



# White Stream™

**A Priority Project of the EU and  
integral component of the Southern  
Gas Corridor**

**Roberto Pirani – Chairman of the Board**

**OSCE – Ashgabat May 2010**

**Project development by the White Stream Consortium  
GUEU - White Stream Pipeline Company Ltd – London, UK  
[www.queu-whitestream.com](http://www.queu-whitestream.com)**

# The White Stream gas transportation project in the context of the Southern Gas Corridor

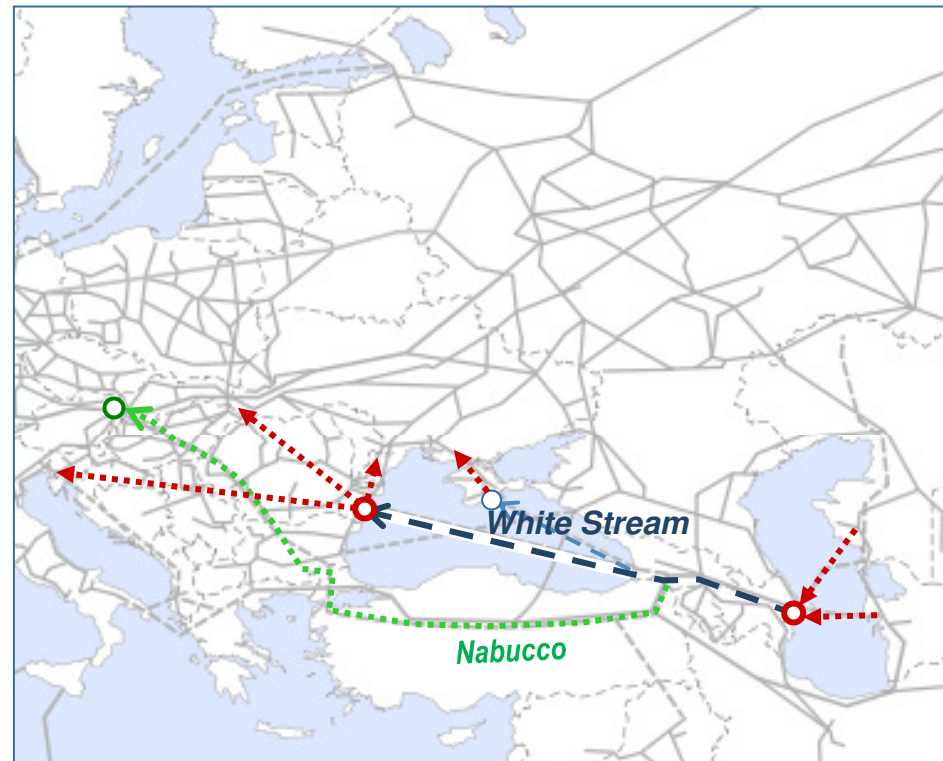
White Stream

A factor important for Caspian region governments and for potential upstream investors is the ***security and continuity of demand***

The ***concurrent*** development of White Stream with Nabucco and other Turkish loop projects offers producers and exporters such ***security of demand***

The important result is ***not only*** 60 Bcm+ of capacity, but also dramatic reduction of perceived transportation risks

Therefore the projects included in EU's Southern Corridor plan are ***mutually reinforcing*** and ***all needed*** for their ***individual and indispensable*** role.





## EU support the development of the Southern Corridor

White Stream

The EU Energy Commissioner ***Günther Oettinger*** told the energy forum in Ashgabat on the 14th of April 2010:

“The Commission will continue to strongly support the development of the Southern Corridor”

“**Several projects make up the southern corridor, including *Nabucco, the ITGI and White Stream.***”

The importance of the southern corridor was explicitly recognized by all 27 Head of States of the European Union at the European Council in March 2009”

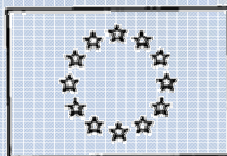




# White Stream – has become a part of EU's Southern Corridor

White Stream

The White Stream project has been approved as a Project of Common Interest and a Priority Project...



COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 28 May 2008  
C(2008) 1969 final

## COMMISSION DECISION

**establishing the projects of common interest eligible in the area of the trans-European energy networks selected for receiving Community financial aid in the framework of Decision C(2007)3945 for the annual work programme 2007 and the call for proposals launched on 15 June 2007**

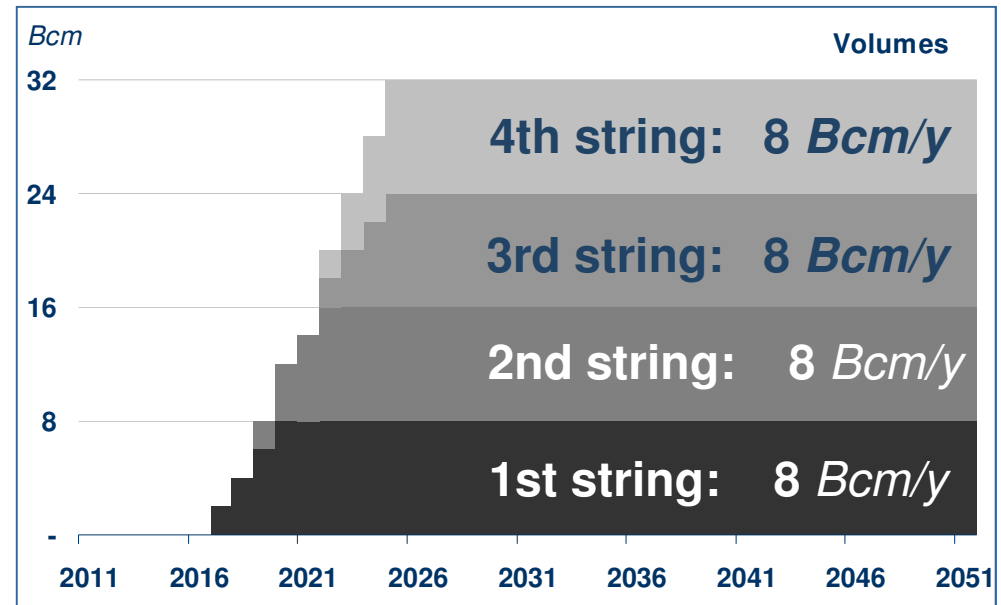
## Our work up to date co-funded by the European Commission demonstrates:

- **Market** feasibility
  - **Demand** for gas
  - **Supply** of gas
- **Economic** and **commercial** feasibility
- **Technical** feasibility  
proven ultra-deep water pipeline technology
- **Legal** feasibility  
UN Law of the Sea Convention

# The project is commercially viable and provides valuable flexibility in capacity build-up

White Stream

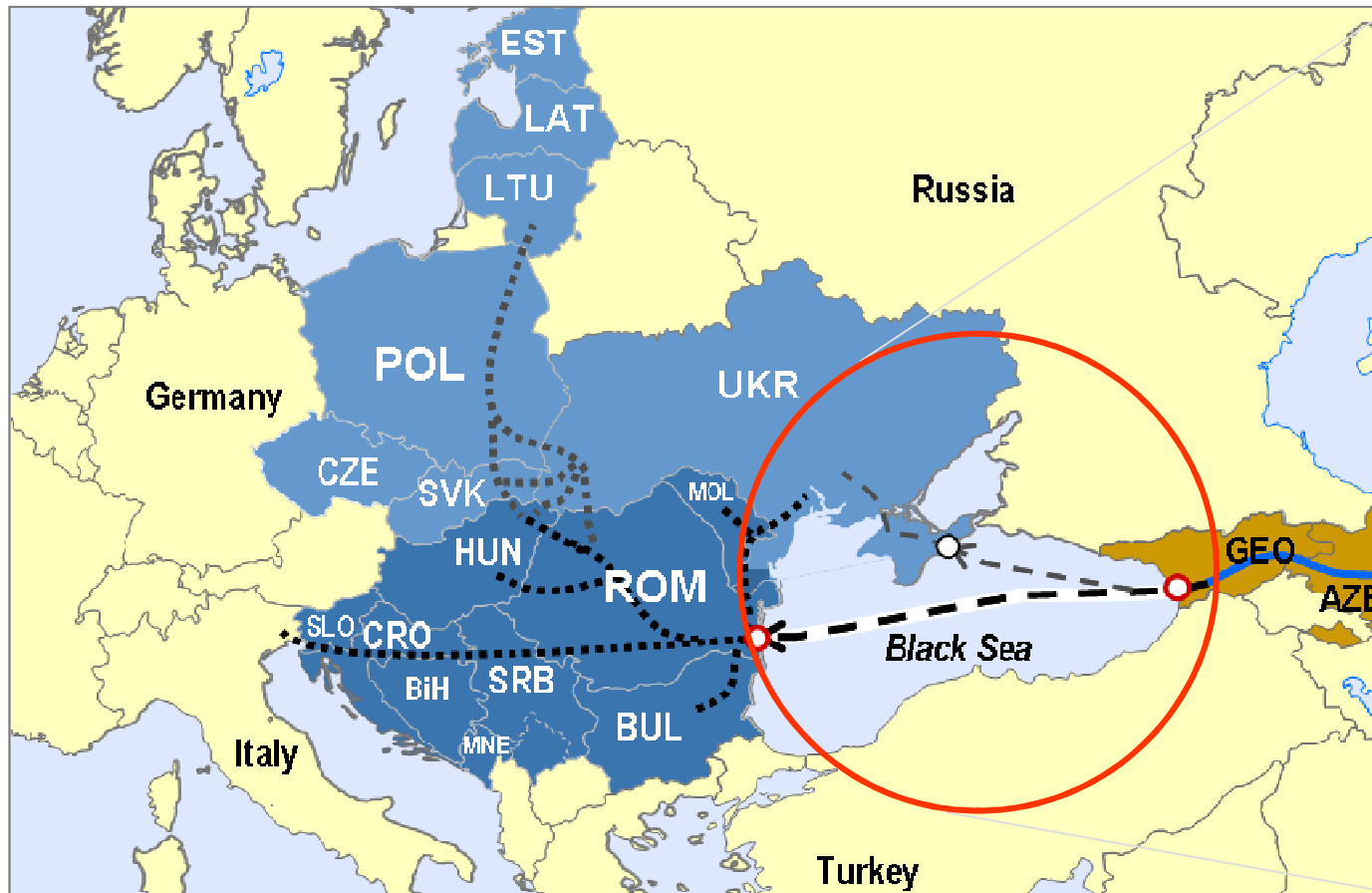
- The pipeline will be developed in stages
- The volume of gas will build from 2 to 32 Bcm/y [for comparison large power station needs ~ 1 Bcm/y]
- Capacity can be increased to meet need by adding strings
- The build schedule is flexible
- Revenue is assumed to follow volume ramp-up




