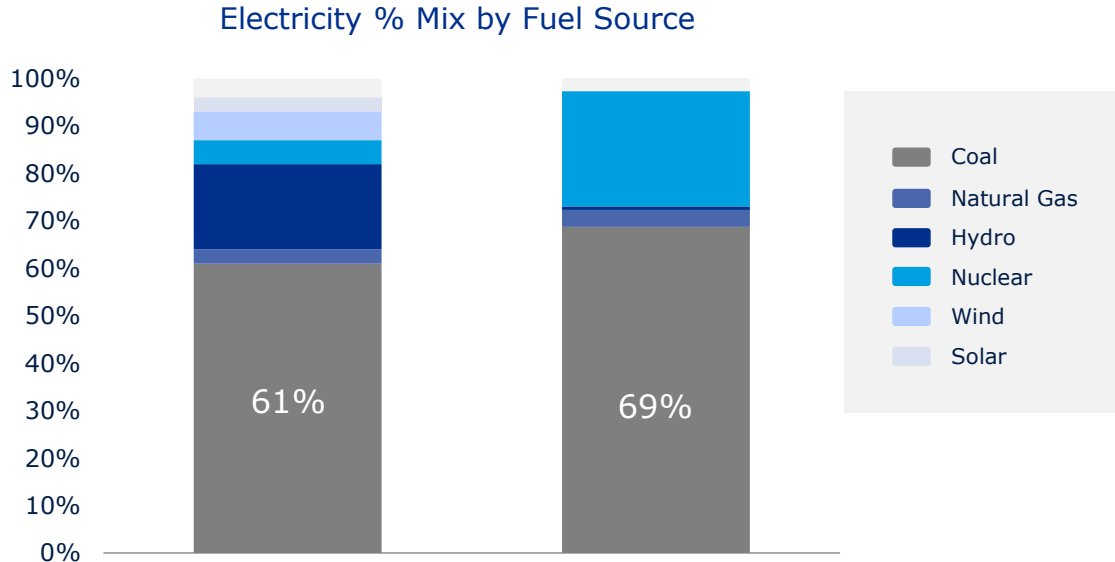
## Pennsylvania and Ohio

- Led the U.S. in absolute emissions reduction between 2005 and 2019, principally as a result of coal-to-gas switching

## China

- 10 Billion metric tons of CO2 per year, principally due to coal

## 2020 China vs 2005 Pennsylvania + Ohio



**What if the U.S. could help China and other coal-reliant countries reduce their dependence on coal?**

Source: <https://www.eia.gov/electricity/data/state/>



# Pennsylvania and Ohio: The Power of Coal-to-Gas Switching

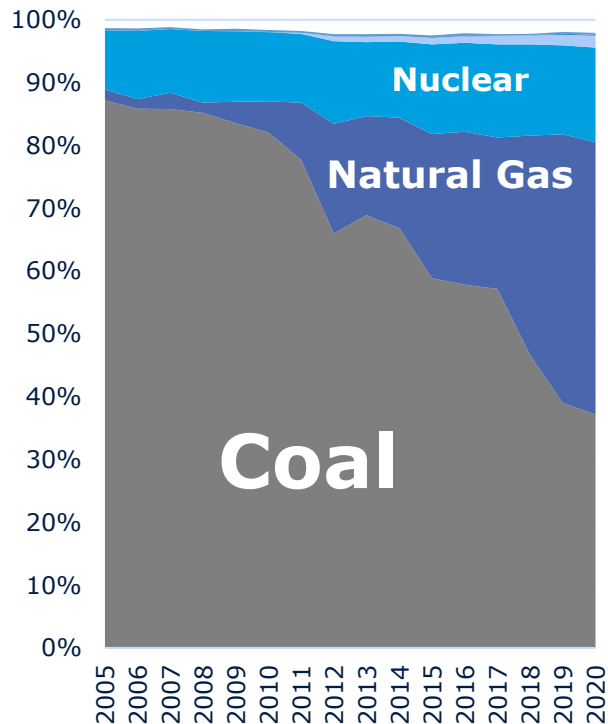
Demonstrating the Impact of Providing a Natural Gas Solution to Coal-Reliant Regions

**With <5% renewables, Ohio and Pennsylvania led the U.S. in emissions reduction over the last 15 years**

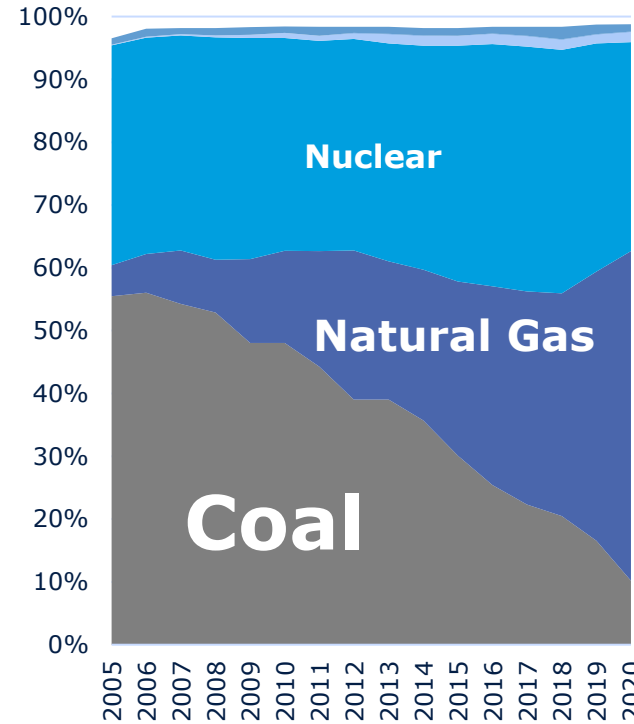
**OHIO**  
**#1** State in Reducing CO2

**PENNSYLVANIA**  
**#2** State in Reducing CO2

**Electricity Mix %**



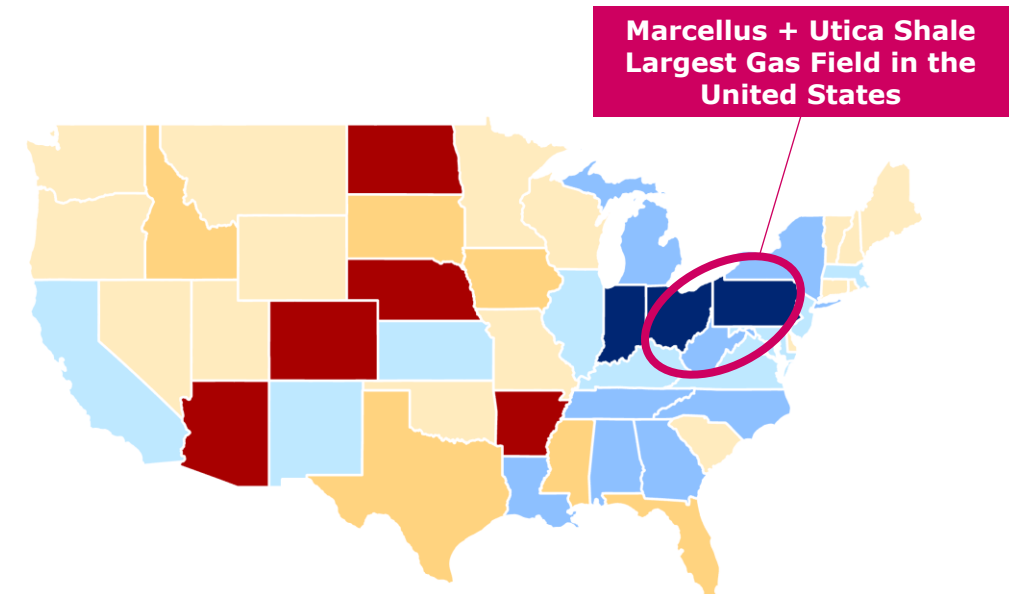
**Electricity Mix %**



## 2000-2019 Change in Annual CO2 Emissions

Led by Pennsylvania and Ohio

Moderate CO2 Reduction  
CO2 Addition: [Dark Red] [Orange] [Light Orange] [Light Blue] [Medium Blue] [Dark Blue] Largest CO2 Reduction





# The Only Solution: Unleashing U.S. LNG

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# Unleashing U.S. LNG: The Largest Green Initiative on the Planet

## Equal to the Combined Impact of Every Domestic Mainstream Green Solution

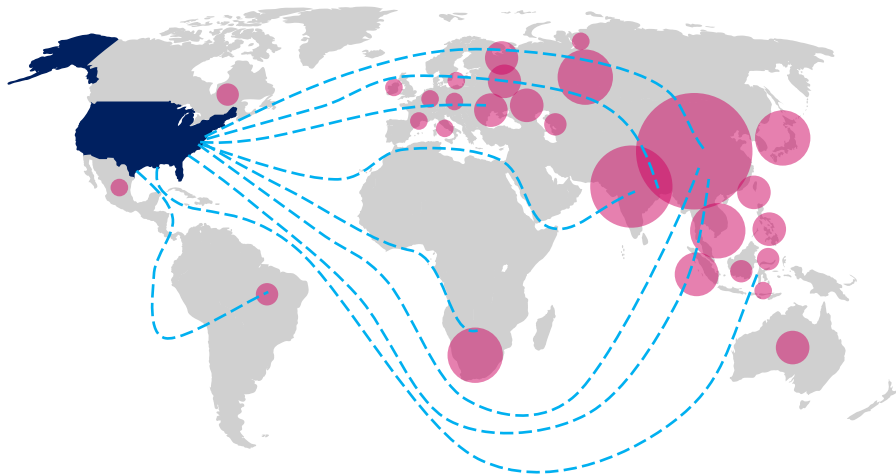
### The Demand

- There is currently 175 Bcfd of coal-to-gas switching demand in the world

### The Plan

- Quadruple U.S. LNG capacity to 55 Bcfd<sup>1</sup> by 2030 to replace international coal at an unprecedented pace
- Fully funded by the natural gas industry. Ready to deploy today.

