Geopolitics and Natural Gas

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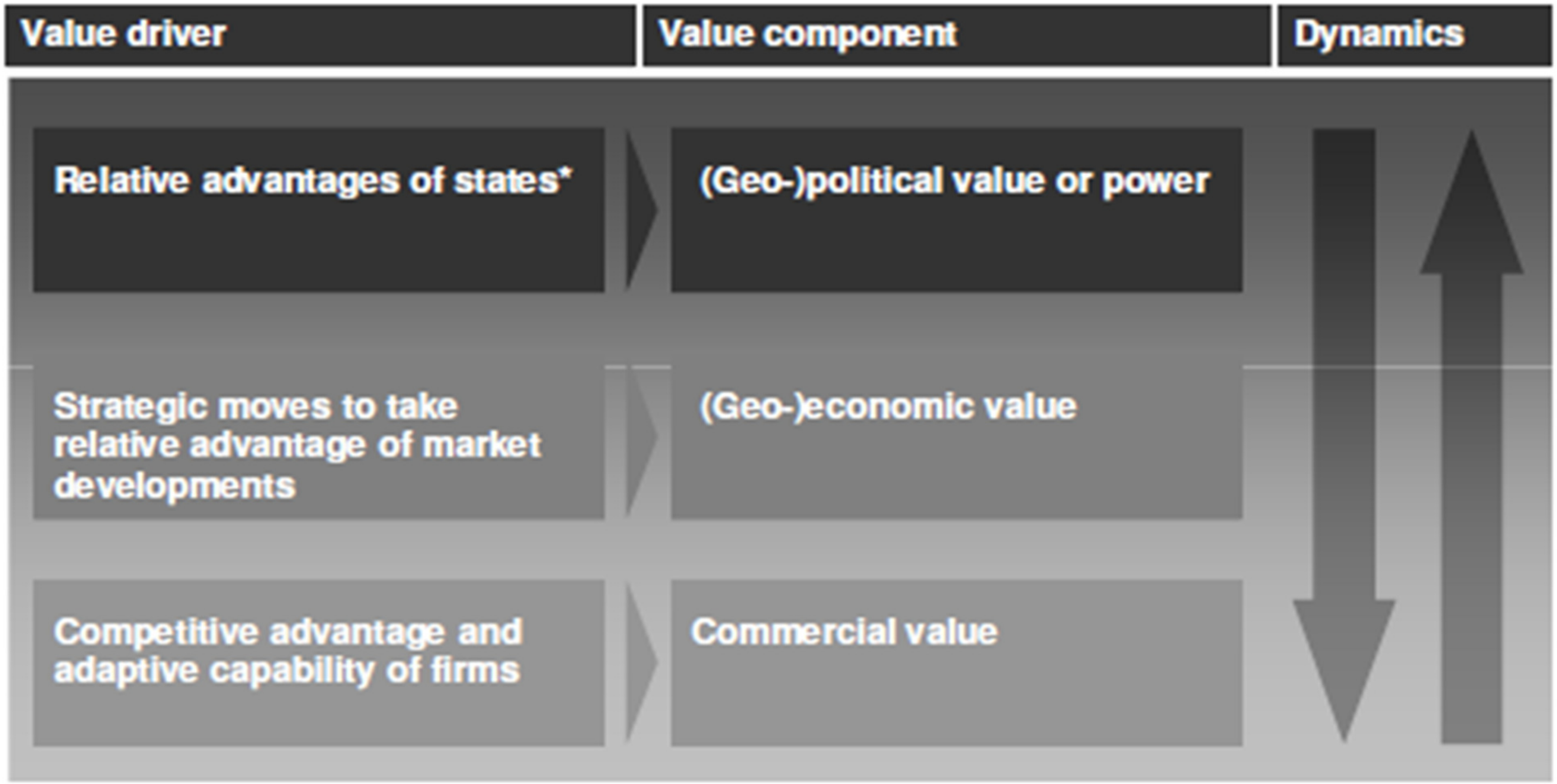
June 6th, 2012, 09:00

