

# GAS AS A KEY TO REGIONAL GROWTH AND STABILITY IN POST-WAR MIDDLE EAST

LESSONS FROM THE U.S.

Mitchell A. Silk and Timothy Fitzgerald
March 14, 2024





### **CONTENTS**

On Day 1 after the last shot is fired, how can the policy-maker achieve the greatest regional impact boosting economic growth, enhancing security and political stability, and protecting the environment.

- Snapshot of the rise of gas in the U.S. achieving energy independence
  - How the U.S. leveraged private capital to build the critical midstream infrastructure to:
    - exploit natural gas reserves
    - improve our economic growth and
    - enhance energy security
- Proven U.S. policy model to achieve all four goals by leveraging private capital to realize growth in energy and infrastructure
- Relevance of U.S. experience to regional growth and stability in the Middle East
- Questions?



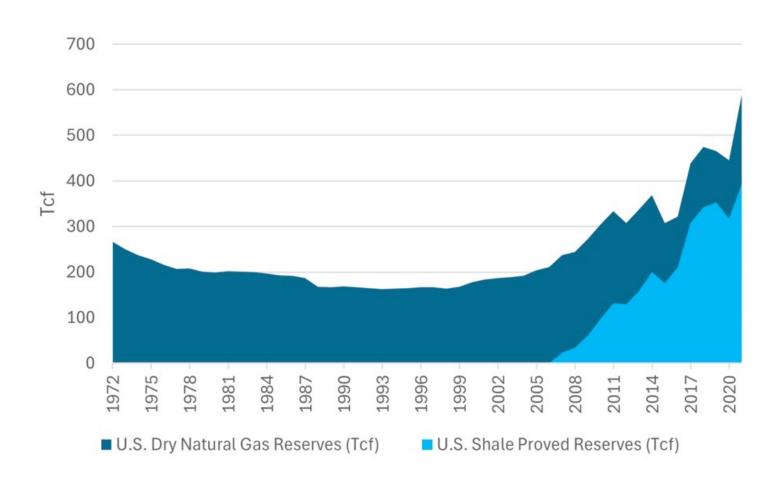
### **RECENT HISTORY OF U.S. NATURAL GAS**

- Shale Revolution
- Market Impact
- Net Exports
- LNG



### **RESERVES**

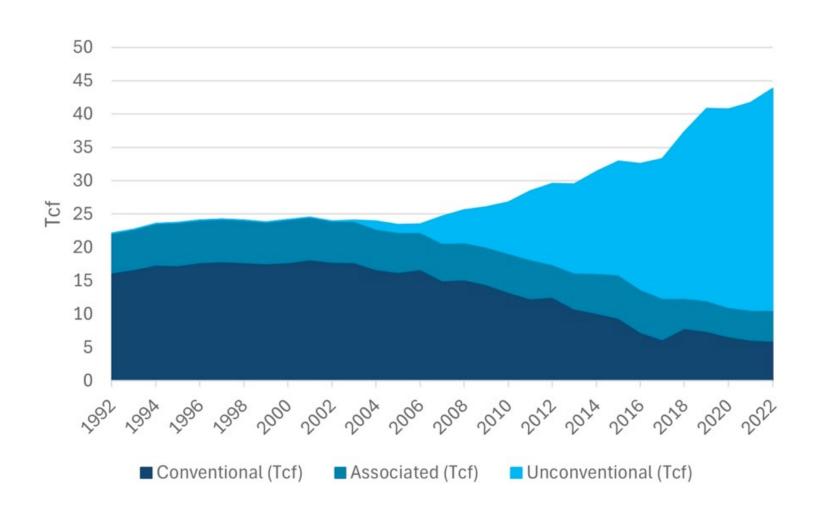
### UNCONVENTIONAL RESOURCES REVERSED DECADES OF DECLINE





### **PRODUCTION**

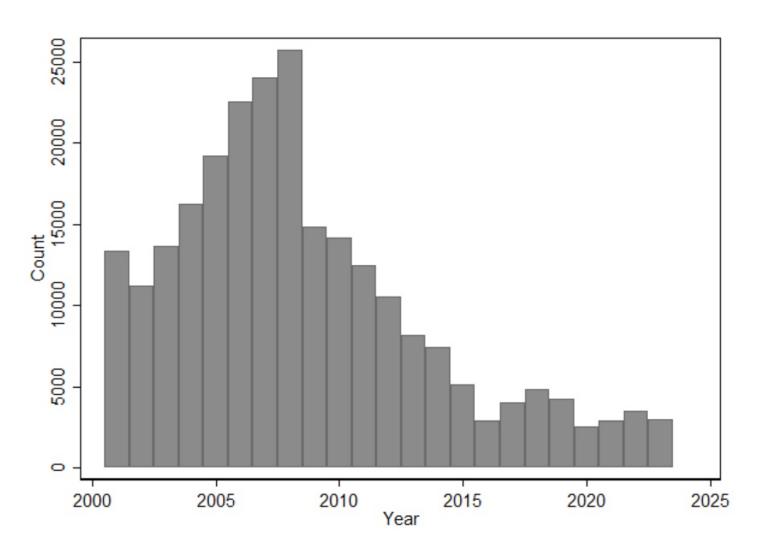
### U.S. GAS PRODUCTION IS UNCONVENTIONAL





