

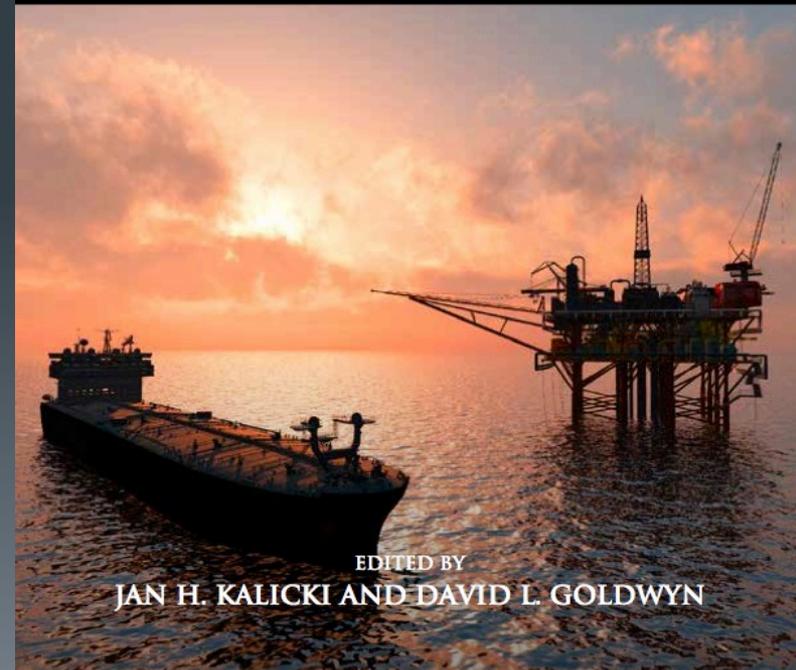
Energy and Security: Strategies for a World in Transition

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Fall 2013

SECOND EDITION

ENERGY & SECURITY

STRATEGIES FOR A WORLD IN TRANSITION





What's Changed Since 2005

- Technology is shifting the balance of power in energy
 - Technology-driven U.S. and Canadian production growth has made North American self-sufficiency in liquids a realistic prospect
 - U.S. crude oil and natural gas imports are declining and debate has ensued on U.S. exports
- OPEC's role in the market may change
 - Saudi Arabia will likely remain the world's largest oil exporter and holder of spare capacity, but it faces questions about this role moving forward
 - Leading gas exporters will include non-OPEC suppliers such as the U.S., Australia and East Africa
- U.S. emissions are on the decline
 - EIA projects substitution of natural gas for coal will play an important role in causing U.S. energy-related emissions to decline by 1% annually until 2035
 - The U.S. may meet the Obama Administration's target of a 17% reduction in 2005 CO₂ levels by 2020, even without legislative action



The Opportunity: Getting to GESS

- Global Energy Security System (GESS)
 - A system that will promote economic growth, limit and reduce greenhouse gas emissions, and further foreign policy goals
 - Will not end the need for trade-offs between energy, growth, climate, security and foreign policies, but will create a system in which those trade-offs are approached in a rational manner which prioritizes both long-term and near-term priorities
- The United States can take a leading role in helping the global energy economy 'get to GESS,' but it will take both domestic and international policy initiatives
 - In addition, will need to reorganize the US energy decision-making bodies to foster more coordination and a strategic energy policy, and encourage both federal and state leadership on energy issues
 - Should promote 'Coalitions of the Concerned:' Small, engaged working groups of governments and organizations designated for particular issues



Getting to GESS: Policy Initiatives

Domestic

- Embrace Hydrocarbon Exports
- Allow Inward Investment in the US Energy Sector
- Promote Strong Environmental and Climate Policy
- Sustain Federal RD&D Funding

International

- Propagate the Unconventional Energy Revolution Abroad
- Create a Competitive Gas Market
- Leverage Reduced US Imports to Forge Improved Coordination of Supply Disruption Responses
- Use Diplomacy to Foster Closer Alignment of Producers and Consumers
- Lead a Serious Effort to End Energy Poverty
- Sustained Commitment to Global Engagement and Protection of Sea Lanes



The Domestic Agenda



- Energy Security

- David L. Goldwyn and Jan H. Kalicki: “Developments in the new energy landscape will all culminate, in the aggregate, in either more or less energy security: the affordable, reliable access to the resources a nation needs to sustain national power.”
- Daniel Yergin: “Altogether, new security architectures have to be introduced into systems that were designed without much security in mind. And they need to be coordinated with other countries.”