➔ **Importantly, the first 8 Bcm/y stage is viable by itself**

# White Stream 1 – Georgia to Constanta

## White Stream



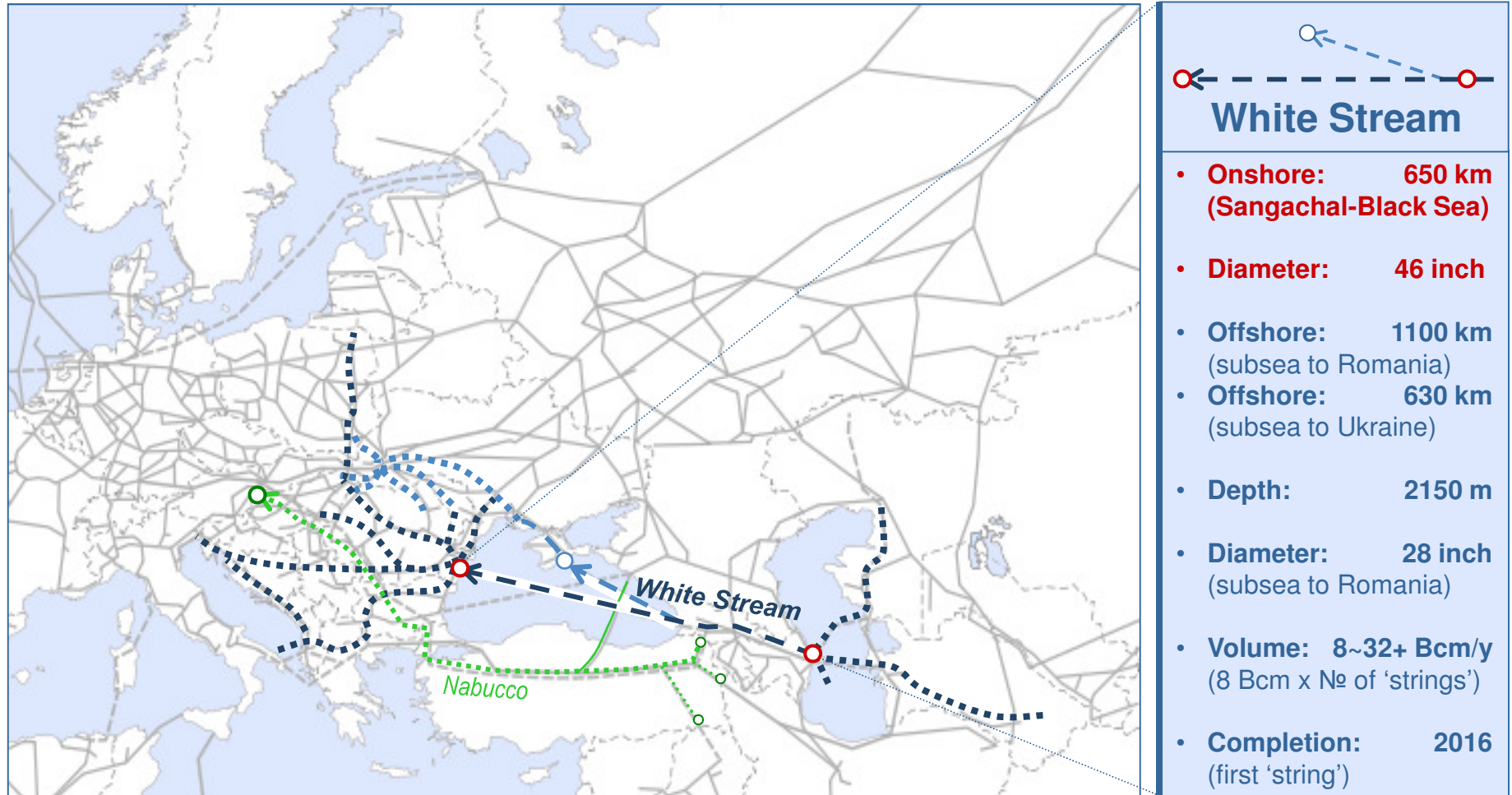
-  **White Stream**
- **Length:** 1100 km  
(subsea to Romania)
  - **Length:** 630 km  
(subsea to Ukraine)
  - **Depth:** 2150 m
  - **Diameter:** 28 inch
  - **Volume:** 8~32+ Bcm/y  
(8 Bcm x № of 'strings')