### **INVESTMENT**

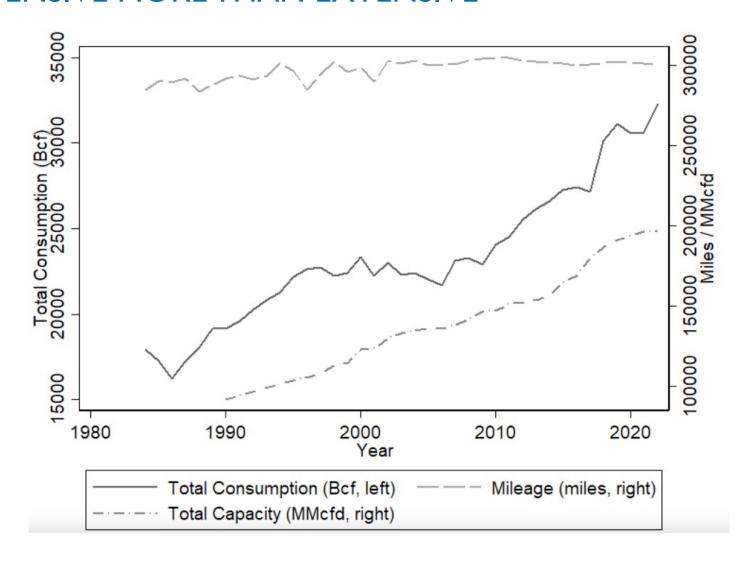
### **NEARLY 250,000 NEW GAS WELLS**





### **INVESTMENT**

### PIPELINES: INTENSIVE MORE THAN EXTENSIVE





### **PRICES**

### SHALE BROUGHT LOWER, MORE STABLE PRICES

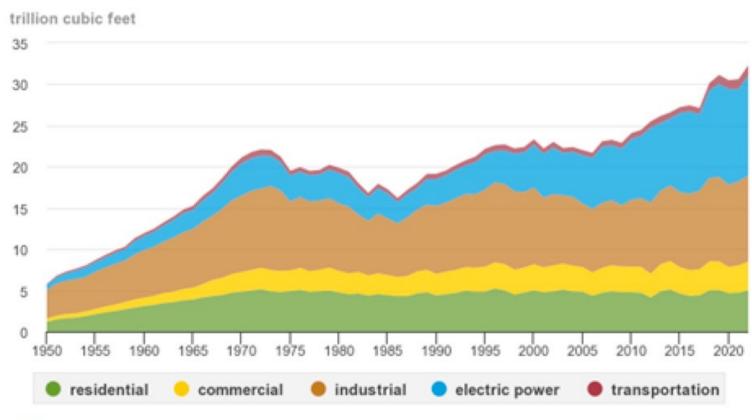
### **Henry Hub Natural Gas Spot Price**