### Targeting International Coal Emissions with U.S. LNG



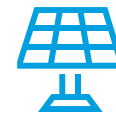
### The Result

- By 2030, an unleashed U.S. LNG scenario would reduce international CO2 emissions by an incremental -1.1 billion metric tons<sup>2</sup> per year
- U.S. citizens will be paid for this initiative (tax revenues and an additional \$75Bn in royalties<sup>3</sup>), as opposed to paying for it

### The emissions reduction impact of an unleashed U.S. LNG scenario is equal to:



Electrifying every U.S. passenger vehicle



Powering every home in America with rooftop solar and backup battery packs



Adding 54,000 industrial scale windmills, doubling U.S. wind capacity

## **Combined**

1. Including current capacity, capacity under construction, and future new capacity 2. Assuming 3 bcf under construction, and 40 bcf additional capacity by 2030 3. Incremental cumulative royalties above 2021 levels from 2022-2030 assuming 20% of revenue @ \$3.75 / mcf



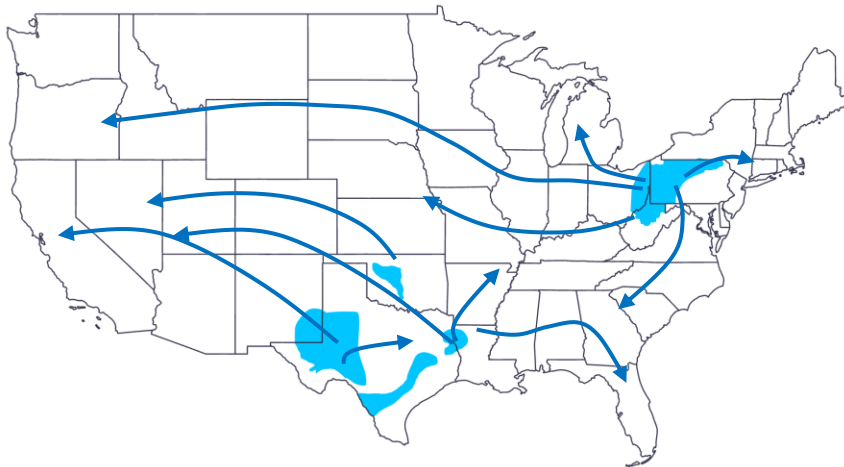
# Connecting U.S. Gas to the World

## The Basics of LNG Infrastructure

The ability to meet natural gas demand domestically and abroad, and the benefits associated therewith, is entirely dependent on infrastructure

### Domestic Coal-to-Gas Switching

Connecting natural gas to coal-demand regions by **pipelines**



### International Coal-to-Gas Switching

Connecting U.S. natural gas to international coal demand regions by **pipelines** and **LNG tankers**



### LNG: From the Well to the International End-User

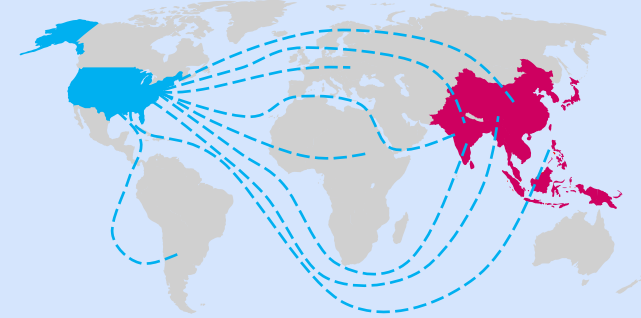
1. U.S. natural gas developed in shale basins
2. U.S. natural gas travels by pipeline to an LNG export facility on the coast
3. The LNG export facility liquefies the natural gas and loads the LNG onto tankers
4. LNG cargoes are shipped around the world to an import facility
5. Liquefied gas is turned back to gaseous form for consumption





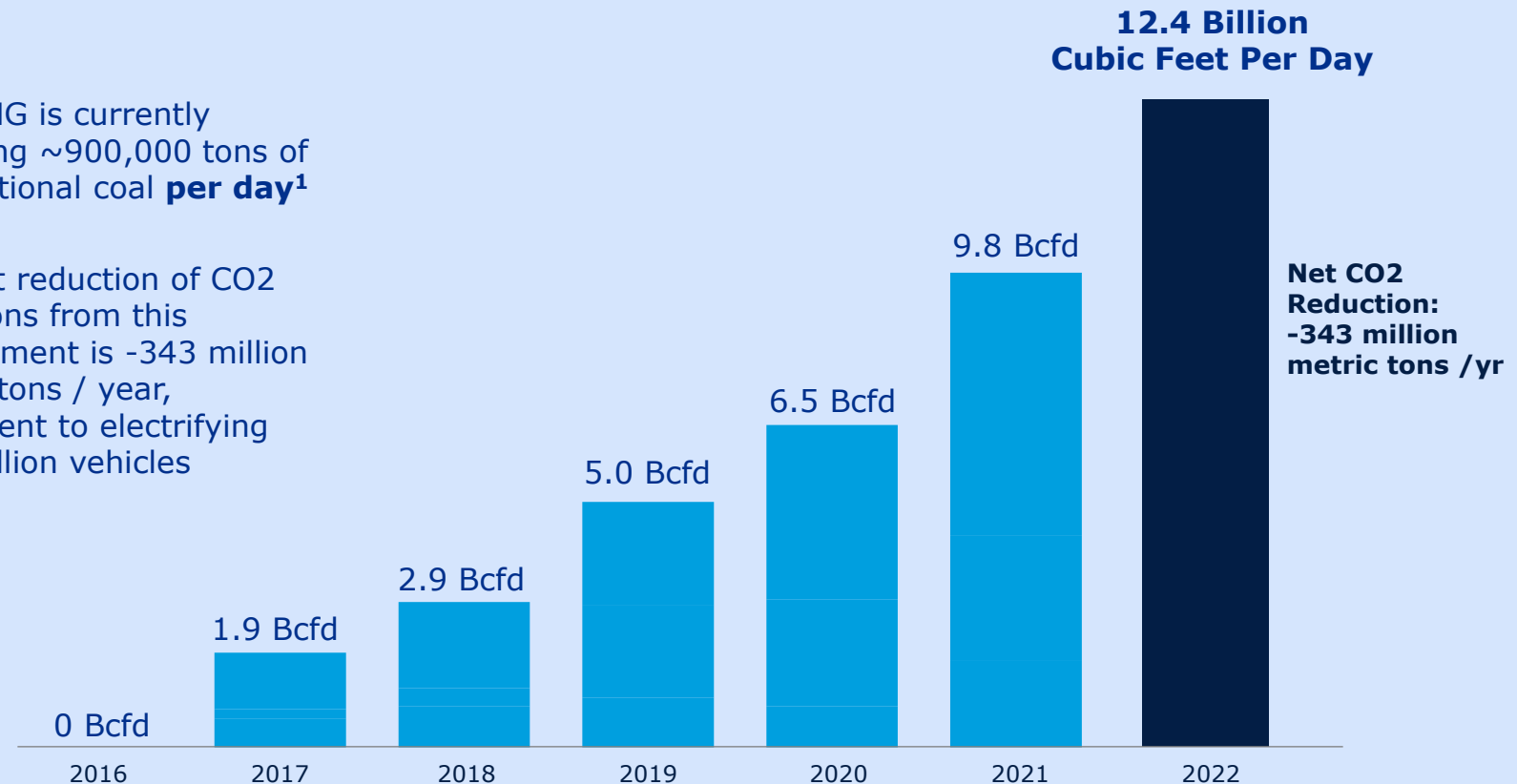
## U.S. LNG Export Capacity

LNG export facilities are currently located predominantly on the Gulf Coast



U.S. LNG is currently replacing ~900,000 tons of international coal **per day**<sup>1</sup>

The net reduction of CO<sub>2</sub> emissions from this replacement is -343 million metric tons / year, equivalent to electrifying 125 million vehicles



## U.S. LNG Export Capacity Growth Over Time

From Zero to the World's #1 LNG Exporter in Six Years...

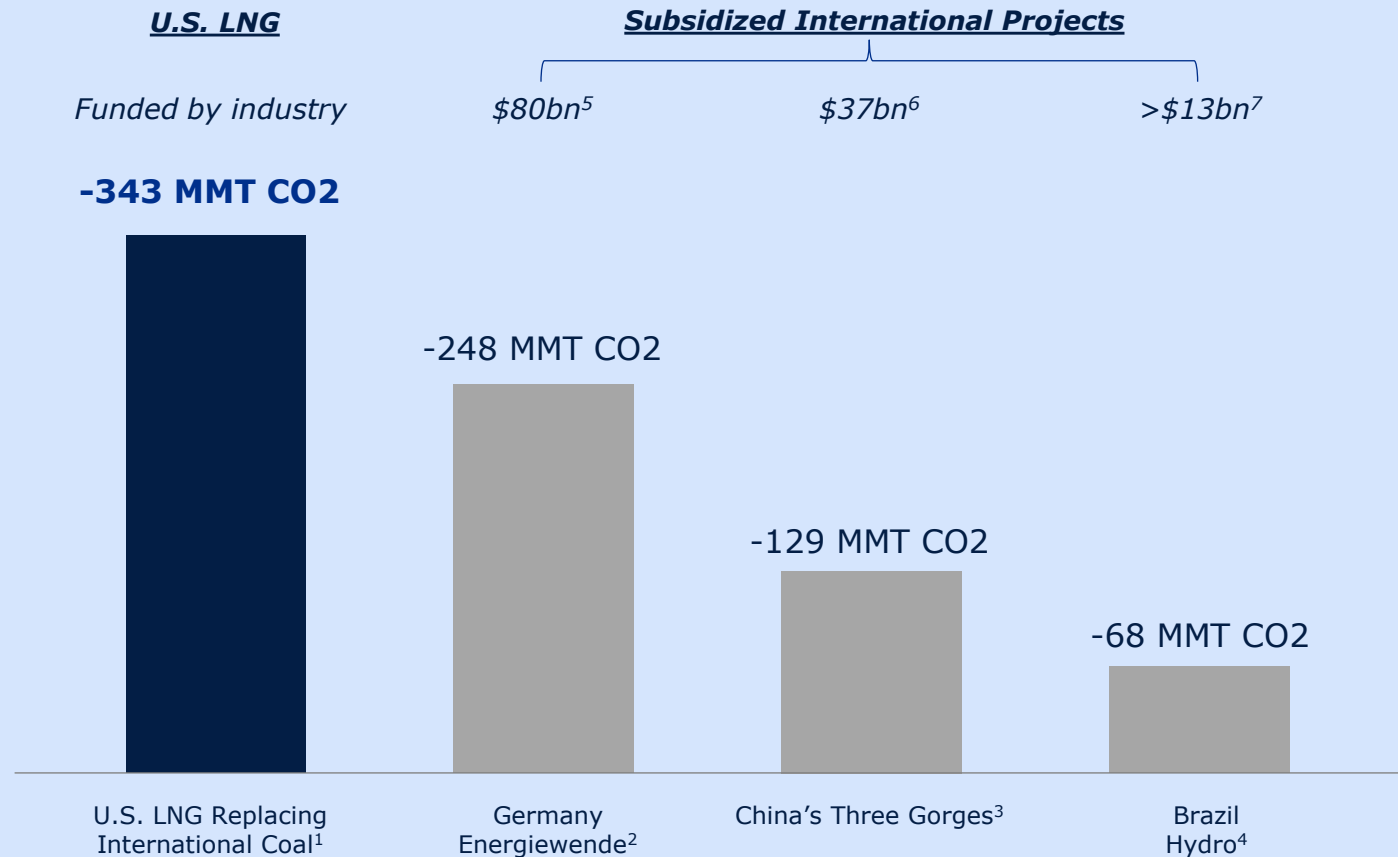
...But More is Needed

1. International coal displaced is calculated by total thermal unit generated by gas divided by average heating content of coal (~19.8 mmbtu/short ton) // Net GHG reduction is calculated based on the emission differential between coal and natural gas (~560 CO<sub>2</sub>e kg/MWh) based on a study from ICF.