**White Stream 1 – Georgia to Constanta will not be sufficient to match current rapid development plans in the Caspian region**



# Active developments in Caspian determined the need for accelerating White Stream 2

## White Stream



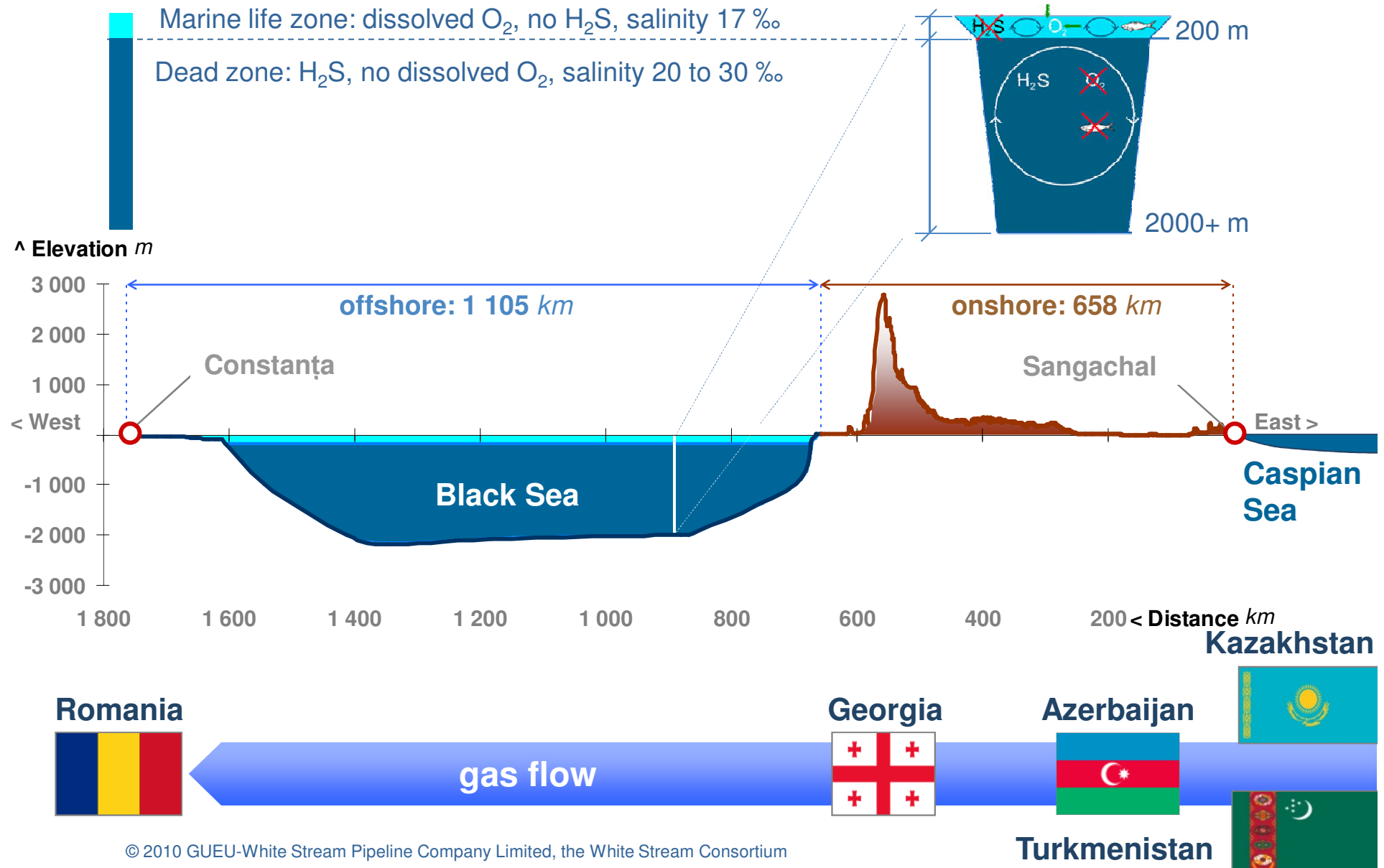
**Our decision to work on White Stream 2 (Sangachal-Constanta) earlier than its original schedule is a significant development for the Southern Corridor**