### **GROWING CONSUMPTION**

#### U.S. natural gas consumption by sector, 1950-2022

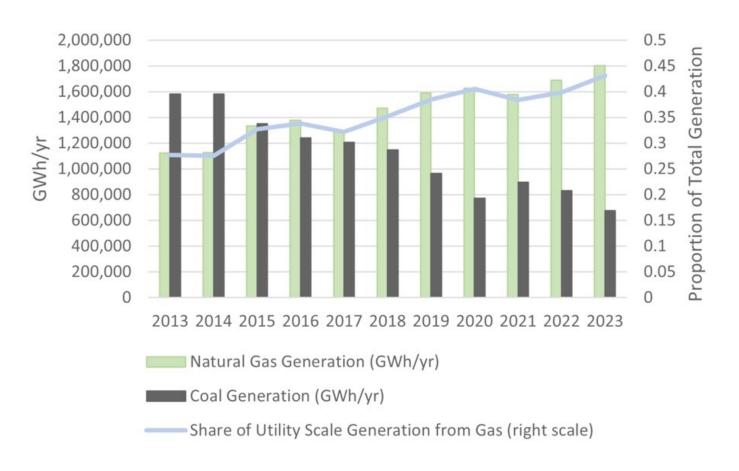






### **CHANGING DEMAND**

### **ELECTRIC POWER**

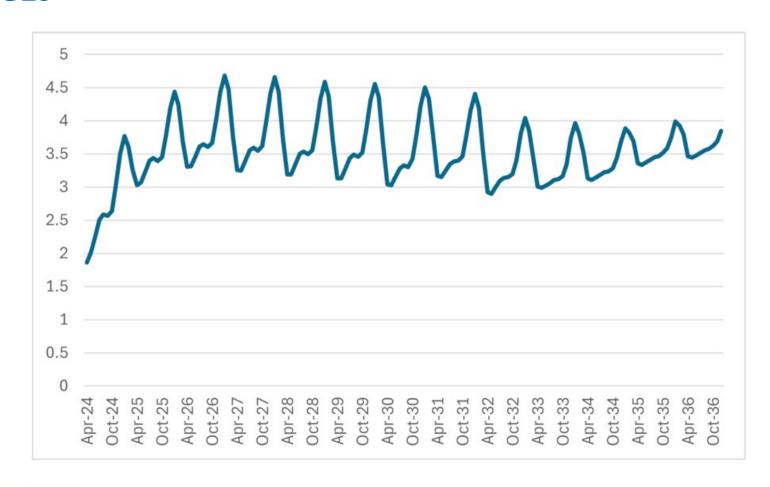


Source: EIA



### **FUTURE FORECAST**

### **FORWARD PRICES**



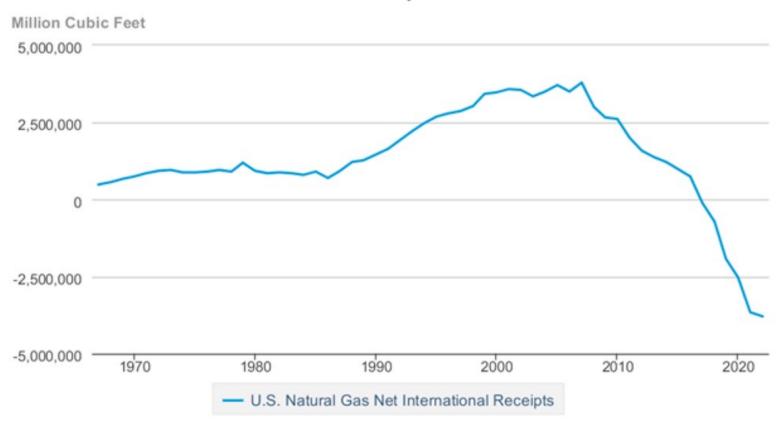
Source: CME



### **NET IMPORTS TIP NEGATIVE**

### **NET EXPORTER OF NATURAL GAS**

#### U.S. Natural Gas Net International Receipts





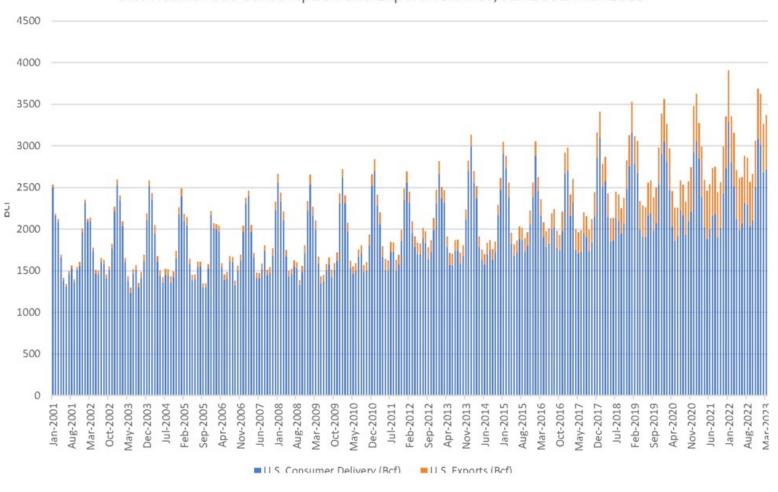
Data source: U.S. Energy Information Administration



### **EXPORTS V. CONSUMPTION**

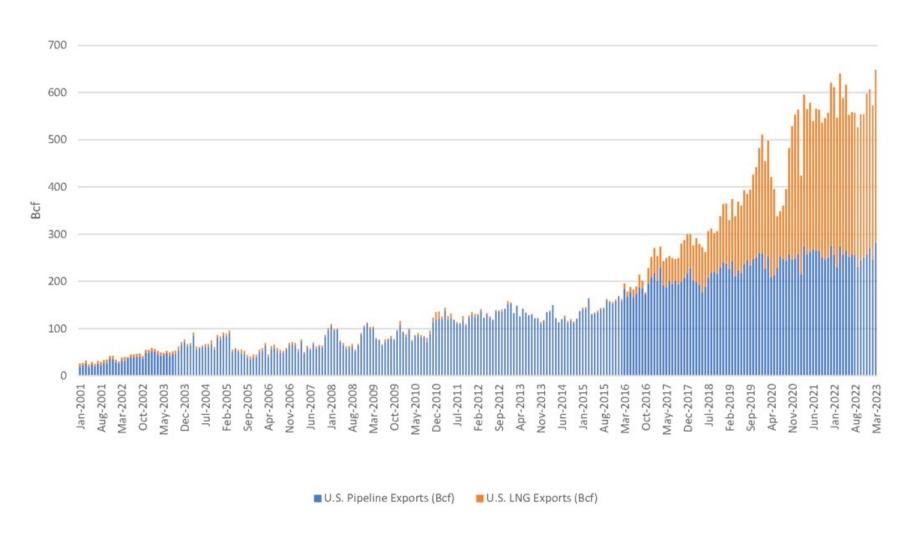
### SPITING OURSELVES TO HELP NEIGHBORS?