Task Force 3
Geopolitics and Natural Gas

Objectives

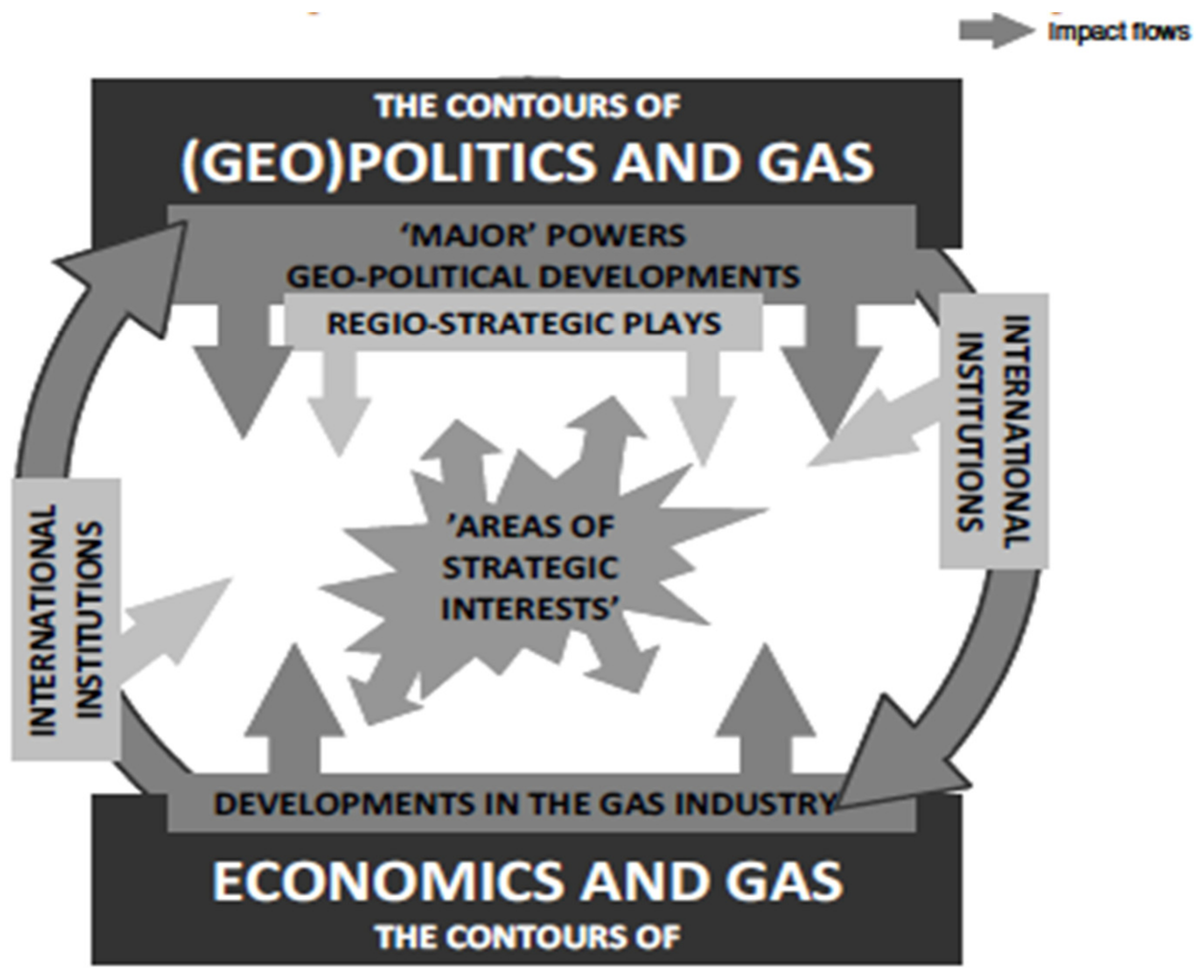
- Examine the interplay between economic and political factors in the development of natural gas resources
- Analyze the main political challenges, mega-trends, issues and consequences that may shape a future natural gas-intensive world
- Engage the international stakeholder community in a dialogue aimed at:
    - Creating greater awareness of the potential hurdles to a growing international gas market, and
    - Fostering cooperation between the industry and policy makers in producer and consuming countries
- Distil potential recommendations for further advancement of cooperation between key stakeholders, for review at WGC 2012 Round Table