# Feasibility: Proven technology

Initial routings have been assessed

White Stream



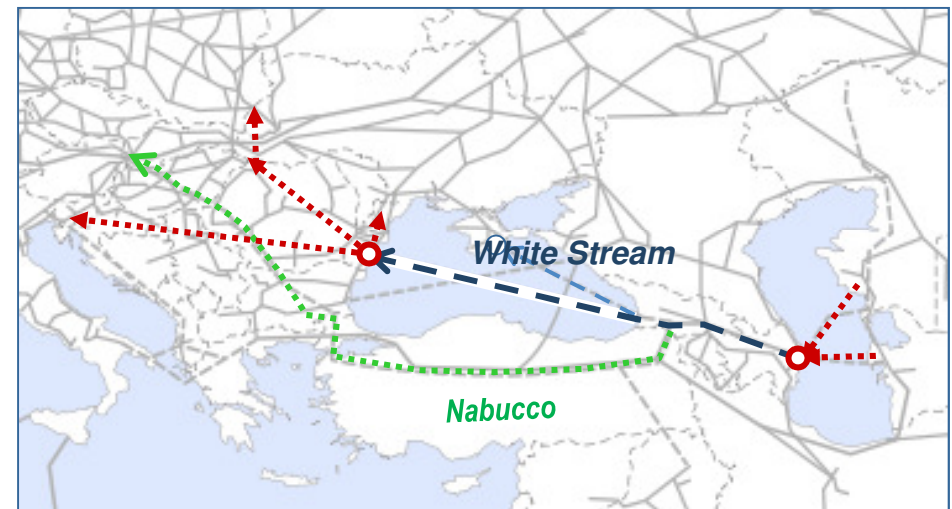
# Phased development of the White Stream pipeline project

White Stream

Deep-water proven technology dictates the phased development of the White Stream pipeline project: capacity of each separate string equals to 8bcm/year.

*The high uncertainty with gas availability magnifies the value of the flexibility and optionality inherent in White Stream.*

*Alternate option for the Black Sea crossing using **LNG** tankers was also examined but **pipeline** was found to have commercial advantage, particularly for large volumes over this relatively short distance and more importantly, pipeline option **serves much better for providing adequate confidence in security of demand, as required for success of the Southern Corridor plan.***



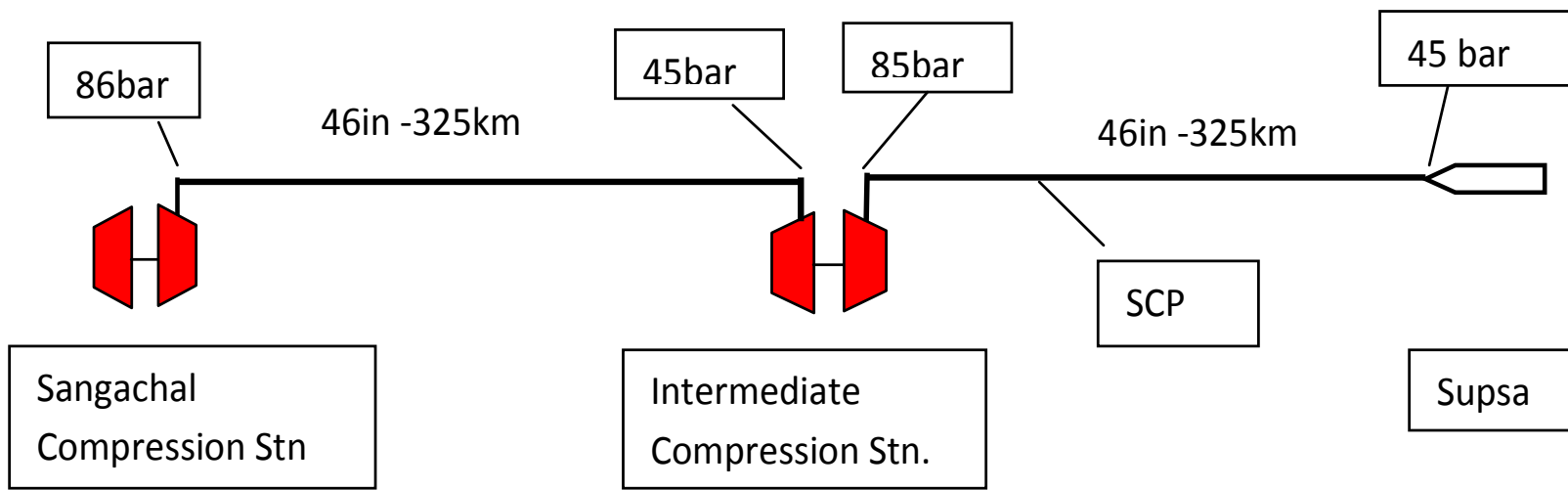
*There was numerous suggestions for White Stream to use LNG option for sea crossing. e.g. Hudson Centre article - AZERBAIJAN- REALIZING THE VISION, Zeyno Baran, January 2009, published in 'Azerbaijan Focus', but the developments in relation to BIG GAS strategy further strengthens the advantage of the pipeline option.*