Source: EIA U.S. Natural Gas Exports and Re-Exports by Point of Exit, Reuters, EIA CO<sub>2</sub> emission coefficient.



## In just six years, U.S. LNG has reduced global emissions more than any other green project in the world



## The Emissions Impact of U.S. LNG Today

Already the Largest Green Megaproject on the Planet

1. U.S. LNG 2022 exports of 12.4 bcf, considering displacement of coal power generation assuming 1 bcf = 136.2 GWh, a coal carbon intensity factor of 1.15 MtCO<sub>2</sub>/TWh and gas with 0.60 MtCO<sub>2</sub>/TWh; 2. Germany's CO<sub>2</sub> emissions reduction from 2005 to 2020 (from 997 to 749 MtCO<sub>2</sub>eq.) based on Federal Ministry For Economic Affairs And Climate Action data; 3. Emissions displaced by China's Three Gorges Dam assuming the 110 TWh the dam produced in 2020 were produced with coal, considering China's coal carbon intensity factor of 1.15 MtCO<sub>2</sub>/TWh; 4. Brazil hydro generation growth between 2005 and 2020 was 60 TWh, displacing coal with a 1.15 MtCO<sub>2</sub>/TWh carbon intensity factor; 5. Estimated Germany's climate financing from 2011 through 2021; 6. China's Three Gorges Dam, including resettling the 1.3 million people it displaced, cost 254.2 billion yuan (\$37.23 billion), according to the Xinhua news agency; 7. Cost of the Belo Monte dam along the Xingu River per EIA.



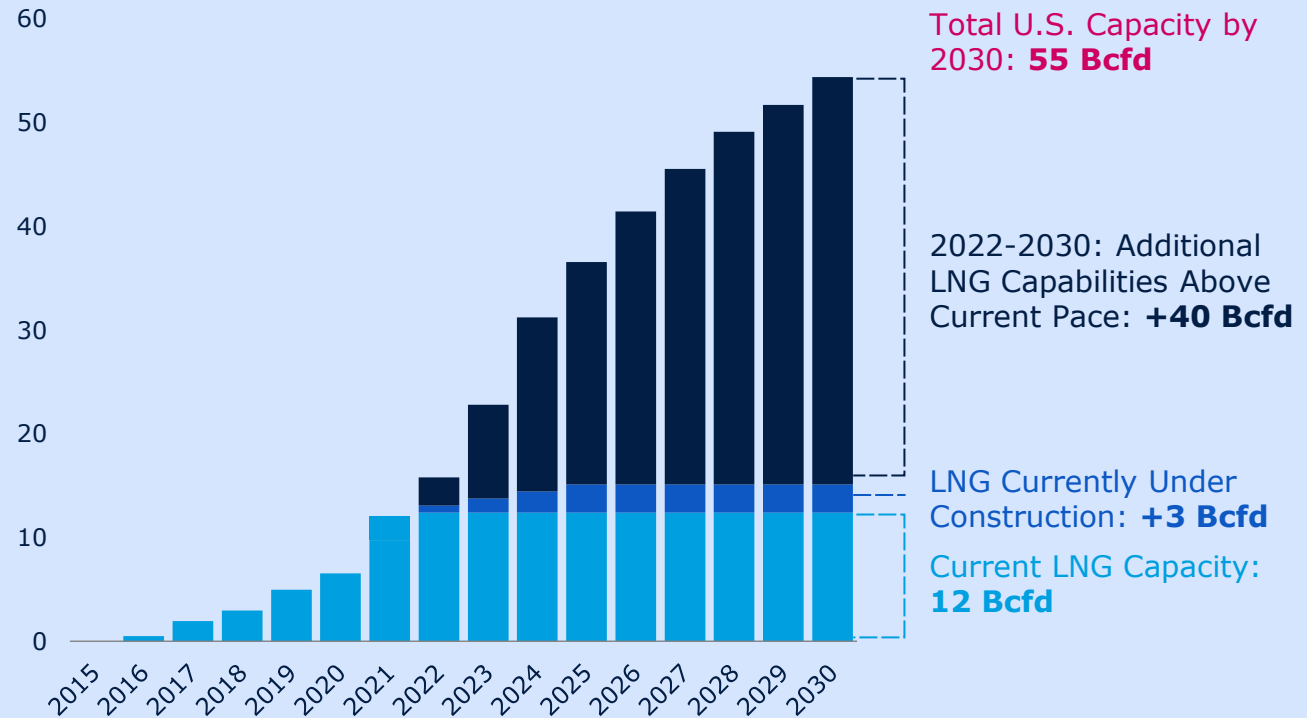
# Looking Forward: U.S. LNG Could Grow 6x the Current Obstructed Pace

## Opposition to Natural Gas Infrastructure is Impeding What is Possible

- An unleashed U.S. LNG scenario assumes production increases in-line with historic rates and a prioritization of LNG and pipeline infrastructure build<sup>2</sup>
- The only barricade to expanding on what is *already* the largest green project → opposition to infrastructure

## Projected LNG Export Capacity Through 2030<sup>1</sup>

LNG Export Capacity (Bcfd)



Emissions Impact

-1.1 billion metric tons CO<sub>2</sub>/yr

-75 million metric tons CO<sub>2</sub>/yr

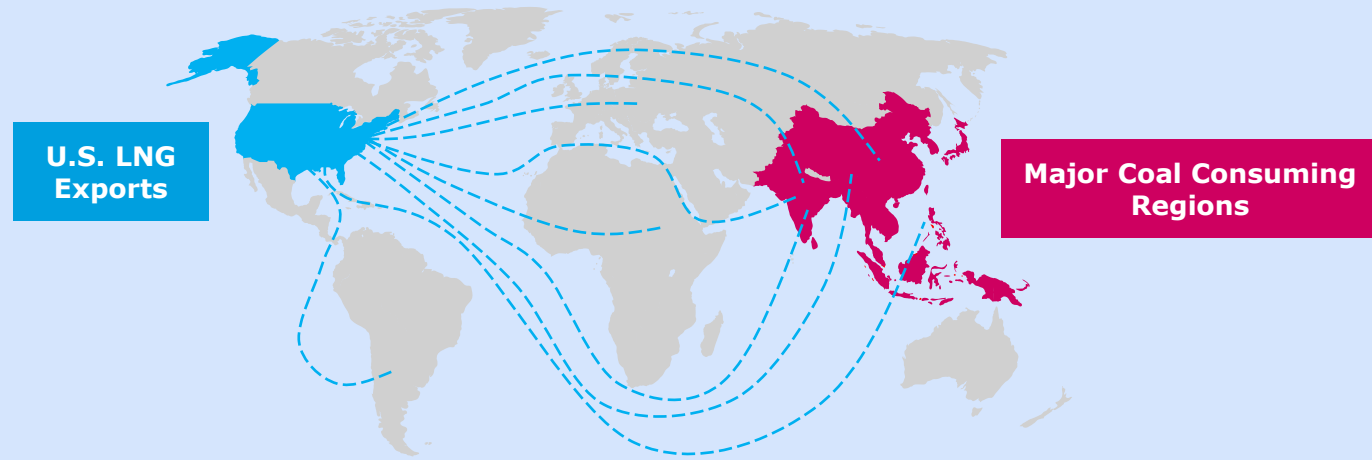
-343 million metric tons CO<sub>2</sub>/yr

1. Based on an internal study, U.S can produce 40 bcf production surplus by 2030. 2. There is 3 bcf capacity currently under construction, and another 3 bcf anticipated. Therefore, projected incremental capacity is 6bcfd. To reach an additional 40 bcf, the incremental needs to be 6x, which is in line with non-obstructed pace. 3. Assuming 3 bcf under construction, and 40 bcf additional capacity by 2030.



# Our Solution In Action: Unleashing U.S LNG

Unlocking the Largest  
Green Initiative on  
the Planet



- 1 Accelerate Development of the World's Largest Gas Resource**
  - The U.S. has the largest, lowest-cost, least emissions-intensive resource in the world
  - Addition of just 50 rigs increases production by ~45 Bcfd (+50%) by 2030<sup>1</sup>
- 2 Expand Pipeline and LNG Infrastructure on U.S. Coasts**
  - Build pipelines to the U.S. East Coast while expanding Gulf Coast pipeline network
  - Construct 40 Bcfd of new LNG export capacity by 2030, and 50 Bcfd by 2040<sup>1</sup>, primarily on the East Coast
- 3 Distribute U.S. LNG to International Coal-Reliant Countries**
  - There is currently **175 Bcfd of coal-to-gas switching demand** in the world<sup>2</sup>
  - The United States could replace ~1/3 of international coal on its own in the next 20 years

**An Unleashed LNG Scenario Eliminates >1 Billion Metric Tons of CO<sub>2</sub>/yr Above Current LNG Pace**

1. Based on internal evaluation, new shale gas development can create 45bcfd of new production by 2030, of which 40 bcfd is above forecasted U.S. demand and 50 bcfd will be above U.S. demand by 2040. Therefore, corresponding LNG capacity will be needed to export the additional natural gas surplus. 2. Natural gas volume needed to replace all power-based coal usage.



# Unleashing U.S. LNG: How We Do It

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# Our Industry is Ready to Execute Today

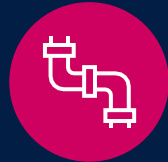
Unleashing LNG Requires No Taxpayer Funding, With Activity Levels In-Line With Historic Pace



## Upstream

**Add**  
Just 50 Rigs

> \$500bn in well development, funded by industry



## Pipeline

**Build**  
6,500 mi<sup>1</sup>

> \$75bn of pipeline infrastructure, funded by industry



## LNG Terminals

**Export**  
Capacity +40 Bcfd

> \$245bn of LNG facilities, funded by industry

- The U.S. natural gas industry stands ready to execute on this project today
- We have the resources, labor, capital, materials, and funding
- We need the green light: a prioritization of pipeline and LNG infrastructure

1. Based on capacity of the 42-inch pipe, a total of ~20 pipelines are needed, and the length of each pipe varies from 250-350 mi based on map distance estimation. The summation of all pipeline length is 6,500 mi. Point forward the total capex investment required is \$800+bn by 2030. Source: Government of Canada (Canadian LNG project), EPI, Cleveland State University Shale investment in Ohio, ICF North America Midstream Infrastructure through 2035, team analysis, economy policy institute.