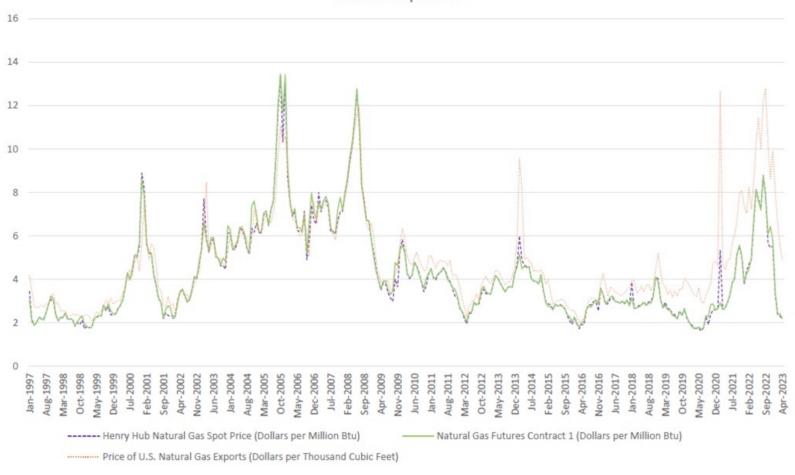
### **PIPELINE V. LNG EXPORTS**





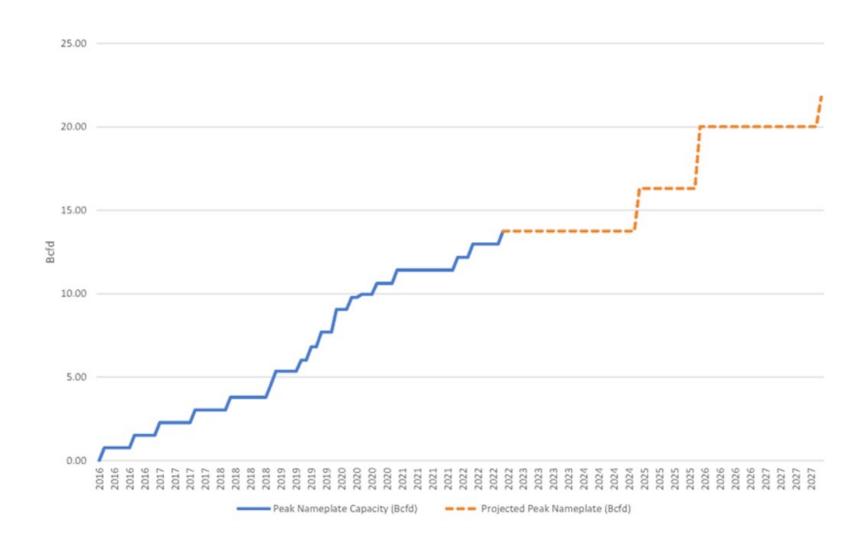
### **PRICE IMPACTS**

U.S. Spot, Export, and Near Month Future Natural Gas Prices, Jan 1997-Apr 2023





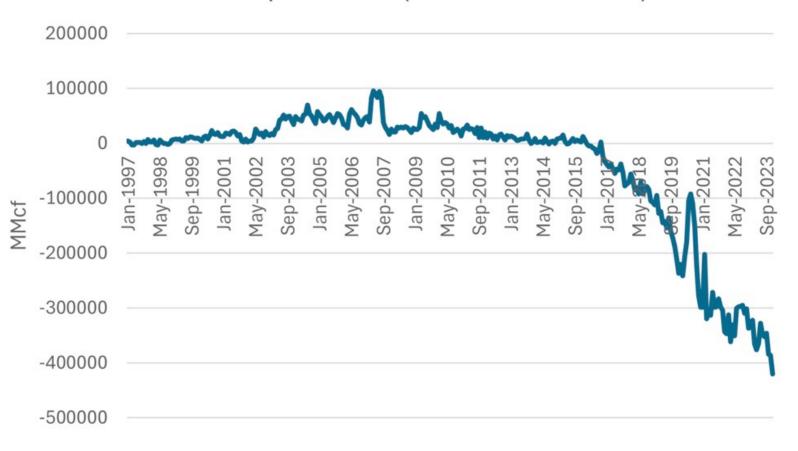
### **U.S. LNG EXPORT CAPACITY**





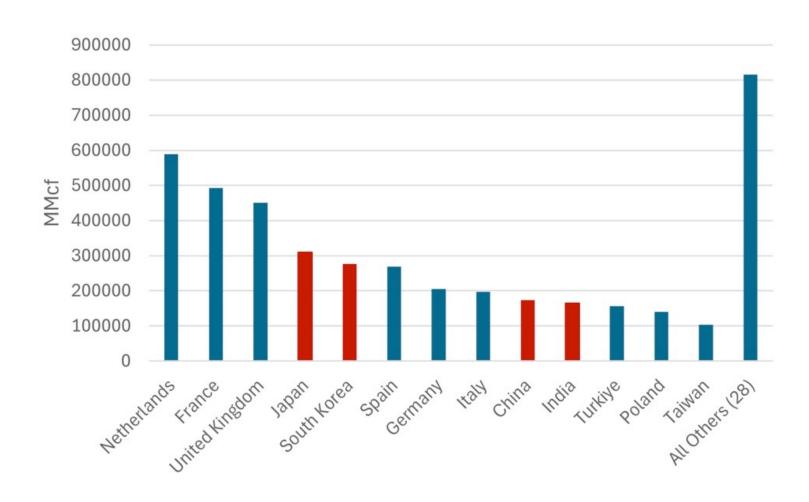
### **U.S. LNG NET IMPORTS**

U.S. Net Imports LNG (Million Cubic Feet)