Connecting (geo-)economic and (geo-)political value

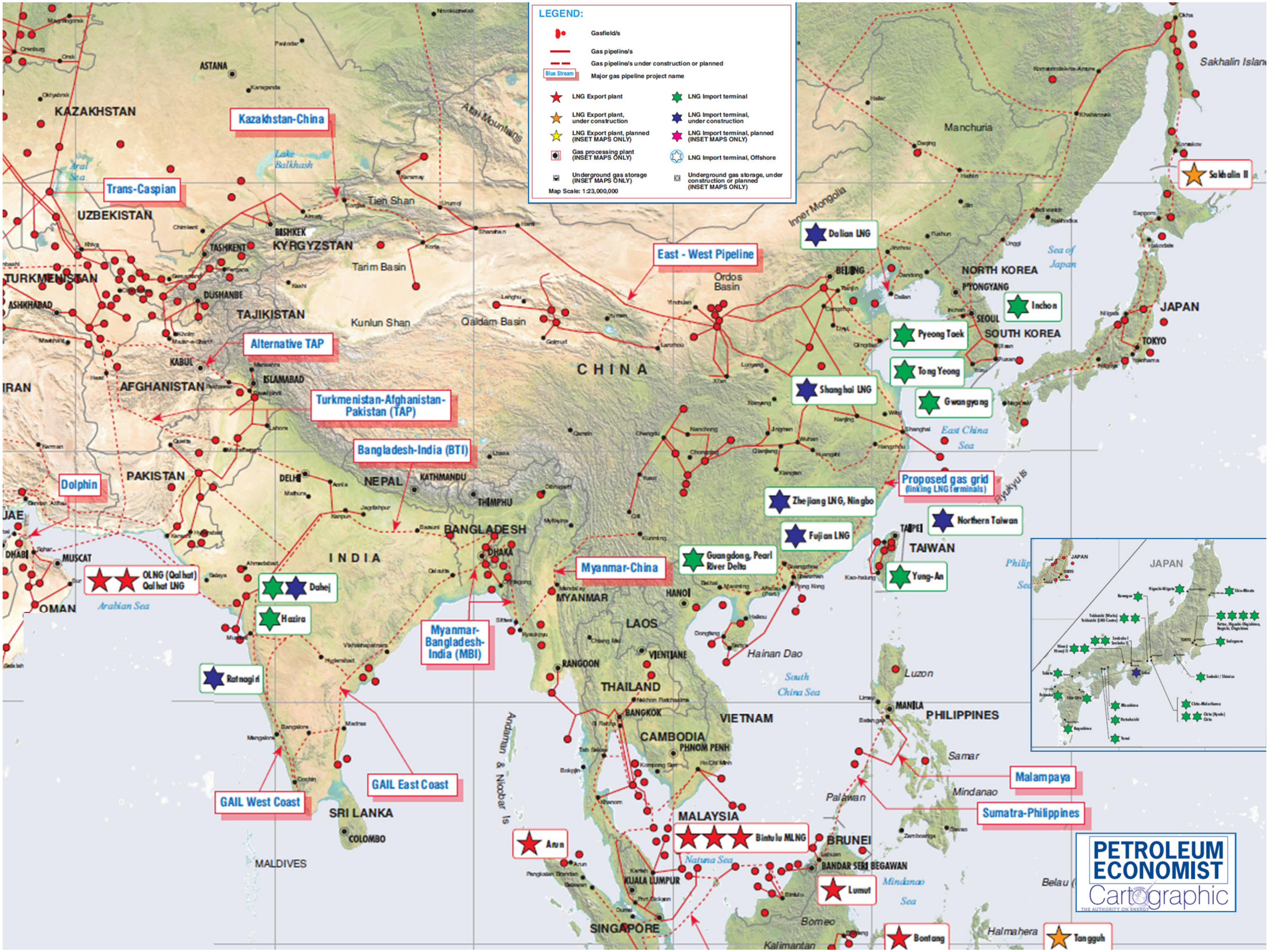


* Defined via structural relative advantages in finance, production, knowledge and security.
Source: CIEP analysis, based on Smit and Trigeorgis (2004), Strange (1996), Waltz (1959).