# Step I: Develop the Resource

Deploying Just 50 Rigs Above Today's Levels



## Remaining Inventory @ \$3.75/mcf<sup>1</sup>

Basin	Region	Remaining Wells	BCF/Well	Total Resource (TCF)
Appalachia	Northeast	90,000	14.4	1,275
Haynesville	Gulf Coast	25,000	12.8	300
Eagle Ford (dry gas)	Gulf Coast	20,000	8.3	168
Woodford (dry gas)	Gulf Coast	8,000	10.9	82
<b>Total Gas Shales</b>		<b>140,000</b>	<b>13.0</b>	<b>1,800+</b>
Permian Associated Gas	Gulf Coast	50,000+	4.0	200+

## Resource Summary

- 1,800 TCF from 4 basins to be developed from 140,000 wells
- All wells are economic at \$3.75/mcf or below, in line with historical/current prices
  - Including LNG costs, U.S. natural gas is a cheap alternative to carbon intensive coal

## Development Needed

- All basins have been developed for 15 years with 40,000 wells already drilled
  - 120 active rigs as of March '22
  - 50+ Rig Additions Needed for LNG Ramp

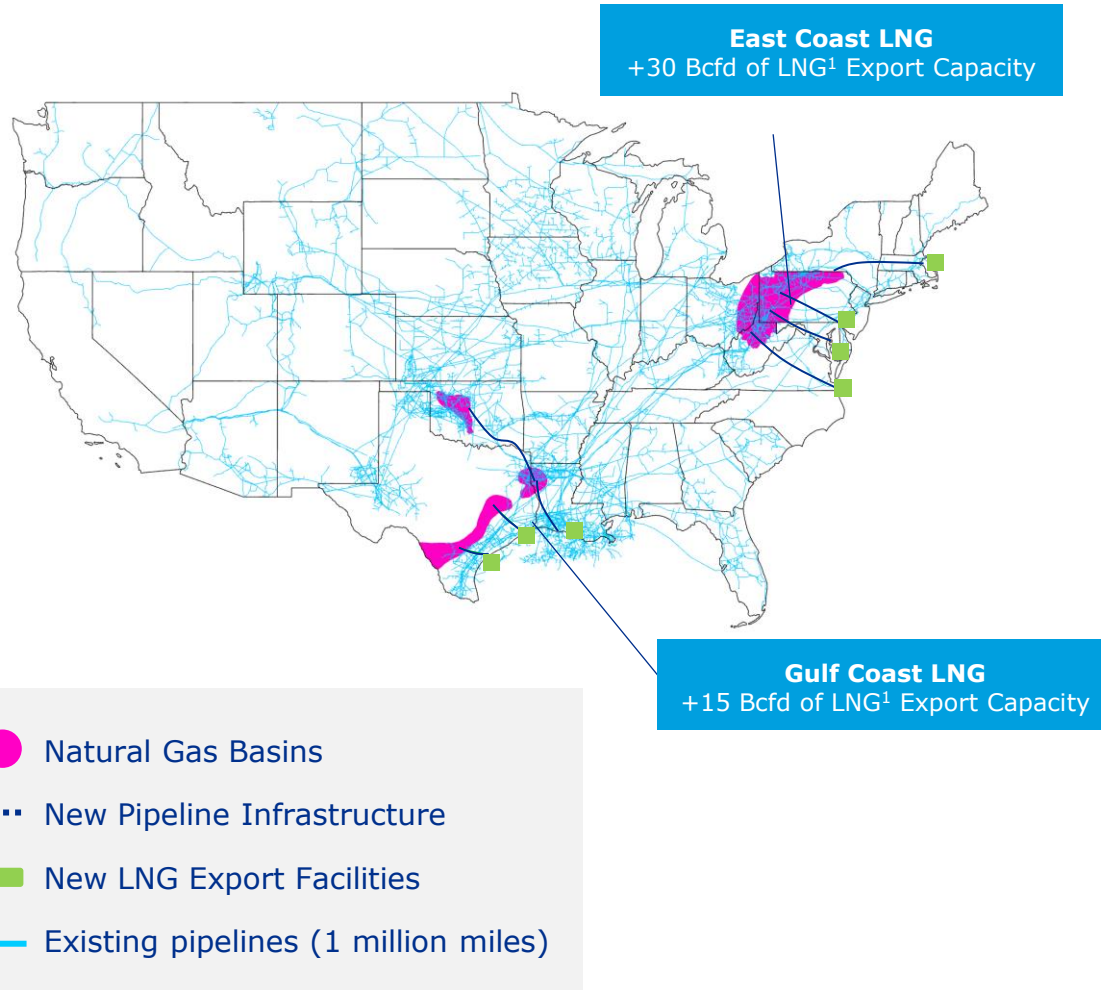
## Production Ramp<sup>2</sup>

- Current rates of 4 gas plays: 45 Bcfd
- 2030 Rate: 90 Bcfd
  - Y/Y Growth rates of +5.5 Bcfd are in line with historical norms
  - 2022-2030 growth of +45 Bcfd is split roughly 60/40 Appalachia vs Gulf Coast
- 2040 Rate: 100 Bcfd
  - Appalachia constitutes 70% of total production, growing from 33 Bcfd to 70 Bcfd
- Able to hold these rates flat for 30 years to incentivize long term LNG buildout
- Permian associated gas would be additive (+8 Bcfd by 2030)

1. BCF/well is calculated from historical performance from existing wells in each basin, and remaining wells counts is estimated by well spacing and available acres in each basin. 2. Internal study assumes rig activity will ramp up to ~170 / year and stay relatively flat until 2030.



# Step II: Connect Supply to Demand with Infrastructure



## Pipelines

Need multiple, large diameter pipelines heading to both the East Coast and Gulf Coast

- Appalachia alone has the ability to reduce international emissions by ~750 million metric tons CO<sub>2</sub>/year (approximately 600 million metric tons CO<sub>2</sub>/year attributable to Pennsylvania)
  - 3x Germany's Energiewende project
- Pennsylvania pipelines are operating at capacity due to opposition and cancellation of proposed midstream projects
- Previously cancelled pipelines should be reconsidered, completed and deployed

## LNG Facilities

Both the East Coast and Gulf Coast need to be major LNG export hubs

- East Coast
  - Current LNG Export Capacity<sup>2</sup>: 1 Bcfd
  - 2030 Needs: 31 Bcfd (+30 Bcfd)
  - Global CO<sub>2</sub> Reductions From East Coast LNG<sup>3</sup>: -775 Million Metric Tons CO<sub>2</sub>/Year
- Gulf Coast
  - Current LNG Export Capacity<sup>2</sup>: 12 Bcfd
  - 2030 Needs: 27 Bcfd (+15 Bcfd)
  - Global CO<sub>2</sub> Reductions From Gulf Coast LNG<sup>3</sup>: -725 Million Metric Tons CO<sub>2</sub>/Year

1. Internal analysis assume a 140-170 U.S rigs /year drill schedule // Based on internal study, 70% of total U.S. resource comes from near East coast and 30% from near the gulf coast, and the future additional capacity is allocated using a similar ratio. 2. Based on Jan / Feb 2022 data. 3. Electricity generated from LNG can be calculated using gas production multiplied by 1bcf = 136.3GWh conversion factor, CO<sub>2</sub> emission saving from coal-to-LNG is 0.56 MtCO<sub>2</sub>e/TWh, and total emission saving can be derived from multiplying electricity generated by CO<sub>2</sub> saving factor; includes emissions reduction due to LNG Export Facilities under construction.

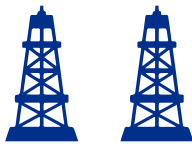


# Supplying America First

Keeping American Natural Gas Prices the Lowest in the World

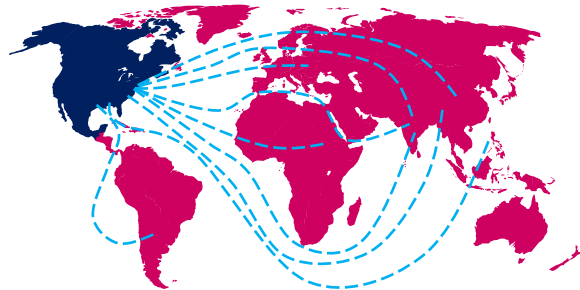
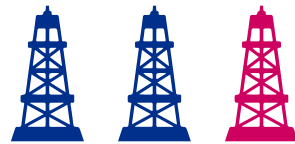
## Current

120 Rigs Serving American Consumers and Existing LNG



## Unleashed

170 Rigs Serving American Consumers and Unleashed LNG



## Meeting U.S. Demand *First*

Projections in Unleashed U.S. LNG scenario include maintaining enough natural gas supply within the U.S. to meet current *and expected future* natural gas demand within the U.S.

**Lowest Cost Production + Necessary Infrastructure**

=

**U.S. Consumers Continue to Receive Lowest Price in the World**

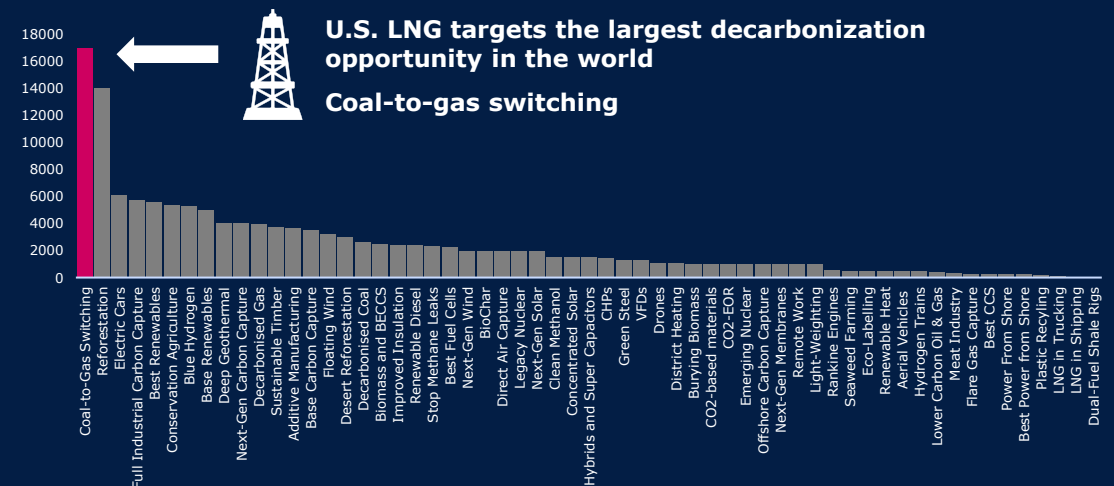


## Expanding U.S. LNG Will Not Increase Costs to U.S. Consumers, It Will *Decrease* Them

- The **global undersupply of energy** is the driver for increased energy costs, and a leading contributor to global inflation. *All* prices, not just energy, will increase as long as that shortage remains.
- Addressing the problem head-on through bridging the global energy supply/demand gap is the lowest-cost option.
- **Combating inflation facilitates renewables penetration given their hyper-sensitivity.**
- Not only is unleashing U.S. LNG the lowest-cost option to address inflation, it also achieves similar emissions reductions as Build Back Better with no taxpayer dollars.