- Climate Change

- Leon Fuerth: “Both US national and global stability require that we bring climate change under sufficient control... accomplishing this goal will require a new, integrated strategy that aims to reconcile very powerful forces that are at tension with each other.”
- Michael Levi: “GHG emissions are primarily the result of fossil fuel combustion, not production... US climate policy should thus focus on the consumption side of the equation, disincentivizing or restricting GHG emissions as appropriate.”



The Domestic Agenda (Cont'd)

- Investment in Research and Development

- Melanie A. Kenderdine and Ernest J. Moniz : “Low-cost, clean, and reliable energy supply is important to stimulate economic recovery and long-term prosperity while mitigating climate change risks. Adequate investment in energy research and development and infrastructure are necessary contributors to success in this endeavor.”

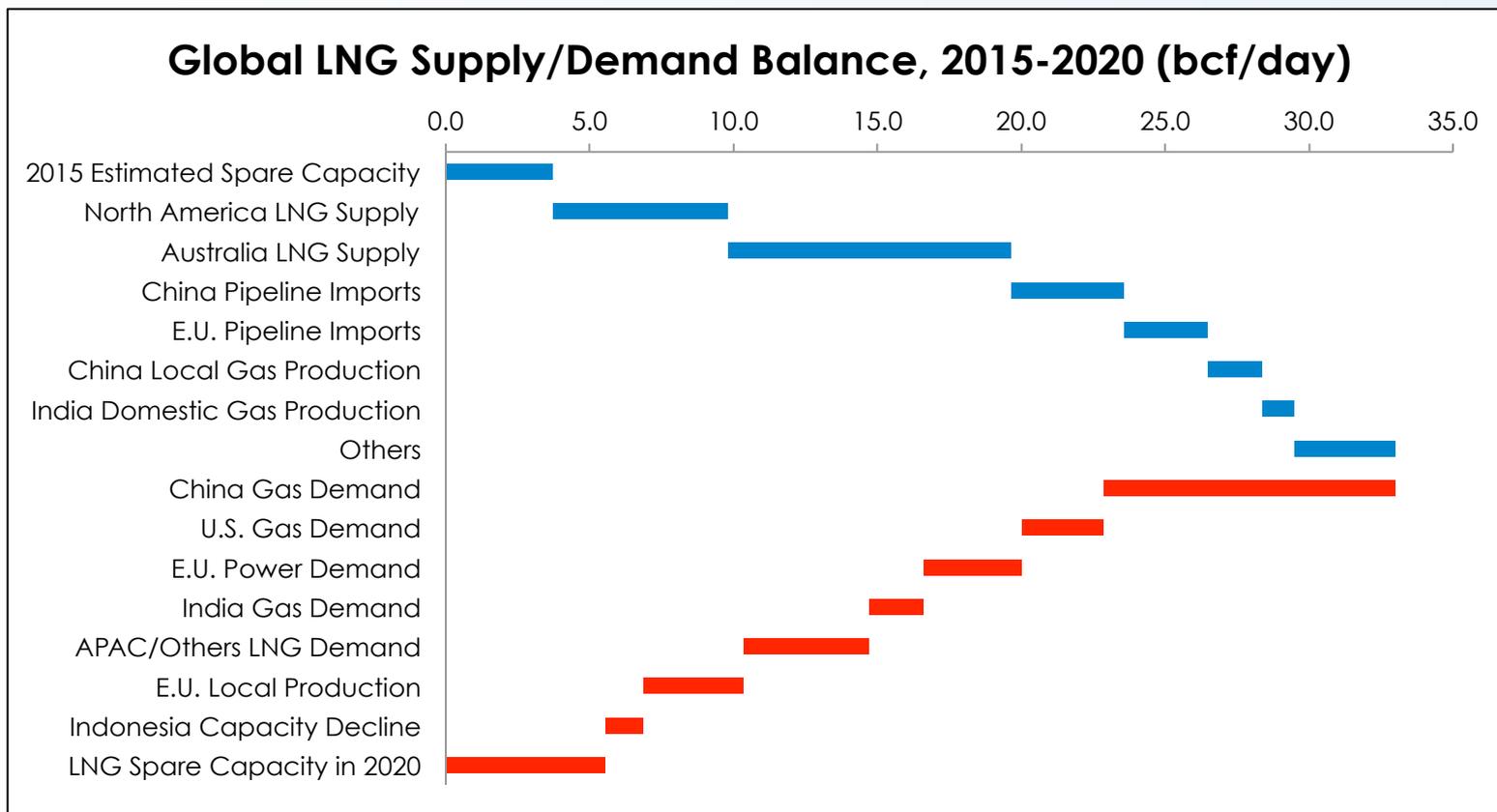
- Daniel Yergin: “A commitment to research and development and innovation across a broad spectrum is fundamental to energy security. In the long term, innovation is the engine both for achieving broadly based diversification and for establishing the basis for a transition to new energy systems.”