Interaction of geopolitics and gas developments



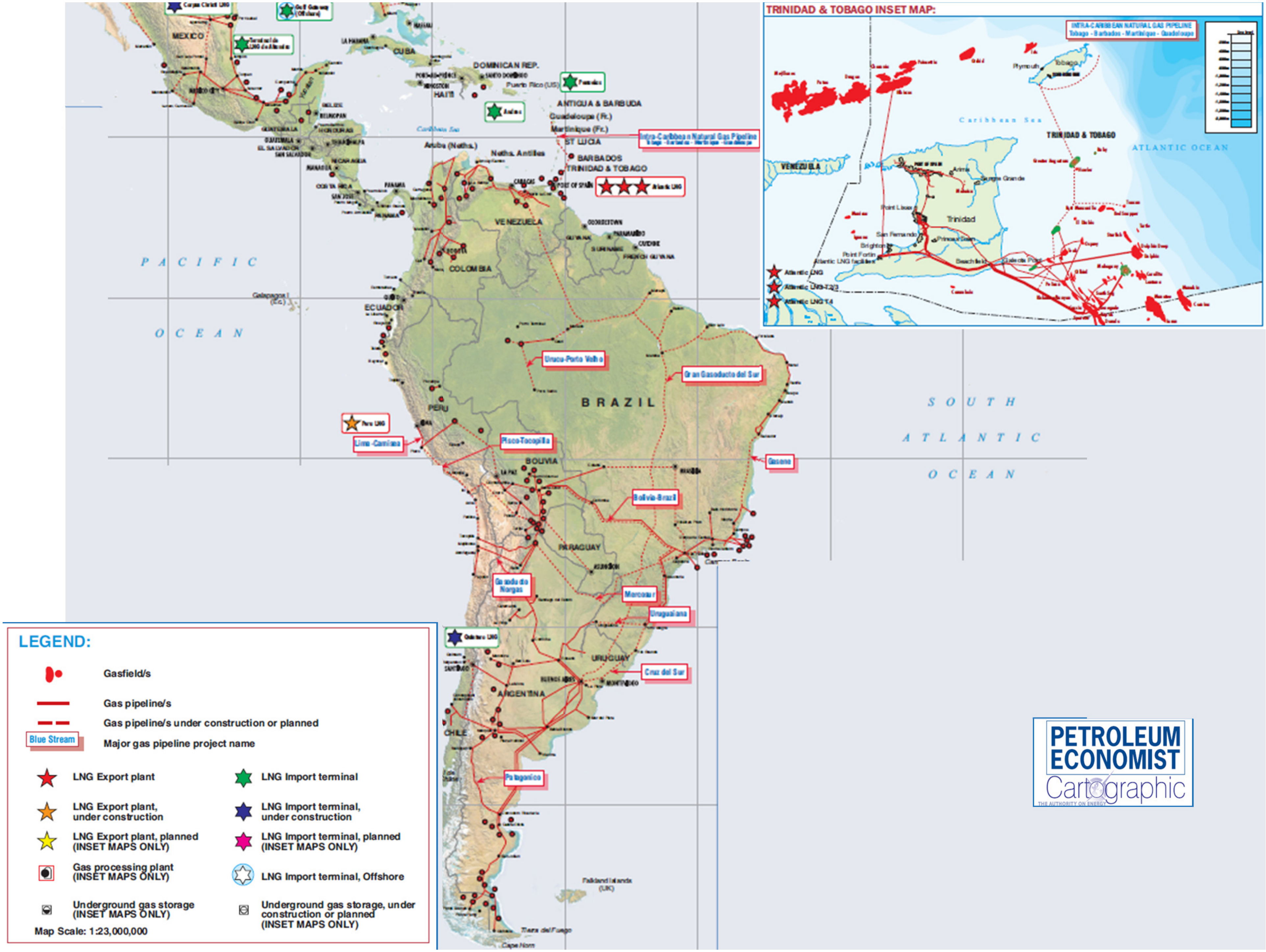
Source: CIEP analysis.