**In a world where we are valuing emissions, targeting the largest + cheapest CO2 reduction options should be the priority to achieve our goals in the least inflationary manner – and coal-to-gas switching leads the pack.**

CO2 Reduction Opportunities (Million Metric Tons CO2/year)



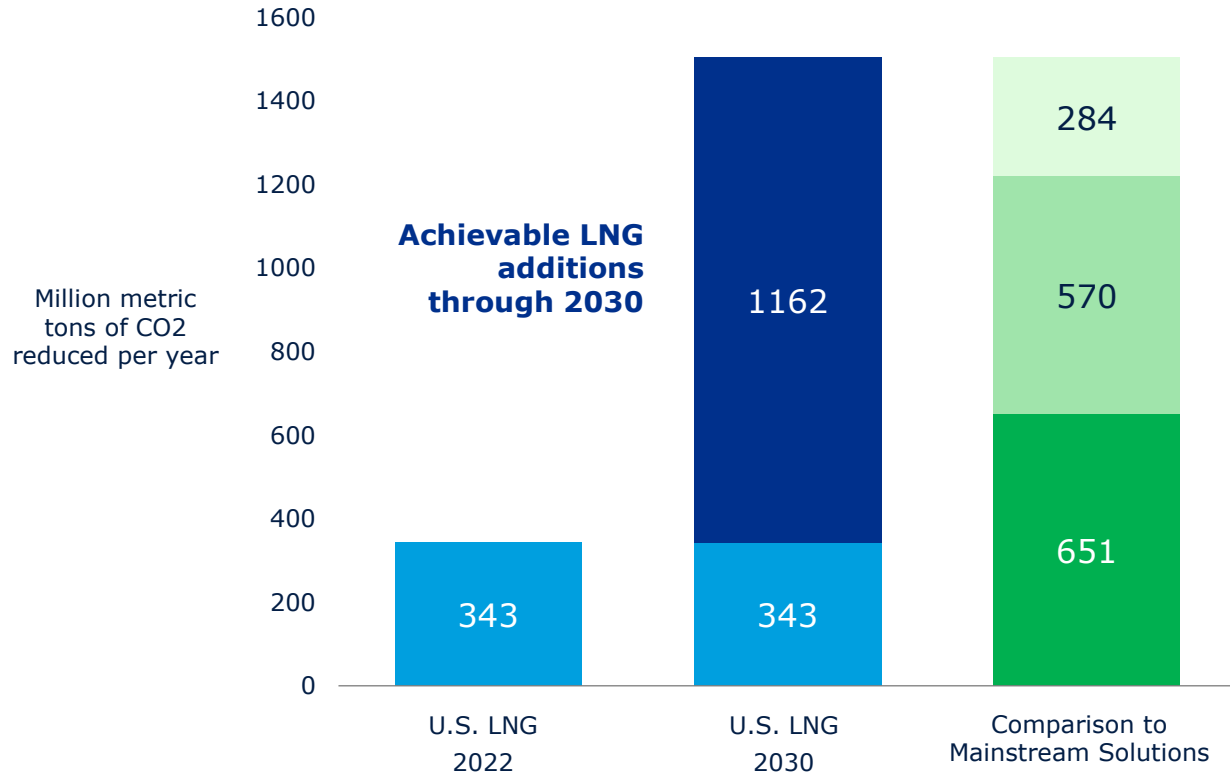


# U.S. LNG By 2030

## Emissions Reduction Potential Dwarfs All Mainstream Solutions

### Comparison of CO2 Reduction Impacts

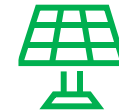
(Million metric tons of CO2 reduced per year)



**An unleashed U.S. LNG scenario would have the same CO2 reduction benefit as all of these combined by 2030:**



Electrifying 100% of the U.S. passenger vehicle fleet<sup>1</sup>



Powering every home in America with Rooftop Solar and battery packs<sup>2</sup>



Adding 54,000 windmills, doubling U.S. wind capacity<sup>3</sup>

**And this is being done with zero taxpayer dollars**

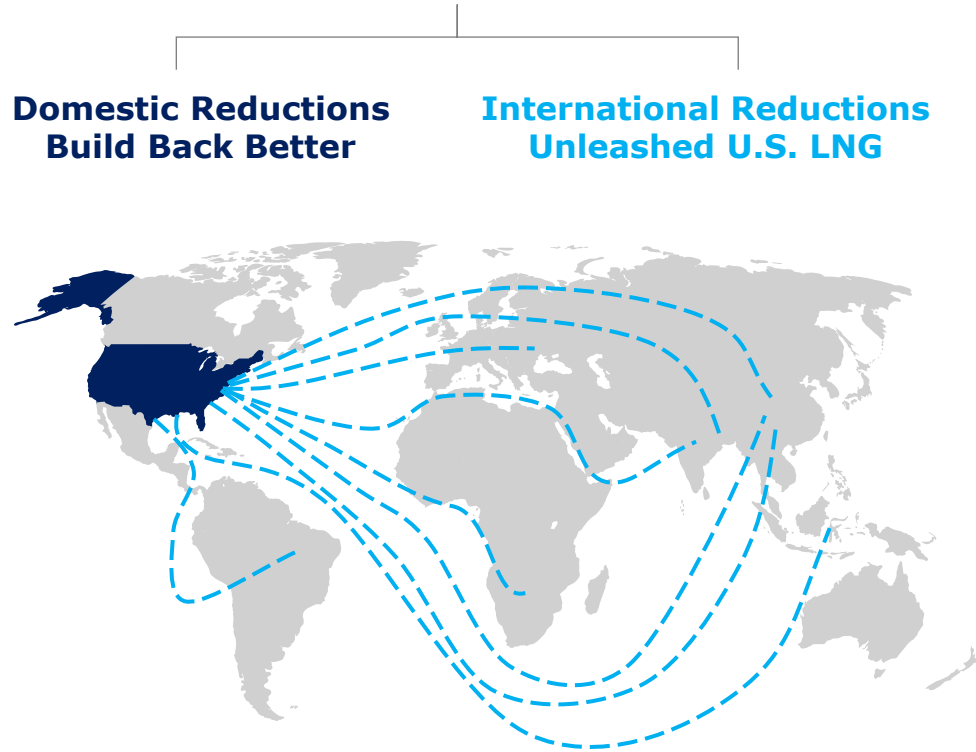
1. Estimated 194 million light duty vehicles in the U.S. in 2020 with 9,780km average mileage, assuming ICE vehicles have a life-cycle GHG emissions of 255g CO2 eq./km while EVs have 105g CO2 eq./km with the 2021 U.S. power mix; 2. Value reported in EIA's Table 11.2: 2020 Residential Share of Electric Power Sector CO2 Emissions; 3. Average windmill capacity of 2.75MW in 2020, with an average capacity factor of 42%, assumed to replace coal with a carbon intensity factor of 1.19 MtCO2/TWh in the U.S.; Source: EIA; EPA; U.S. Bureau of Transportation Statistics; ICCT; U.S. Geological Survey; EQT analysis



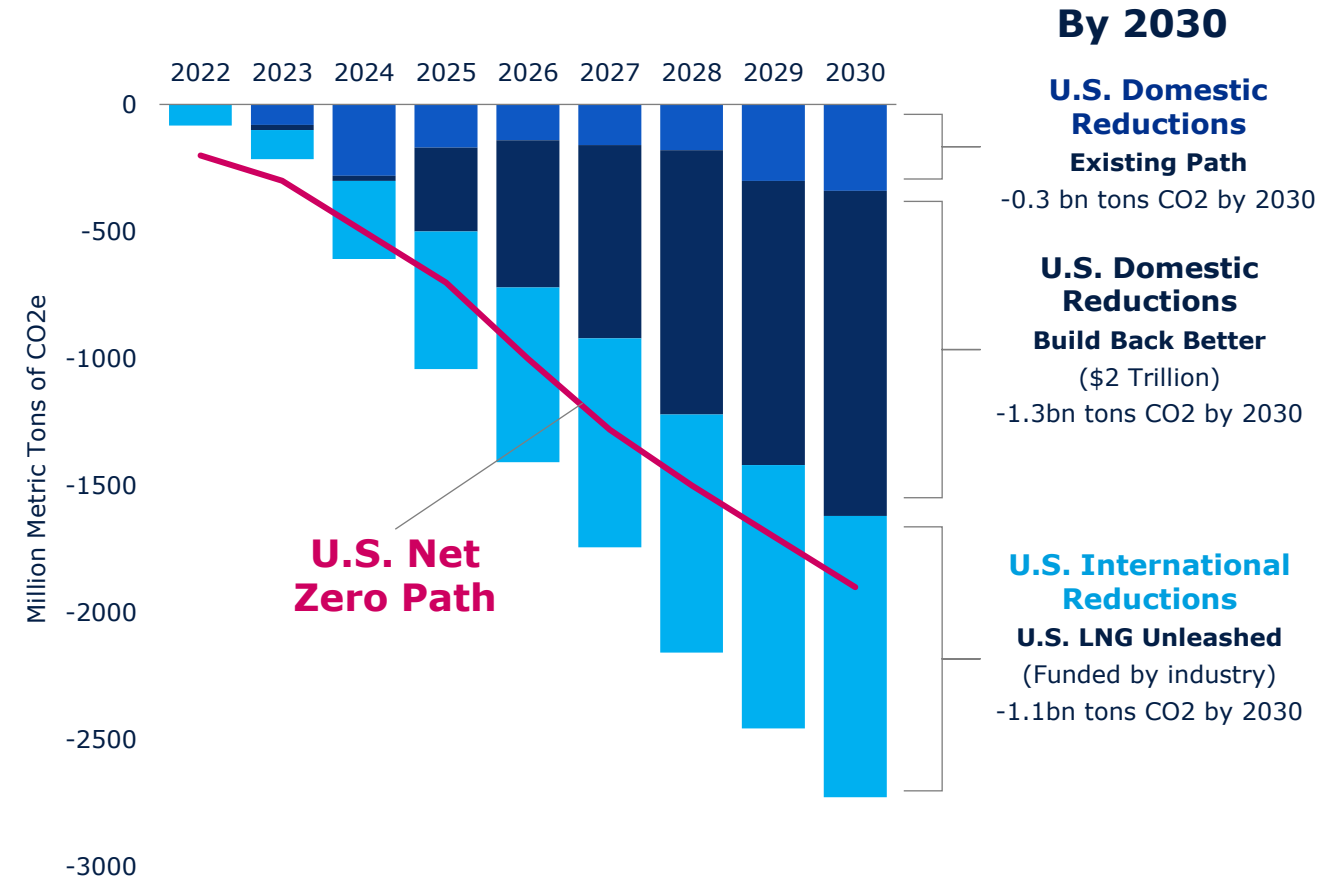
# Adding Unleashed U.S. LNG to Build Back Better