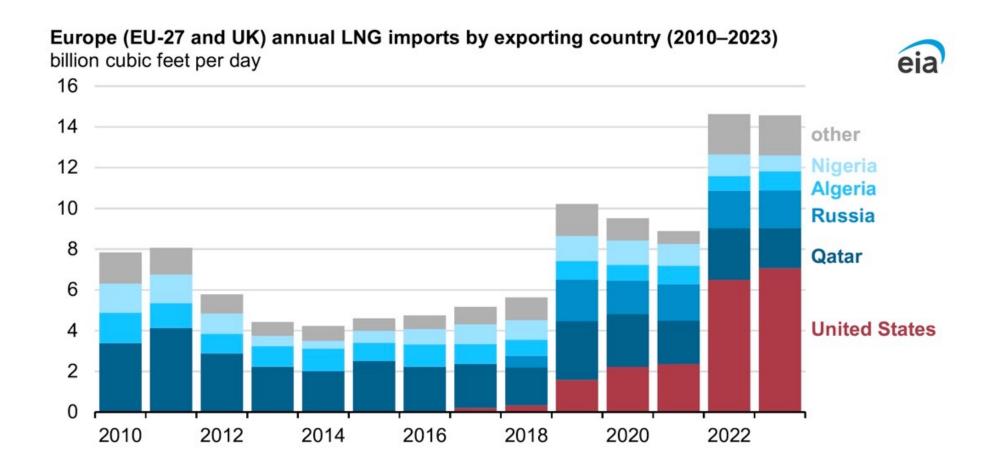


### **EXPORT PARTNERS**





### **PARTNERS**





### **PROVEN POLICY MODEL**

LEVERAGING PRIVATE CAPITAL TO ACHIEVE GROWTH AND STABILITY

- Policy Context
- Bridging the Funding Gap
- Framework Approach
- Regional Application and Successes



### **POLICY CONTEXT: GROWTH**

### BRIDGE GLOBAL INFRASTRUCTURE GAP

2016-2040 Forecast

\$79 trillion

**CURRENT INVESTMENT TRENDS** 

\$94 trillion

**INVESTMENT NEEDED** 

\$15 trillion \$875b/year

**INVESTMENT GAP** 



### **POLICY CONTEXT: STABILITY**

### PROMOTE GOOD PRACTICES TO KEEP THE BAD GUYS OUT

- Promote procurement practices that include life-cycle cost analysis and determine best value in objective, transparent manner
- Help partners build modern, sustainable infrastructure at an overall savings to their government and was sized and sited to specific need
- Technical assistance scope:
  - Rational project scoping, including considerations of sizing and siting
  - Reasonable infrastructure commodity (e.g., retail electric power)
  - Appropriate Bidder Qualifications and Process
  - Technical Spec
  - Market-based Commercial Terms and Contracts



### INFRA FINANCE FRAMEWORK APPROACH



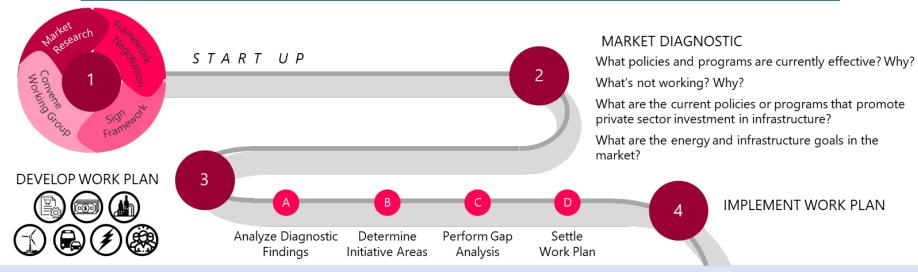
Identify and unleash value in partners energy and infrastructure markets by identifying impactful and scaled investment opportunities that rely on private capital solutions

2

Engage bilateral partners through infrastructure finance frameworks on a transactionoriented approach 3

Deploy resources and tools of all relevant U.S. government agencies and the private sector

### Bilateral Energy and Infrastructure Finance Approach



#### Whole of Government Toolkit

Enabling Environment	Market Feasibility & Framing	Project Preparation	Project Structuring & Design	Project Procurement & Construction	Project Finance
Technical Assistance Legal Drafting Economic Diplomacy	Market Intelligence Trade Counseling Trade Missions Technical Assistance	Feasibility Studies Technical Assistance Trade Missions Study Tours Solution Identification	Government Debt and Infrastructure Finance Program Technical Assistance Commercial Diplomacy Advocacy	Infrastructure Finance Program Business Matchmaking Technical Assistance Economic Diplomacy	Equity Financing Debt Financing Political Risk Insurance Loan Guarantees Government Debt and Infrastructure Finance Program







Optimize state-owned utility balance sheets



Improve tendering rules and processes to maximize financial efficiencies, ensure level playing field, and protect against predatory practices



### **BRIDGING THE FUNDING GAP: PRACTICE**

### **KEY GOALS**

### Frameworks focus on key goals of:

- 1. Supporting infrastructure investment opportunities in priority sectors agreed with partners and tailoring them to attract private capital by meeting limited recourse project finance bankability standards
- 2. Providing technical assistance to enhance enabling and foreign direct investment environments to reduce policy, legal, regulatory and market barriers
- 3. Advising government partners on SOE utility (a) balance sheet and debt capacity optimization, (b) value monetization and (c) off-taker creditworthiness enhancement
- 4. Improving and implementing bidding and procurement processes
- 5. Building financial markets, including depth and liquidity in infrastructure debt markets and domestic trading markets



### **REGIONAL INITIATIVES**

### LATIN AMERICA

The U.S. Government signed 13 partnership frameworks in support of America Crece

	Argentina
--	-----------



### **REGIONAL INITIATIVES**

### INDO-PACIFIC

Seven infrastructure finance frameworks across Asia in support of Asia EDGE and ITAN