LEGEND:
Gasfield/s
Gas pipeline/s
Gas pipeline/s under construction or planned
Blue Stream
Major gas pipeline project name
LNG Export plant
LNG Import terminal
LNG Export plant, under construction
LNG Import terminal, under construction
LNG Export plant, planned (INSET MAPS ONLY)
LNG Import terminal, planned (INSET MAPS ONLY)
Gas processing plant (INSET MAPS ONLY)
LNG Import terminal, Offshore
Underground gas storage (INSET MAPS ONLY)
Underground gas storage, under construction or planned (INSET MAPS ONLY)
Map Scale: 1:23,000,000
Kazakhstan-China
Trans-Caspian
Alternative TAP
Turkmenistan-Afghanistan-Pakistan (TAP)
Bangladesh-India (BTI)
Dolphin
East - West Pipeline
Myanmar-China
Myanmar-Bangladesh-India (MBI)
Proposed gas grid (linking LNG terminals)
GAIL West Coast
GAIL East Coast
Malampaya
Sumatra-Philippines
OLNG (Qalhat) Qalhat LNG
Dahej
Hazira
Ratnagiri
Dalian LNG
Incheon
Pyeong Taek
Tong Yeong
Gwangyang
Shanghai LNG
Zhejiang LNG, Ningbo
Fujian LNG
Guangdong, Pearl River Delta
Northern Taiwan
Yung-An
Sakhalin II
Arun
Bintulu MLNG
Lumut
Bontang
Tangguh
KAZAKHSTAN
UZBEKISTAN
TURKMENISTAN
KYRGYZSTAN
TAJIKISTAN
AFGHANISTAN
IRAN
PAKISTAN
UAE
OMAN
INDIA
NEPAL
BANGLADESH
CHINA
MYANMAR
LAOS
THAILAND
CAMBODIA
VIETNAM
MALAYSIA
BRUNEI
PHILIPPINES
TAIWAN
NORTH KOREA
SOUTH KOREA
JAPAN
SRI LANKA
MALDIVES
SINGAPORE
ASTANA
TASHKENT
BISHKEK
DUSHANBE
ASHKHABAD
KABUL
ISLAMABAD
DELHI
KATHMANDU
THIMPHU
DHAKA
HANOI
VIENTIANE
RANGOON
BANGKOK
PHNOM PENH
KUALA LUMPUR
BANDAR SERI BEGAWAN
MANILA
TAIPEI
BEIJING
PYONGYANG
SEOUL
TOKYO
MUSCAT
DHABI
COLOMBO
Tien Shan
Tarim Basin
Kunlun Shan
Qaidam Basin
Ordos Basin
Altai Mountains
Inner Mongolia
Manchuria
Aral Sea
Lake Balkhash
Arabian Sea
Sea of Japan
East China Sea
South China Sea
Natuna Sea
Mindanao Sea
Hainan Dao
Luzon
Samar
Mindanao
Palawan
Borneo
Kalimantan
Halmahera
Belau
Ryukyu Is
Andaman & Nicobar Is
Sakhalin Island
PETROLEUM ECONOMIST
Cartographic
THE AUTHORITY ON ENERGY

Asia-Pacific Roundtable

- Growth market for gas
- Fragmented region, no regional common denominator
  - Limited pipeline interconnection, further market integration not foreseen
  - LNG is the principal commodity
- Price
  - Price controls in most countries
  - Differences between domestic production viz. international prices (LNG) create tensions
- Politics and international gas trade
  - Pipeline gas very political
  - LNG imports market based
- Strong focus of discussion on China
  - Strong (geo-)political dimension around China-Russia and China-Caspian
  - Relatively small role for gas may change quickly with the successful development of unconventional
- Environment does not play a major role except for local pollution
  - Australia now starting with a carbon tax
- Little movement towards new business models: long term contracts prevail