- Natural Gas as a Bridge

- David G. Victor: “The environmental benefits are already clear. Low gas prices in the United States, along with tighter regulation of coal, have allowed a massive shift toward natural gas in the US electric industry, leading to much lower US emissions of gases that cause global warming and possibly even greater reductions in the future.”



US LNG: An economically bound opportunity



Source: Brookings Estimates, IEA, EIA, Morgan Stanley, JP Morgan, Credit Suisse



LNG Export Capacity: Existing and Announced

Who Will Surpass Qatar?

Liquefaction Nameplate Capacity (mmtpa)

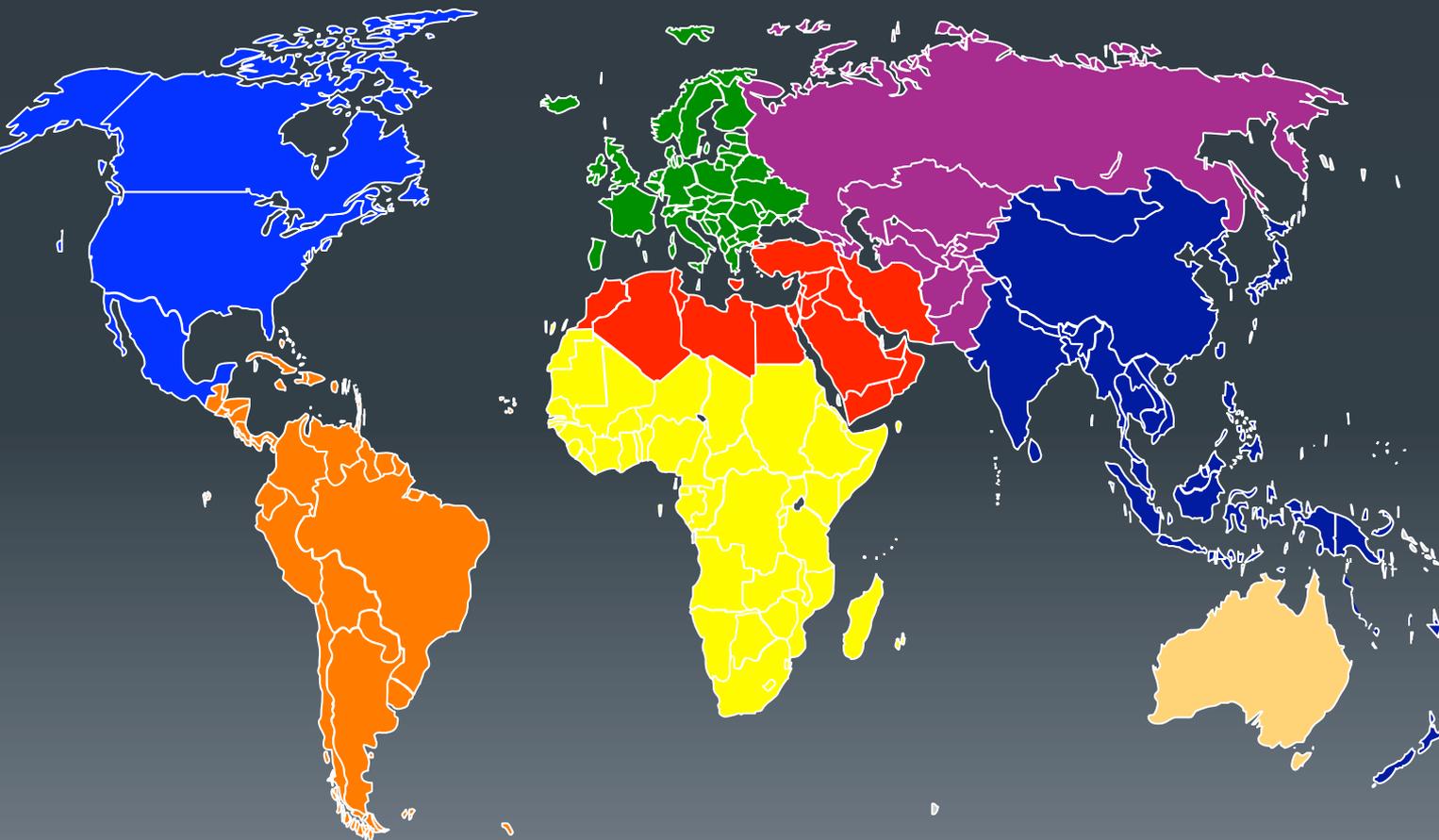
	In Operation	Under Construction	Announced	Total
Qatar	77.1	-	-	77.1
Australia	24.5	61.8	67.5	153.2
Nigeria	22.3	-	40.5	62.8
Russia	9.6	-	44.0	53.6
United States	-	18.0	242.0	251.0
Canada	-	-	70.8	70.8
East Africa	-	-	45.0	45.0