Vietnam \$21.7 B Japan

\$14.59 B Indonesia Korea

Thailand \$20.77 B Singapore

Taiwan

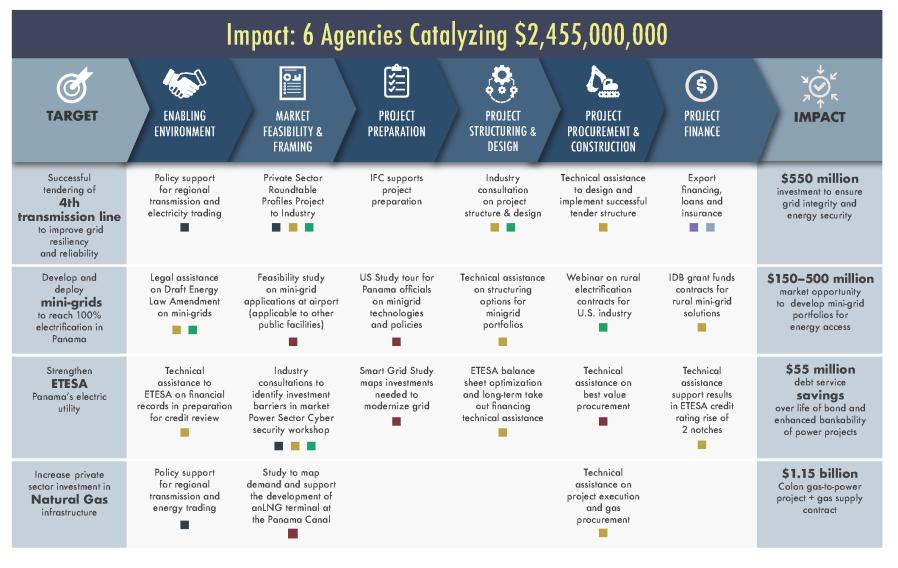






#### PANAMA: Snapshot of U.S. Government Investment and Impact























#### **VIETNAM:** Snapshot of U.S. Government Investment and Impact







**TARGET** 



ENABLING **ENVIRONMENT** 



MARKET FEASIBILITY & FRAMING



**PROJECT PREPARATION** 



**PROJECT** STRUCTURING & DESIGN



**PROJECT PROCUREMENT &** CONSTRUCTION



**PROJECT** FINANCE



Increase private sector investment support in greenfield natural gas infrastructure (LNG terminals. pipelines, and power plants)

Technical assistance for procurement and planning for of LNG infrastructure

Held Sept 2019 forum to map LNG project development best practices considerations such as legal, financial, and safety regulatory oversight and enforcement

Leading G2G policy discussions on energy security and infrastructure finance

Workshop on LNG opportunities and best practices

Creating Regional SEAsia Gas Roadmap under Asia Gas Partnership

Held LNG conference with Japan

Technical assistance on Gas Master Plan. petroleum standards development, and developing competitive power markets

LNG RTM and LNG Standards workshop in collaboration with API

Supporting EVN's feasibility study for an LNG-to-power project

Monitoring MOIT approval of PDP7 LNG plants with U.S. firm investment and U.S. exports

Asia EDGE Trade Mission



Technical assistance to EVN regarding the procurements for 2 gas-fired power plants: O-Mon IV and Dung Qaut I

Technical assistance to MOIT to issue minimum guidelines for LNG projects, including both technical specifications and regulatory compliance

Asia EDGE Trade Mission

Advocating for U.S. exports in energy projects

Asia EDGE Trade Mission

Supporting finance training workshops and seminars for personnel of EVN and its subsidiaries

Issued letter of Intent to fund AES LNG project in 2020

Engaging in market sounding discussions with developers and financiers

Support Vietnam's Goal of 10,000 MW of new natural gasfired power

generation by 2030

Support the development of new and existing thermal power plants that account for 60% of thermal generation

B2B and G2G best practices sharing

Technical assistance under JUMPP

Technical assistance to

inform PDP8

Asia EDGE Trade Mission

Asia EDGE Trade Mission

Advocating for U.S. exports in energy projects

Asia EDGE Trade Mission

Training workshop/ seminar for EVN and its subsidiaries

Increase thermal fleet efficiencies, reduce GHG emissions, and unlock cheaper sources of capital

Lead Agency: STATE

TREASURY

COMMERCE

FNFRGY

USAID







#### **VIETNAM:** Snapshot of U.S. Government Investment and Impact







**TARGET** 



**ENVIRONMENT** 



PROJECT **PREPARATION** 



**PROJECT** STRUCTURING & DESIGN



**PROJECT PROCUREMENT &** CONSTRUCTION



**PROJECT** FINANCE



Advance new renewable energy power generation projects including associated transmission infrastructure

B2B and G2G best practices sharing

Technical assistance under JUMPP

Asia EDGE Trade Mission

MARKET

FEASIBILITY &

FRAMING

Reverse Trade Mission for EVN

Providing technical assistance to inform PDP8

Worked with 5 Vietnamese investors to build and 263 MW of large-scale solar, which attracted \$259 million

Feasibility study for Convalt Transmission from Laos to Vietnam includina solar farm

Feasibility study for the National Load Dispatch Center energy storage project with GE and EVN