PETROLEUM ECONOMIST Cartographic

WGC 2012 YOUTH PROGRAMME Kuala Lumpur

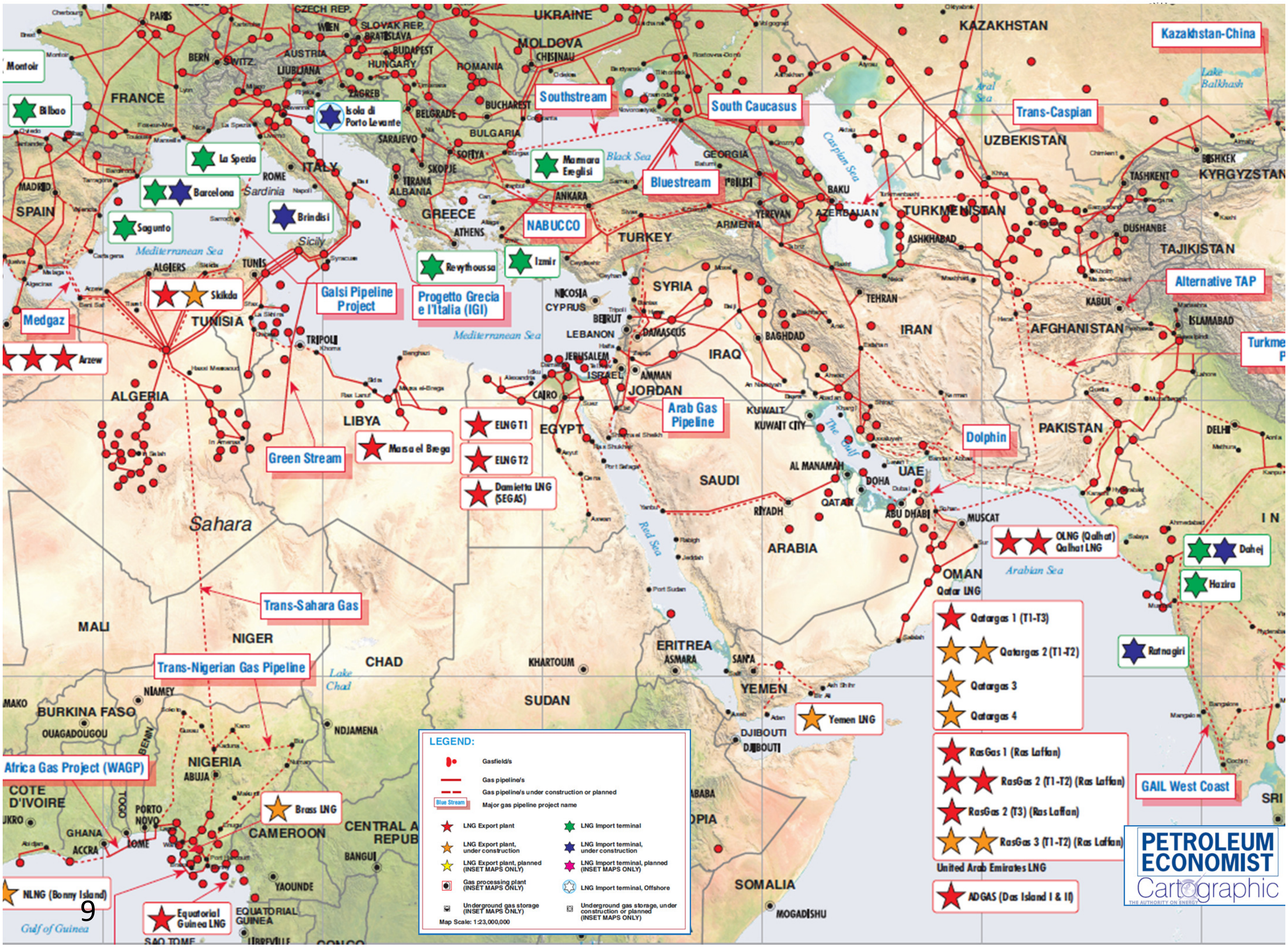
South America Roundtable

- A very diversified region
- Growth market for gas, particularly in Southern cone
- National politics affect further prospects for pipeline interconnection; this also limits the outlook on an “internal market”
- LNG imports/exports have become the preferred option