U.S. Could Be Ahead of Our Net Zero Path

## Combined Solutions Put the U.S. Impact on Global Emissions Ahead of the Net Zero Path



## Combining Domestic and International Climate Change Policies





# **Unleashing U.S. LNG: An Opportunity to Reduce Global Methane Emissions**

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# The Role of Industry

Prioritizing a Demonstrated Commitment to Emissions Reduction



**Commit to Rapid Methane Reduction**



**Commit to Modern Methane Detection and Monitoring**



**Commit to Net Zero Operations**



Targeting 65% reduction in methane intensity by 2025 (versus 2018 levels)



*By participating with global leaders in the Oil and Gas Methane Partnership, we are committing to fostering a methane detection monitoring and reporting regime that moves beyond desktop emissions to one that harnesses the latest monitoring technologies.*



Committed to net zero scope 1 and 2 up to the point of combustion for natural gas supplies supporting new LNG projects



# Industry's Progress on Methane Since 1990

Production has Doubled, Yet Methane Emissions have Decreased Due to Stronger Environmental Standards

Despite Natural Gas Production Nearly **Doubling** in the U.S....

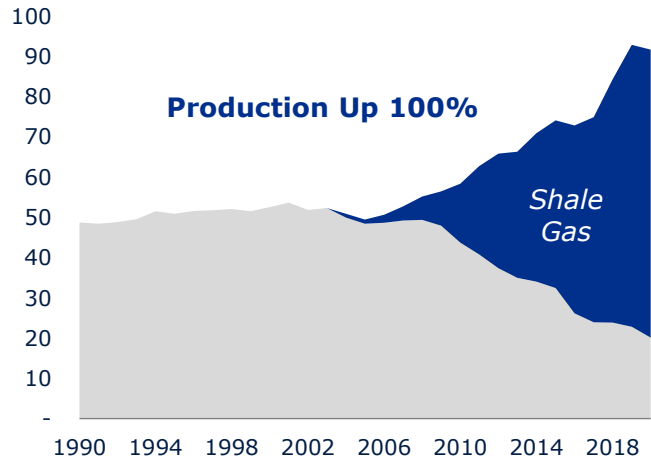
Absolute Methane Emissions in the Natural Gas Industry have **Decreased**

**The Reason:** Higher Environmental Standards in the Modern Shale Era

## U.S. Natural Gas Production

1990-2020

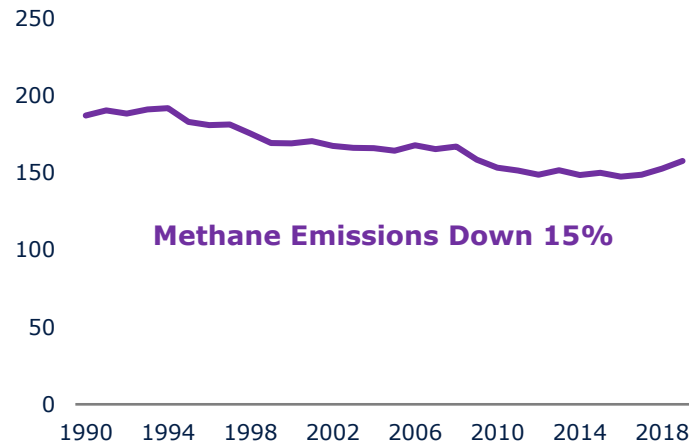
Natural Gas Bcfd



## Natural Gas Industry Methane Emissions

1990-2019

Methane emissions in million tons of CO2 equivalent

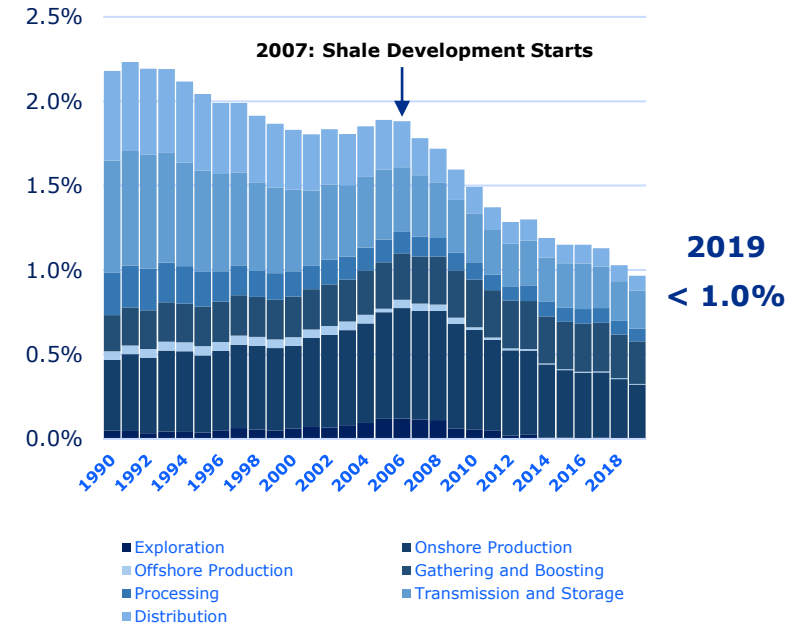


Methane emission figures from the EPA include 100% of upstream, midstream, and downstream

## Natural Gas Industry Methane Leak %

1990-2019

Methane Leak %



1. Methane emissions were obtained from EPA's inventory of U.S. GHG; conversion factor used: 1bcf of fugitive methane = 19,263 tons of methane; Source: EPA for Emission %, EIA Shale production

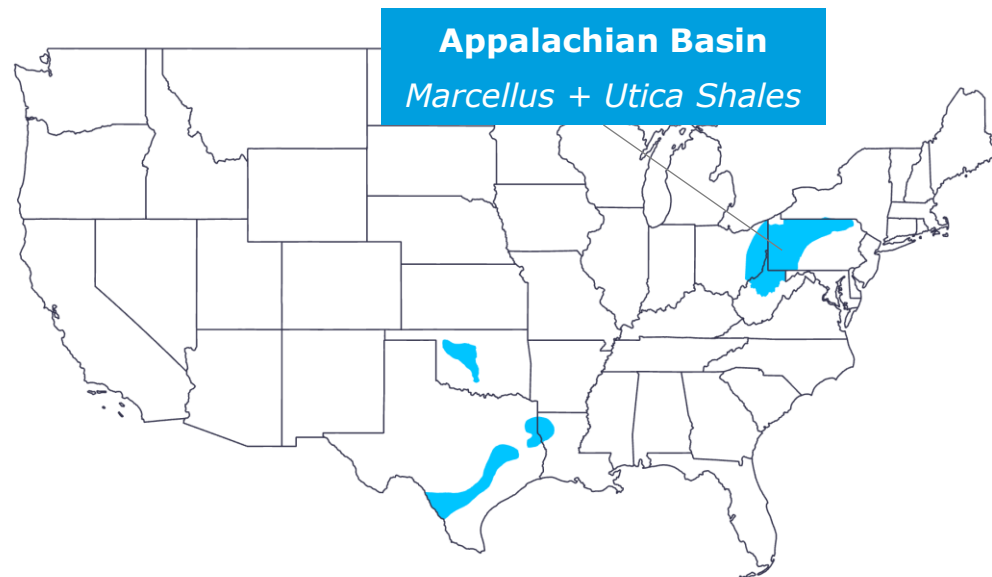


# Sourcing Future Production From The Best Performing Basins

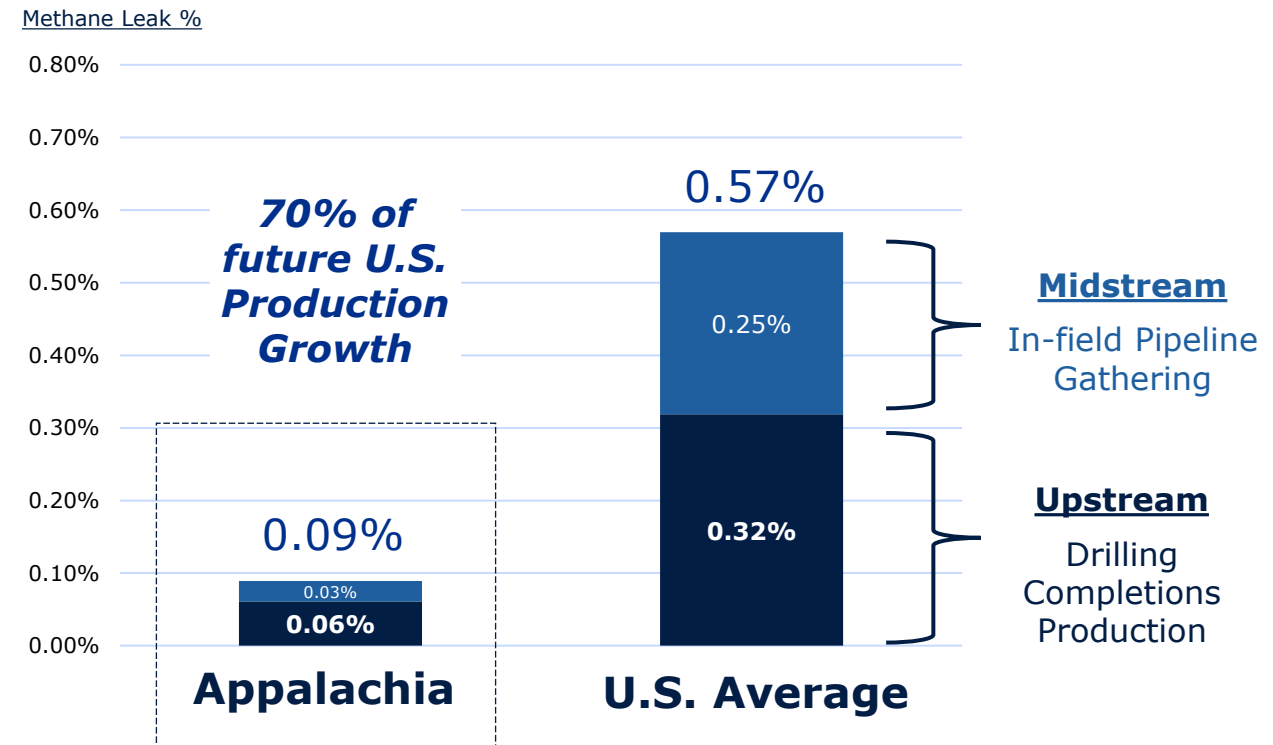
The Appalachian Basin Methane Leak Rates are 85% Lower than the U.S. Average