Asia EDGE Trade Mission 

Asia EDGE Trade Mission

Developing a Direct

Agreement to allow

producers to sell directly

Power Purchase

to consumers

Advocating for U.S. energy exports

Asia EDGE Trade Mission

Training workshop seminar for EVN and its subsidiaries

Conference to connect wind and solar project developers and financiers

Engaging in market sounding discussions with developers and financiers

Catalyze private sector investment to support 8,600 MW of new solar and wind renewable energy deployments

Evaluate and develop financial models for the build out and modernization of electricity networks - including mini/micro arids, transmission, and distribution networks

B2B and G2G best practices sharing

Technical assistance under JUMPP

Technical assistance on air conditioning standards

Reverse Trade Mission for EVN

Technical assistance to inform PDP8

Feasibility study for energy storage technologies to reduce power shortages and the need for additional peak generation in southern Vietnam w/EVN

Asia EDGE Trade Mission

Developing a Direct Power Purchase Agreement, which will allow renewable energy producers to sell directly to consumers

Asia EDGE Trade Mission 

USAID

Asia EDGE Trade Mission

Advocating for U.S.

energy projects

Engaging in market sounding discussions with developers and financiers

Support the needed \$25 billion in electricity network investments























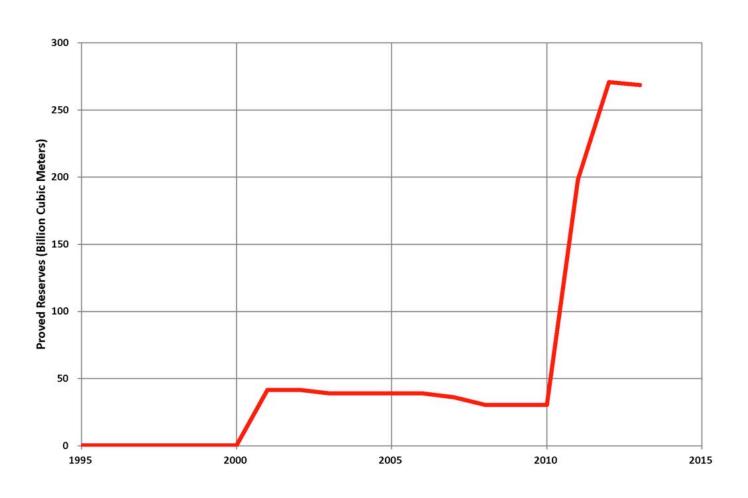
### **RECENT HISTORY OF ISRAEL NATURAL GAS**

- East Mediterranean Revolution
  - Reserves
  - Production
  - Consumption



### **RESERVES**

### OFFSHORE DISCOVERIES CHANGED OUTLOOK

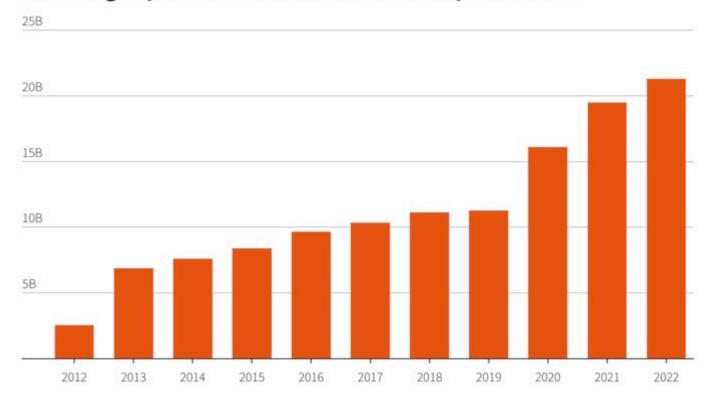




### **PRODUCTION**

### ISRAEL GAS PRODUCTION: GENERAL

### Israel's gas production rose 700% in the past decade



Note: In billion cubic metres (bcm)

Source: Israeli Ministry of Energy, Bank Leumi | Breakingviews | Y. Chen | Oct. 16, 2023

Reuters Graphics

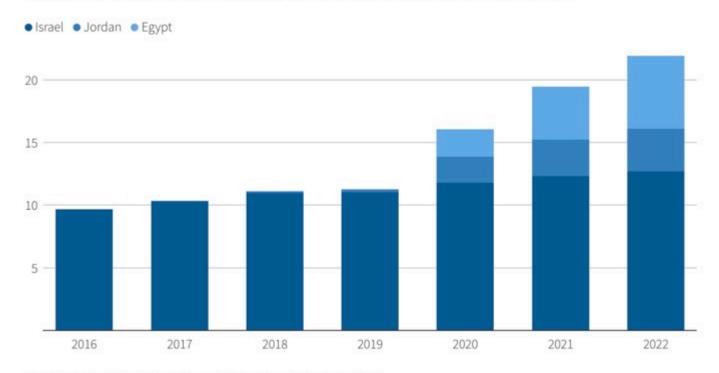


### **PRODUCTION**

### **ISRAEL GAS PRODUCTION: EXPORTS**

### Israel's natural gas production

Israel became a major exporter of natural gas to neighbouring Egypt and Jordan since 2020



Note: Destinations of Israel's gas production, in billion of cubic metres (BCM) Source: Israeli energy ministry