- Major differences between prices for domestic production and imports
    - Price controlled by government or state companies in various countries

- Environmental policies not yet (high) on the agenda
    - Hydro and biofuels play an important role

- Role for gas different from other regions
    - No need for space heating
    - Difficult role as back-up for hydro
    - Competing with biomass-based fuels


UKRAINE
KAZAKHSTAN
Kazakhstan-China
MOLDOVA
FRANCE
Montoir
Bilbao
Isola di Porto Levante
Southstream
South Caucasus
Trans-Caspian
UZBEKISTAN
KYRGYZSTAN
La Spezia
Barcelona
Saguntu
Brindisi
Marmara Ereglisi
Bluestream
GEORGIA
NABUCCO
GREECE
TURKEY
TURKMENISTAN
TAJIKISTAN
SPAIN
ITALY
Mediterranean Sea
Black Sea
Caspian Sea
Revythoussa
Izmir
Skikda
Galsi Pipeline Project
Progetto Grecia e l'Italia (IGI)
SYRIA
Alternative TAP
Medgaz
TUNISIA
Arzew
ALGERIA
LIBYA
LEBANON
IRAQ
IRAN
AFGHANISTAN
JORDAN
Arab Gas Pipeline
ELNG T1
ELNG T2
Damietta LNG (SEGAS)
Marsa el Brega
Green Stream
EGYPT
KUWAIT
Dolphin
PAKISTAN
SAUDI ARABIA
QATAR
UAE
OMAN
OLNG (Qalhat) Qalhat LNG
Dahej
Hazira
Sahara
Trans-Sahara Gas
MALI
NIGER
CHAD
SUDAN
ERITREA
YEMEN
Trans-Nigerian Gas Pipeline
Qatar LNG
Qatargas 1 (T1-T3)
Qatargas 2 (T1-T2)
Qatargas 3
Qatargas 4
Ratnagiri
Yemen LNG
BURKINA FASO
NIGERIA
West Africa Gas Project (WAGP)
RasGas 1 (Ras Laffan)
RasGas 2 (T1-T2) (Ras Laffan)
RasGas 2 (T3) (Ras Laffan)
RasGas 3 (T1-T2) (Ras Laffan)
United Arab Emirates LNG
ADGAS (Das Island I & II)
GAIL West Coast
Brass LNG
CAMEROON
NLNG (Bonny Island)
Equatorial Guinea LNG
SOMALIA
Gulf of Guinea
Arabian Sea
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THE AUTHORITY ON ENERGY

Middle East/North Africa (MENA) Roundtable

- MENA is a growing market for gas
- Market integration is not foreseen, partly due to regional political mistrust and pricing issues; telling is the preference for LNG both for diversity of supply and demand
- There are considerable differences in gas pricing for domestic, regional and international markets, resulting in (political) tensions
- Growing regional demand will take priority over exports, limiting export potential from the region
  - Only Qatar and Algeria remain as serious exporters in the short/medium term
- The current unrest will impact the political landscape
  - Main impact on the international gas business will be a reduction in further export potential
- LNG exports are conducted on a business-to-business basis
- Virtually all pipeline business has political overtones
  - Regional business is done on a government to government basis. Transit and pipeline connections are governed by political issues
  - Also for supplies out of the region (e.g. Iran to India and Pakistan; and connecting to Pan Arab pipeline to Turkey)
- Climate change does not seem to be high on the agenda in the MENA region
- From a geopolitical perspective, gas in MENA does not nearly have the same impact as oil