# White Stream 2

## Sangachal to Supsa Pipeline Configuration

White Stream

- **8Bcm/y (supply from SCP)**  
Use 46in pipeline (SCP tie-in to Supsa)
- **16bcm/y (direct supply from Sangachal)**  
New 46in from Sangachal to SCP point & with 46in SCP to Supsa, with compressor station at Sangachal (max. delivery pressure 90barg) and one intermediate. Disconnect from SCP and tie-in with new pipeline.
- **32bcm/y (direct supply from Sangachal)**  
Second pipeline of 46 in from Sangachal to SCP point & with 46in SCP to Supsa, with expanded compressor stations at Sangachal and intermediate.





# Saipem 7000 J-laybarge

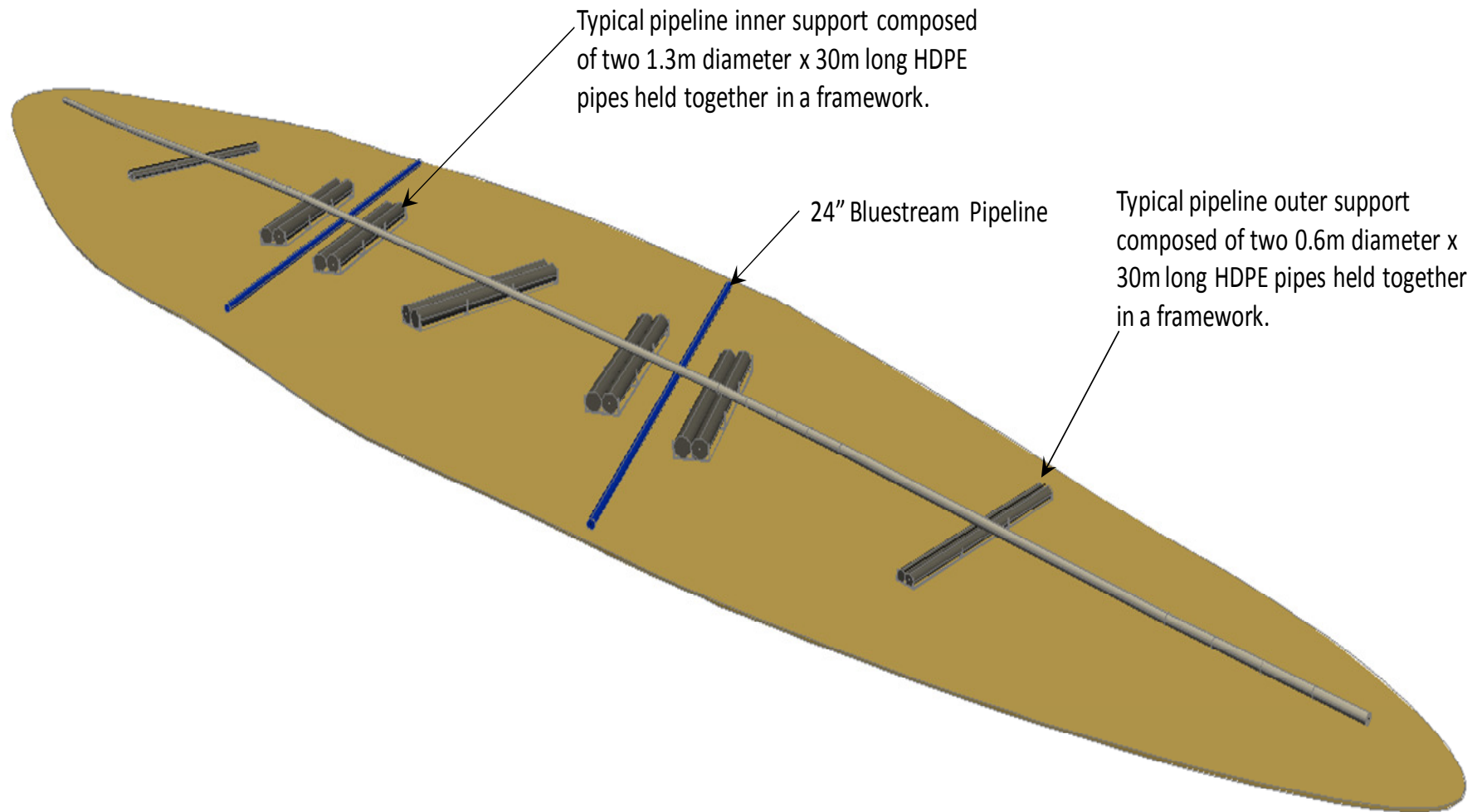
White Stream





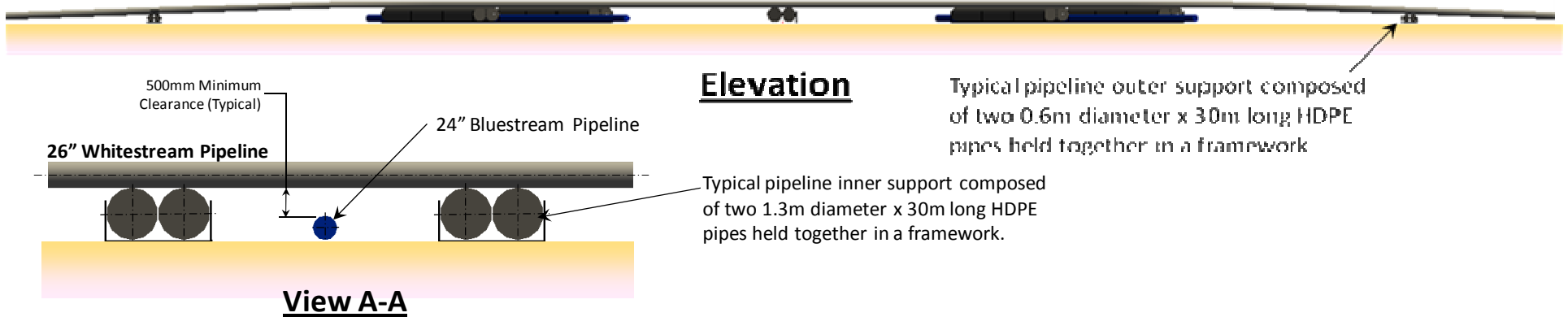
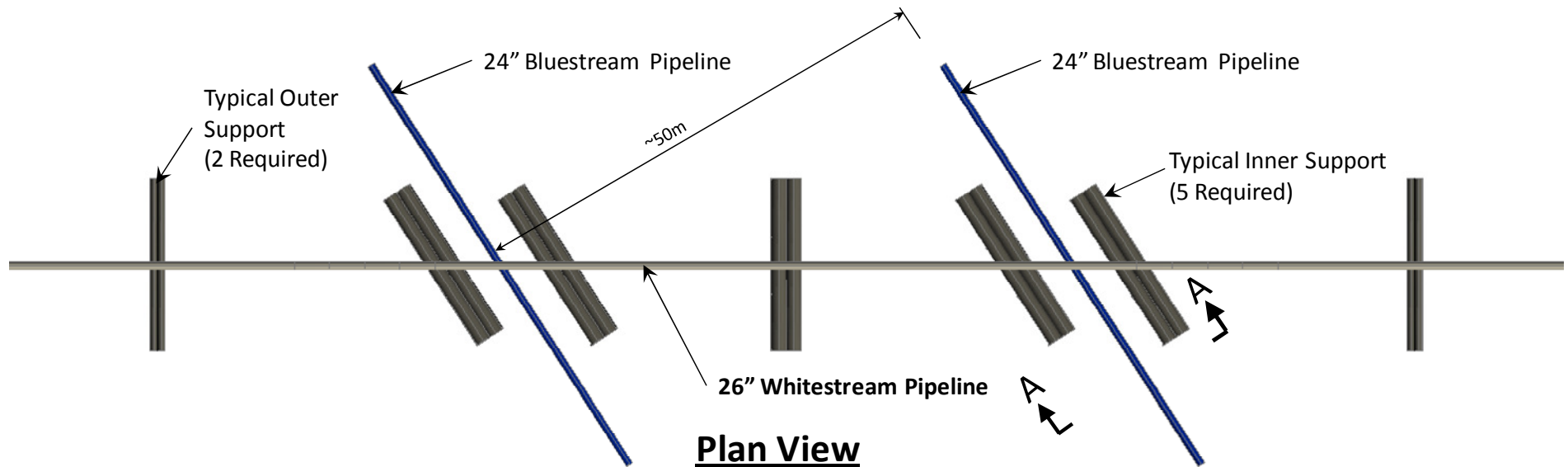
# Crossing of Blue Stream Slide 1/2