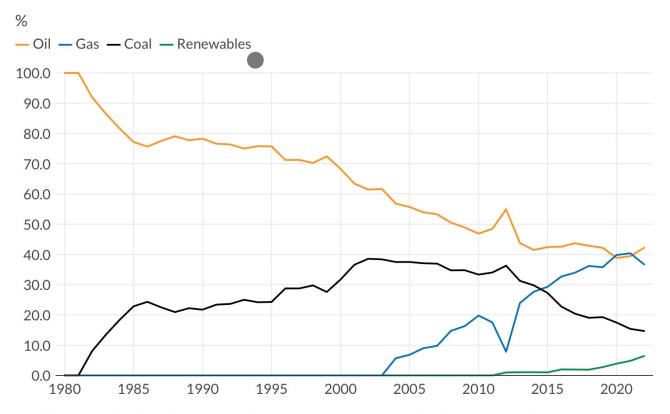
Reuters Graphics



### **ENERGY MIX**

### GAS PROVIDES CLEANER ALTERNATIVE

### Evolution of Israel's primary energy mix



Israel has reduced its dependence on oil and coal mainly in favor of natural gas but also renewable energy.

Source: Energy Institute, International Energy Agency

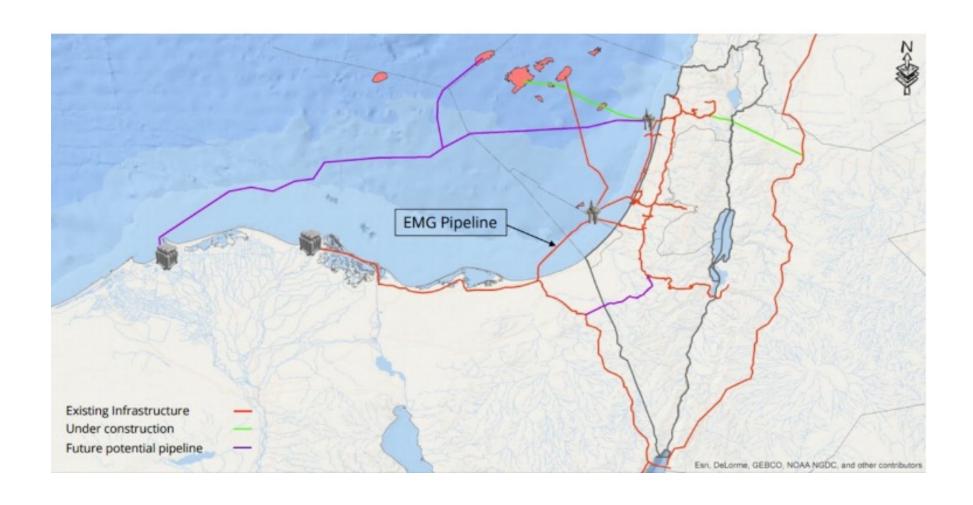


### REPLICATING U.S. GAS REVOLUTION IN THE MIDDLE EAST

- What would it take to enable East Mediterranean gas growth?
  - No man is an island: increase downstream demand to finance midstream investment to leverage upstream investment
- Implications for Regional Growth and Stability
  - Economic, energy security, political and environmental benefits



## INFRASTRUCTURE WHERE ARE WE NOW?





### **INFRASTRUCTURE**

### POTENTIAL NEAR-TERM GROWTH

- Bolster political stability by creating energy security and economic interdependencies and shared interests in the near term by
  - Further integrating and expanding natural gas networks among Israel, Egypt and Jordan
  - Identifying and framing concrete opportunities for downstream power generation capacity in Egypt and Jordan – both gas-fired and "value add" renewables
  - Proposing projects in Saudi Arabia that would be accretive, including development of shale gas resources, downstream power generation (gas and renewables) and associated midstream gas infrastructure in Western Saudi
  - Supporting post-war reconstruction by considering energy supply needs of Palestinian Territories



### **INFRASTUCTURE**

### POTENTIAL FOR MID-TO LONG-TERM GROWTH

- Bolster political stability by creating energy security and economic interdependencies and shared interests in the mid- to long term by
  - Midstream gas infrastructure in Saudi Arabia, including a pipeline on the West Coast from Jordan and LNG terminals
  - Expand Egyptian LNG export capacity for sales West
  - Beyond Jordan to the North



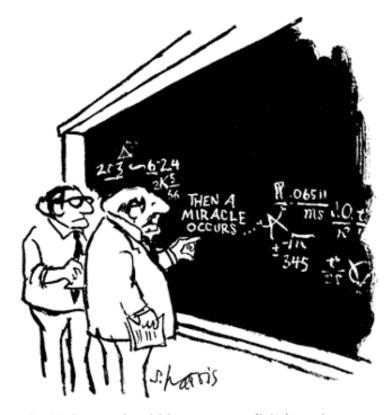
### **INFRASTRUCTURE**

### WINS, DRIVERS AND BENEFITS

- Investment value of near to mid-term midstream and downstream projects projected between \$51-67.5 billion
- Interesting political dimension/drivers binding glue
  - Mubadala \$1 billion investor in Tamar field
  - ADNOC (with BP) offer to invest \$2 billion in NewMed Energy (paused)
  - Aramco?
- Solutions will boost economic growth, enhance security and political stability, and protect the environment
  - A single molecule can change the world



## **QUESTIONS?**



"I think you should be more explicit here in step two."