- North America and East Africa emerging as new LNG export provinces.
- Shale gas is the driving force in North American gas supply while East African reserves are mostly offshore in Mozambique & Tanzania.
- Will LNG price be linked to oil or a Hub basis?



The International Agenda

Issues



Resource Supply
Regulatory Policy
Environment and
Social Concerns

Gas Market Integration
Security of Supply
Import Dependence

Geopolitical Risk
Demand Growth
Subsidy Reform

New Producers Rising
Transparency
Sector Reform

New Producers Rising
Renewables
Investment

Russia Market Position
Pipeline Competition

Import Dependence
Demand Growth

LNG Exports

Asia and Australia

- Amy Myers Jaffe and Kenneth Medlock III: “China, India and Asian Energy”
 - Demand Growth: “The Asia-Pacific accounted for 56 percent of the increase in global primary oil demand from 2000 to 2010, and the Baker Institute projects it to account for 70 percent of global oil demand growth from 2010 to 2020. China and India are leading this surge.”
 - Import Dependence: “Rapidly rising imports of oil and natural gas in large Asian economies have been a key driver to rising commodity prices...and have brought new geopolitical realities.”
- Mikkal Herberg: “Japan, Southeast Asia and Australia”
 - Japan: “Fukushima triggered a resurgence in Japan’s energy security anxieties, most importantly over future LNG supplies.”
 - SE Asia: “Hopes for new supplies in deeper offshore waters of the South China Sea are entangled in disputes with China over conflicting maritime territorial claims and control of energy sea-lanes.”
 - Australia: “Australia’s interests consist of ensuring that its rising energy exports have reliable access to energy markets across Asia as well as secure and open sea-lanes to serve those markets.”





Asia: U.S. Recommendations

- Jaffe and Medlock: “Despite strategic differences, the United States, China, Japan and India will remain among the world’s largest economies and represent the largest oil-consuming nations in the world.”
- Strengthen Collaboration with China on Sea-Lane Security
 - Herberg: “With less strategic baggage than the United States in its relationship with China, Australia can potentially provide a bridge in finding new ways to collaborate on energy sea-lane security.”
- Grow Engagement with ASEAN
 - Herberg: “ASEAN has discussed for 15 years the need for regional emergency oil stocks. The region is ripe for drawing all the major players into a regional oil stock system that would strengthen Asia’s energy security while beginning to institutionalize energy cooperation.”
- Expand Energy Ties with the Pacific Islands
 - Herberg: “Given the positive relationship between the Pacific Islands and China, energy cooperation could provide another bridge toward U.S.-China cooperation. The islands would be important beneficiaries from and contributors to a regional emergency oil stock system.”