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THE AUTHORITY ON ENERGY
United Kingdom LNG
Teesside GasPort
Grain LNG
Dragon LNG (Milford Haven)
South Hook LNG (Milford Haven)
Belgium LNG
Zeebrugge
France LNG
Fos-sur-Mer
Montoir
Mugardos
Bilbao
Sagunto
Sines
Huelva
Spain LNG
Cartagena
Barcelona
La Spezia
Isola di Porto Levante
Brindisi
Revythoussa
Marmara Ereglisi
Izmir
Skikda
Snohvit LNG (Melkoya Island)
Langeled
Magnus EOR
Nord Stream
Yamal - Europe
Southstream
South Caucasus
Bluestream
NABUCCO
Trans-Caspian
Kazakhstan-China
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Progetto Grecia e l'Italia (IGI)
Medgaz
Barents Sea
Kara Sea
Bear I (Nor.)
Novaya Zemlya
Yamal Peninsula
Gydan Peninsula
Fugloybanken
North Cape
Saroya Island
Kolguyev I
Kanin Pen
Kola Peninsula
Timan Pechora
White Sea
Haltenbanken
SWEDEN
NORWAY
FINLAND
Gulf of Bothnia
Lake Onega
Lake Ladoga
URAL MOUNTAINS
Ob Basin
R U S S I A N
UNITED KINGDOM
North Sea
DENMARK
Baltic Sea
ESTONIA
LATVIA
LITHUANIA
BELARUS
MOSCOW
GERMANY
POLAND
UKRAINE
KAZAKHSTAN
ASTANA
MOLDOVA
ROMANIA
HUNGARY
BULGARIA
FRANCE
SPAIN
PORTUGAL
ITALY
GREECE
TURKEY
GEORGIA
ARMENIA
AZERBAIJAN
UZBEKISTAN
TURKMENISTAN
KYRGYZSTAN
TAJIKISTAN
AFGHANISTAN
IRAN
SYRIA
CYPRUS
LEBANON
TUNISIA
Black Sea
Caspian Sea
Aral Sea
Lake Balkhash
Mediterranean Sea
Sardinia
Sicily
Tien Shan
Tarim Basin
Kunlun Shan
LONDON
PARIS
DUBLIN
MADRID
LISBON
ROME
BERLIN
WARSAW
KIEV
MINSK
HELSINKI
TALLINN
RIGA
VILNIUS
STOCKHOLM
OSLO
COPENHAGEN
AMSTERDAM
BRUXELLES
PRAGUE
WIEN
BRATISLAVA
BUDAPEST
LJUBLJANA
ZAGREB
BELGRADE
SARAJEVO
SOFIYA
SKOPJE
TIRANA
ALBANIA
ATHENS
BUCHAREST
CHISINAU
ANKARA
TBILISI
YEREVAN
BAKU
ASHKHABAD
TASHKENT
BISHKEK
DUSHANBE
KABUL
TEHRAN
BAGHDAD
DAMASCUS
BEIRUT
NICOSIA
TUNIS
ALGIERS
RABAT
BERN
SWITZ.
AUSTRIA
CZECH REP.
SLOVAK REP.
LUX.
NETHS
BEL

EU-CIS Roundtable

- Transit is a commercial, but also geopolitical, issue
  - Potentially high impact if Ukraine re-emerges as a problem (it did not)
  - Increased European LNG supplies may mean a transit protocol is less necessary
  - The EU "Southern Corridor" concept also raises significant transit problems (Caspian Sea, Turkey)
- Market reform
  - 3rd package considered to have (geo) political dimension
  - Pricing issues (so far) only market related
  - (Regulatory and Roadmap) uncertainty is the biggest problem (for all stakeholders)
- Environment
  - High on the political agenda but uncertainty reigns
  - Gas considered to be part of the solution, but with CCS
- Security of Supply
  - Unconventionals could have major impact, but not a game changer and not before 2020
  - Backing of Nabucco by EC is considered politically inspired

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