**The Appalachian Basin is the largest natural gas field in the world and has the lowest methane leak rates in the United States**

**In a ramped U.S. LNG program, ~70% of production growth would come from Appalachia, the leading basin for environmental standards**



## Upstream + Gathering Methane Leak Rates<sup>1</sup>



1. Methane emissions by basin were obtained from EPA's inventory of U.S. GHG, and natural gas production by basin from Enverus; conversion factor used: 1bcf of fugitive methane = 19,263 tons of methane; Source: EPA for emissions, Enverus for production



# Additional Methane Emissions Reduction Through Coal-Replacement

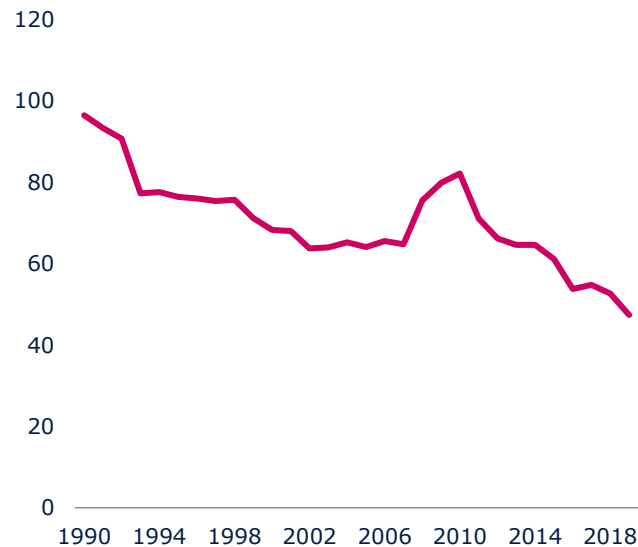
## Coal-to-Gas Switching in the United States Led to a 50% Decline in Coal-Sourced Methane Emissions

- The coal industry emits more methane than the natural gas industry globally<sup>1</sup>
- China's methane emissions from 2005-2016 increased roughly the equivalent of adding a second Europe to the world
- Replacement of coal with natural gas has been the primary contributor to methane emissions reduction in the U.S.

### Coal Sector Methane Emissions

1990-2019

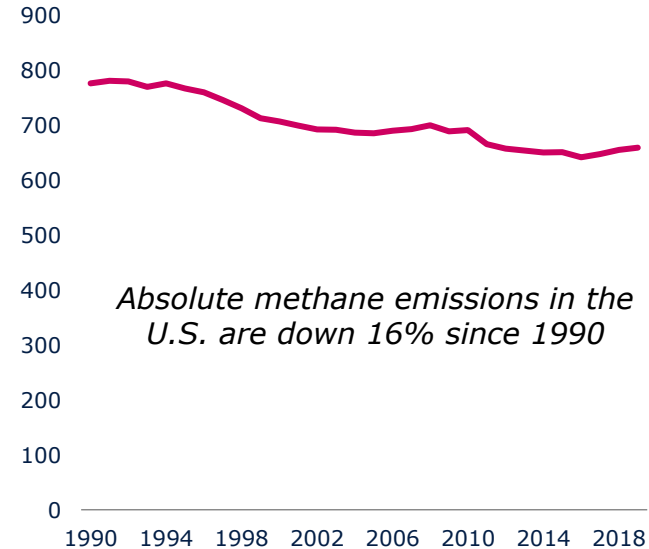
Million Tons of Co2e per year



### Total U.S. Methane Emissions

1990-2019

Million Tons of Co2e per year



#### Coal Methane Leak Rates

(energy equivalent to gas)

**1.3%**

#### U.S. Natural Gas Fully-Distributed Methane Leak Rate

**< 1.0%**

*and decreasing rapidly*

#### **What does this mean?**

Coal-to-gas switching can lead to absolute methane reductions in addition to unmatched CO2 reductions

1. IEA Global Methane Tracker 2022

Source: U.S. methane: EPA GHG inventory 2019 (fully distributed includes entirety of natural gas supply chain: upstream, midstream, and downstream end use), World - IEA, Thunder Said Energy





# Unleashing U.S. LNG: The Blockades

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# The Only Blockade to Unlocking the Largest Green Initiative

A Misguided Opposition to Infrastructure



## Pillars for U.S. LNG Expansion

Natural Gas Production



The U.S. natural gas industry is ready to ramp production now, but we cannot increase production without associated pipelines to LNG export facilities on the coasts because existing pipelines are largely full.

Infrastructure



Over the last 5 years, pipelines and LNG facilities have been cancelled or considerably delayed.

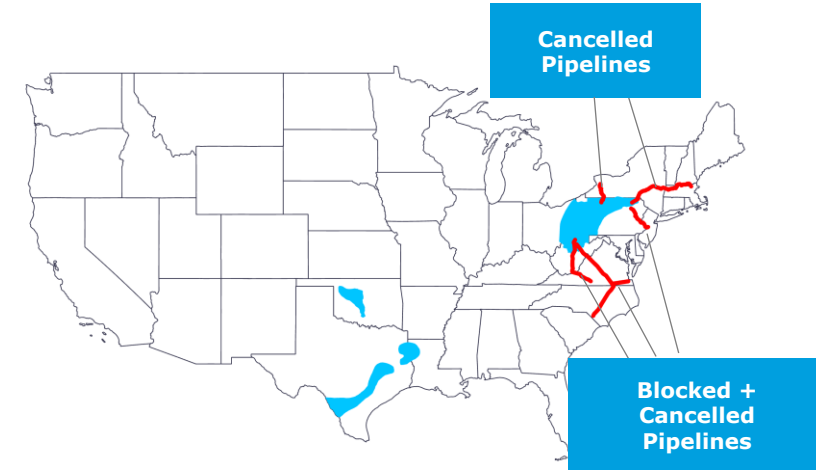


Pipeline and LNG facility buildouts are currently being constructed at a pace 1/4<sup>th</sup> that of the level at which industry can provide the natural gas.

**Cancellation/Delays of natural gas infrastructure has resulted in hundreds of millions of metric tons of unnecessary CO2 emissions at a time when rapid action is needed**, while also contributing to elevated regional and global inflation.

## Example:

### Locations of Blocked / Cancelled Natural Gas Pipelines



Project	Status	Gas Volumes (Bcfd)
Constitution	Cancelled	0.7
Penn East	Cancelled	1.1
Northern Access	Opposed	0.5
MVP	Opposed	2.0
Atlantic Coast	Cancelled	1.5
Northeast Direct	Cancelled	1.2
<b>Total</b>		<b>7.0 Bcfd</b>

# While the World is Recognizing the Role of Natural Gas



European Commission - Press release



## EU Taxonomy: Commission presents Complementary Climate Delegated Act to accelerate decarbonisation

Brussels, 2 February 2022

The European Commission has today presented a [Taxonomy Complementary Climate Delegated Act](#) on climate change mitigation and adaptation covering certain gas and nuclear activities. The College of Commissioners reached a political agreement on the text, which will be formally adopted once translations are available in all EU languages.

A great deal of private investment is needed for the EU to become climate neutral by 2050. The [EU Taxonomy](#) aims to guide private investment to activities that are needed to achieve climate neutrality. **The Taxonomy classification does not determine whether a certain technology will or will not be part of Member State energy mixes. The objective is to step up the transition, by drawing on all possible solutions to help us reach our climate goals. Taking account of scientific advice and current technological progress, the Commission considers that there is a role for private investment in gas and nuclear activities in the transition. The gas and nuclear activities selected are in line with the EU's climate and environmental objectives and will allow us to accelerate the shift from more polluting activities, such as coal generation, towards a climate-neutral future, mostly based on renewable energy sources.**

## Europe's Embrace Of Natural Gas Is A Boon For American Workers

## Germany Goes Ahead With First LNG Terminal to Cut Dependence on Russian Gas

## India's road to clean energy goes via natural gas

## Natural Gas Helps Fuel a Healthier China

# Stale Political Rhetoric is Driving Pipeline Opposition in the U.S.



## U.S. Senators Want To Put Brakes On LNG Exports To Curb Domestic Energy Bills

## US pipelines blocked by the courts

Decisions this week affecting oil and gas pipelines have highlighted environmental campaigners' increased success in stopping new investment

## U.S. Carbon Emissions Are Declining, But Opposition To Clean-Burning Natural Gas Is Rising

## Sustained Opposition Derails Three Major Oil and Gas Pipelines

Grassroots resistance shuts down Atlantic Coast, Dakota Access, and Keystone XL

United States Senate

WASHINGTON, DC 20510

February 2, 2022

The Honorable Jennifer Granholm  
Secretary, U.S. Department of Energy  
1000 Independence Ave., S.W.  
Washington, D.C. 20585

Dear Secretary Granholm:

As families across the country continue to face steep residential energy and heating costs, we urge you to take swift action to limit U.S. natural gas exports and examine their impact on domestic energy prices.

While we strongly support the administration's commitment to advancing the deployment of renewable energy, we understand that nearly half of all U.S. homes currently rely on natural gas for heat. In its 2021-2022 Winter Fuels Outlook, the U.S. Energy Information Administration (EIA) estimated that energy costs for natural gas-fueled homes will increase by 30 percent over the course of this winter. Homes in colder regions, such as New England and the Midwest, will see even larger increases in their heating bills.