Europe

- Pierre Noel: “European Gas Supply Security: Unfinished Business”
 - Gas Market Integration/Security of Supply: “Dependence on Russian gas is not an issue for the EU *as a whole*. A handful of Western European countries overwhelmingly dominate EU gas consumption and imports but also enjoy a relatively high level of supply diversity. The so-called new member states are highly dependent on Russia.”
- Julia Nanay and Jan H. Kalicki: “Russia and Eurasia”
 - Market Positioning: “Changed Western market realities have completely upended Russia’s vision for the next generation of gas export projects. Russia, Kazakhstan and Turkmenistan will seek increasingly to drive their oil and gas exports toward Asia.”
 - Pipeline Competition: “Because Russia’s gas future is still tied significantly to Europe, it will work hard to defend its predominant position in certain countries, which it could potentially ask BP, Eni and Statoil to support. In the North, a third line of Nord Stream is to be commissioned...Russia is also still looking to start up its 63 bcm per year South Stream pipeline in 2016.”





Recommendations for Europe and the U.S.

- Europe
 - Noel: “Central and Eastern Europe should address their short-term gas supply security problem by increasing the resilience of their energy systems to gas supply disruptions.”
 - “At the EU level, Brussels should concentrate on reviving its single gas market project to allow for an integrated, pan-European market would make Russian gas contestable in Central Europe, therefore limiting the risks of import dependence.”
- United States
 - Nanay and Kalicki: “After combat forces withdraw from Afghanistan and other issues draw resources, there may be less patience for high-level political and economic support to Eurasia. Yet the region’s contribution to global energy security and limited capacity to withstand the pressures of neighbors and a possibly increased Islamic extremist threat call for continued U.S. and Western engagement.”



Western Hemisphere

- Thomas F. McLarty: “Latin America”
 - New Producers Rising: “New energy leaders such as Brazil, Colombia and Peru have emerged, while traditional pacesetters such as Venezuela, Mexico and Argentina have struggled with declining production amid rising domestic demand.”
 - Limited Renewables Investment: “Renewable energy in Latin America has its own unique hurdles, including a lack of available capital and robust supply chains and prohibitive import barriers. As a consequence, Latin America attracted only 5 percent of the world’s new investment in clean energy projects in 2011.”
- Implications for the U.S.
 - “If you combine Latin America’s capacity to grow its energy exports with massive new shale gas finds in the United States and the expanded development of Canada’s substantial oil sands deposits, you will see a potential that was unthinkable just a few years ago: *a United States that is mostly energy self-sufficient, with the overwhelming majority of our energy imports coming from partners in the Western Hemisphere.*”





Recommendations for the U.S.

- Recommendations for the U.S.
 - “U.S. companies have capital and scientific and engineering expertise that can be an essential component to Latin America’s energy development. The U.S. should approach these projects with respect given regional sensitivities with foreign energy sector participation.”
 - “The U.S. should make every effort to deepen our energy relationship with the region, up to and including the pursuit of a comprehensive Energy Compact of the Americas, which would feature more formalized cooperation investment, and research and technology sharing in the energy arena.”



The International Agenda



- Managing the Arctic, Charles Emmerson
 - “Although some areas are highly likely to undergo development before 2020 — including offshore in the Norwegian and Russian Barents Sea — and areas such as the Alaskan North Slope will continue producing for the foreseeable future even without major further investment — other areas, such as offshore Alaska, are more distant prospects.”
 - “These areas will not be developed unless resources are discovered in economically viable quantities, in politically and environmentally permissive contexts, with adequate and safe means of getting the resource to market, and with some degree of confidence about market conditions once production begins, potentially 10, 15, or 20 years into the future.”
- Rethink the Strategic Petroleum Reserve (SPR)
 - Michelle Billig Patron and David L. Goldwyn: “The changing North American energy landscape will not relieve the US from the need to use the SPR to address price shocks caused by disruptions of oil supply... With some forethought and changes in policy and infrastructure, we can make the SPR a powerful tool for a world of growing political instability.”
 - Daniel Yergin: “The SPR comes with a temptation to use it in market-management schemes to deal with temporary price fluctuations. This temptation must be resisted. If the SPR is used as a tool of price management, it will be devalued as an instrument and lose its legitimacy.”





Organizing for Change

- In order to achieve GESS – a world where energy policy is strategic, balanced and forward-looking – the US energy policy framework will need to adapt
- The White House is the center of energy policy decisions in the US, and the capabilities should be built up
- The Department of Energy and the Energy and Natural Resources Bureau at the State Department can both play important roles in developing global energy policy that supports the US's foreign and security objectives, and their roles should be sustained
- Climate change policy encompasses numerous agencies and authorities, from the White House, to the EPA and DOE, to the State Department. A national climate agenda is necessary



Thank You

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