Despite the heavy burden rising natural gas prices has placed on American families, the U.S. is exporting record levels of natural gas to other countries, a trend that is only expected to continue. Reports indicate that in December U.S. liquefied natural gas (LNG) exports topped 7.7 million tons, for the first time making the U.S. the world's leading LNG exporter. And on December 9, the EIA issued a report indicating that the U.S. is on track to have the largest LNG export capacity in the world by the end of 2022. With this increased capacity, exports will only continue to grow in the coming years.

At the same time, LNG exports are decreasing the surplus for the U.S. market, as the EIA predicts that this year natural gas inventories will reach a full 159 billion cubic feet below its previous five-year average. Projections of exponentially increased U.S. exports will cause real harm to American families' ability to pay their home energy bills.

When establishing U.S. LNG export policies, we understand there are geopolitical factors and global and regional markets to consider. This includes recent calls for U.S. exporters to provide additional volumes of natural gas to Europe amid increased threats of a Russian supply disruption. However, the Administration must also consider the potential increase in cost to American families because of higher export volumes.

Therefore, we urge the Department to conduct a review of LNG exports and their impact on domestic prices and the public interest, and develop a plan to ensure natural gas remains affordable for American households. Until such a plan is completed, the Department should



# Conclusion

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# Unleashing U.S. LNG: The Largest Green Initiative on the Planet

Equal to the Combined Impact of Every Domestic Mainstream Green Solution

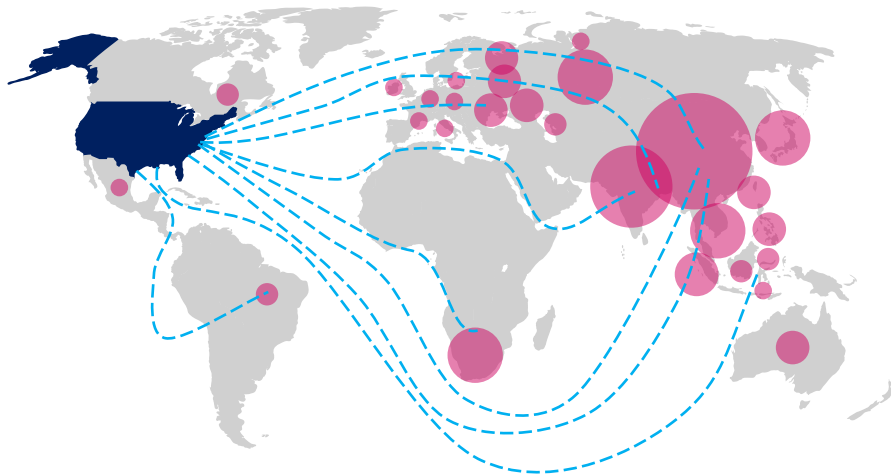
## The Demand

- There is currently 175 Bcfd of coal-to-gas switching demand in the world

## The Plan

- Quadruple U.S. LNG capacity to 55 Bcfd<sup>1</sup> by 2030 to replace international coal at an unprecedented pace
- Fully funded by the natural gas industry. Ready to deploy today.

## Targeting International Coal Emissions with U.S. LNG



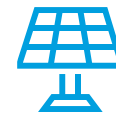
## The Result

- By 2030, an unleashed U.S. LNG scenario would reduce international CO2 emissions by an incremental -1.1 billion metric tons<sup>2</sup> per year
- U.S. citizens will be paid for this initiative (tax revenues and an additional \$75Bn in royalties<sup>3</sup>), as opposed to paying for it

## The emissions reduction impact of an unleashed U.S. LNG scenario is equal to:



Electrifying every U.S. passenger vehicle



Powering every home in America with rooftop solar and backup battery packs



Adding 54,000 industrial scale windmills, doubling U.S. wind capacity

**Combined**

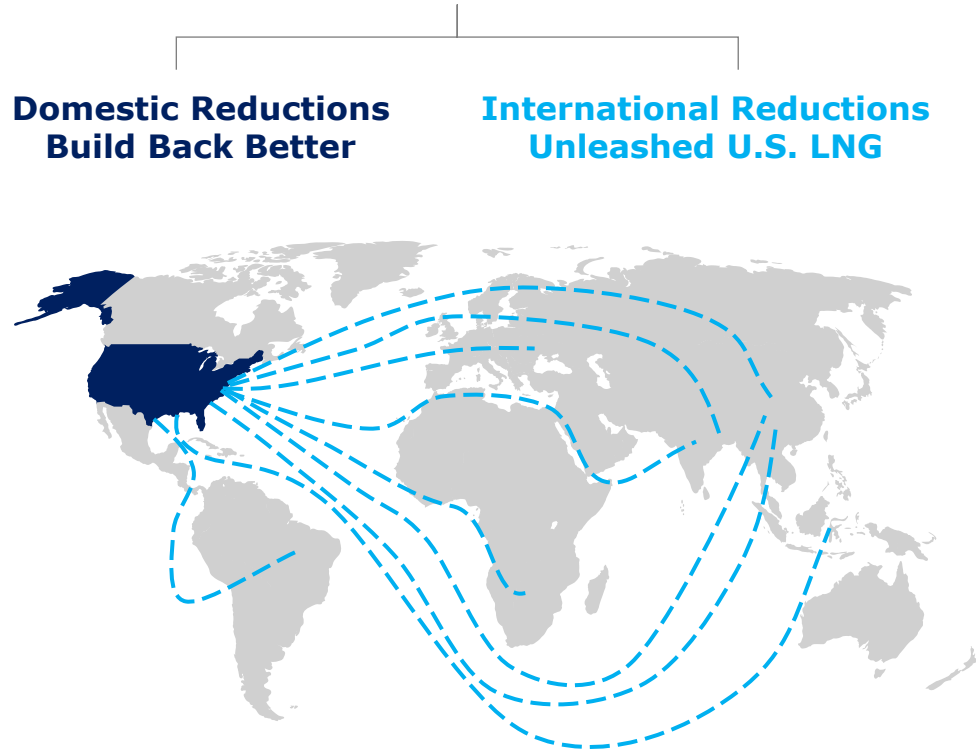
1. Including current capacity, capacity under construction, and future new capacity 2. Assuming 3 bcf under construction, and 40 bcf additional capacity by 2030 3. Incremental cumulative royalties above 2021 levels from 2022-2030 assuming 20% of revenue @ \$3.75 / mcf



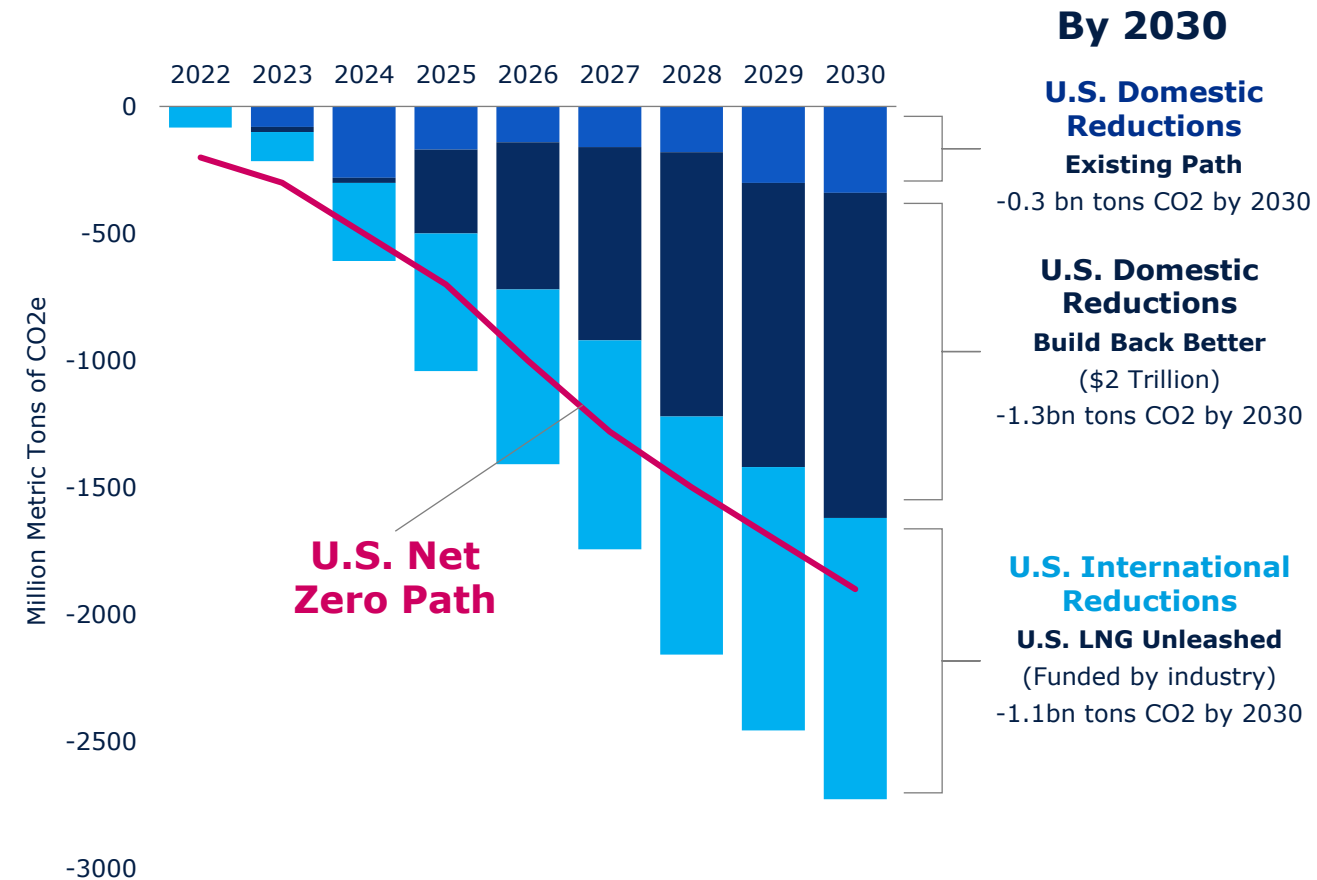
# Adding Unleashed U.S. LNG to Build Back Better

U.S. Could Be Ahead of Our Net Zero Path

## Combined Solutions Put the U.S. Impact on Global Emissions Ahead of the Net Zero Path



## Combining Domestic and International Climate Change Policies





# A Call to Action

What You Can Do to Help Unleash U.S. LNG



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## Industry

Continue executing on commitments to accelerate emissions reduction

## Public

Make your voice heard – it is the first step to unlocking this opportunity

## Regulators

Demonstrate clear support by prioritizing LNG and pipeline infrastructure

## Leader

By unleashing U.S. LNG, the U.S. can become a leader on the world stage in the battle against climate change

**Show Your Support  
by Clicking [Here](#)**





**#UnleashUSLNG**