White Stream



# Crossing of Blue Stream Slide 2/2

White Stream



# There are no legal barriers to White Stream

White Stream

- International and National laws define the rights and obligations
- Precedent: Blue Stream pipeline has already crossed the Black Sea

## *Key legal issues:*

- Coastal states do not have the legal means to prevent construction and operation of White Stream
  - White Stream will enter 12 nautical mile territorial waters only at the landing points at either end of the route
  - International Law guarantees freedom to lay pipelines on the continental shelf and in the Exclusive Economic Zone
- 
- The existence of Blue Stream is not a legal obstacle to White Stream – there are many examples of submarine pipelines that cross other pipelines and cables
  - White Stream will implement international standard EIA requirements

# White Stream's political support is broad and growing

White Stream



European Union



Romania



Baltic states



Poland



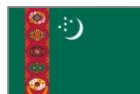
Ukraine



Georgia



Azerbaijan



Turkmenistan



US and UK



# Four more development phases to operation

Phases correspond to a milestones

White Stream

## Activities

Concept development, studies proving feasibility, EU status of Priority Project and inclusion in EU's "Southern Corridor plan", political support, development funding

Environmental scoping study,  
Route reconnaissance survey,  
mid stage funding

Environmental and social impact  
assessment, Permitting and route  
approvals, Gas supply

Gas contracts, Structured  
financing, Engineering design,  
EPC planning , procurement

Construct subsea pipelines, onshore  
pipelines, terminals, commissioning

**we are here:**





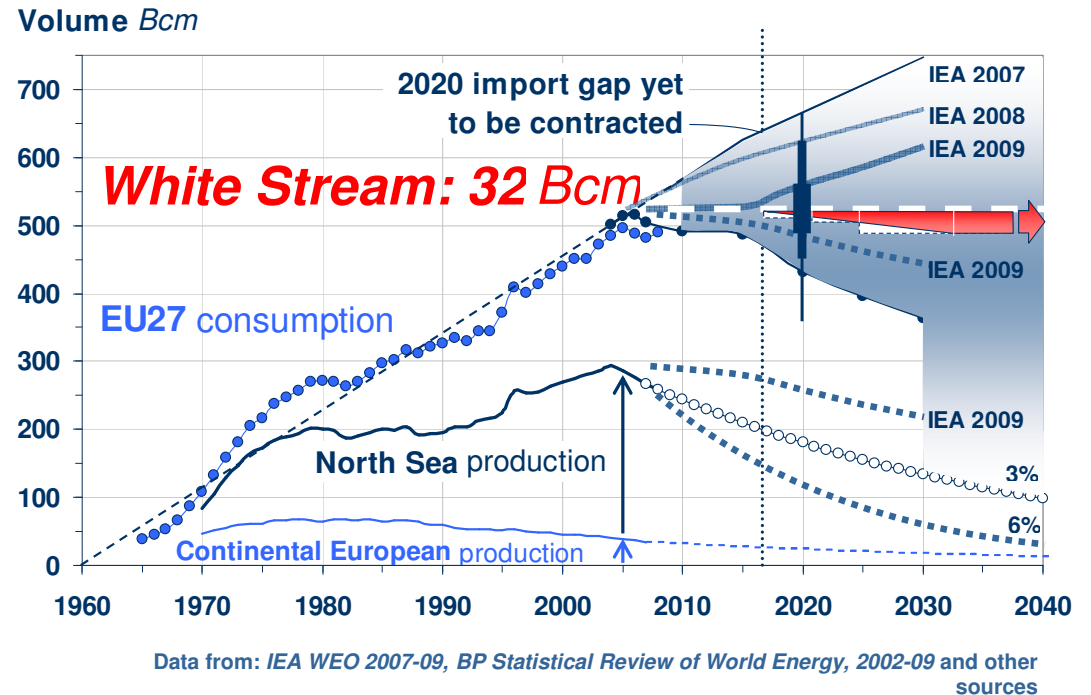
White Stream

## How White Stream helps

# The EU needs to replace declining production and meet new demand growth

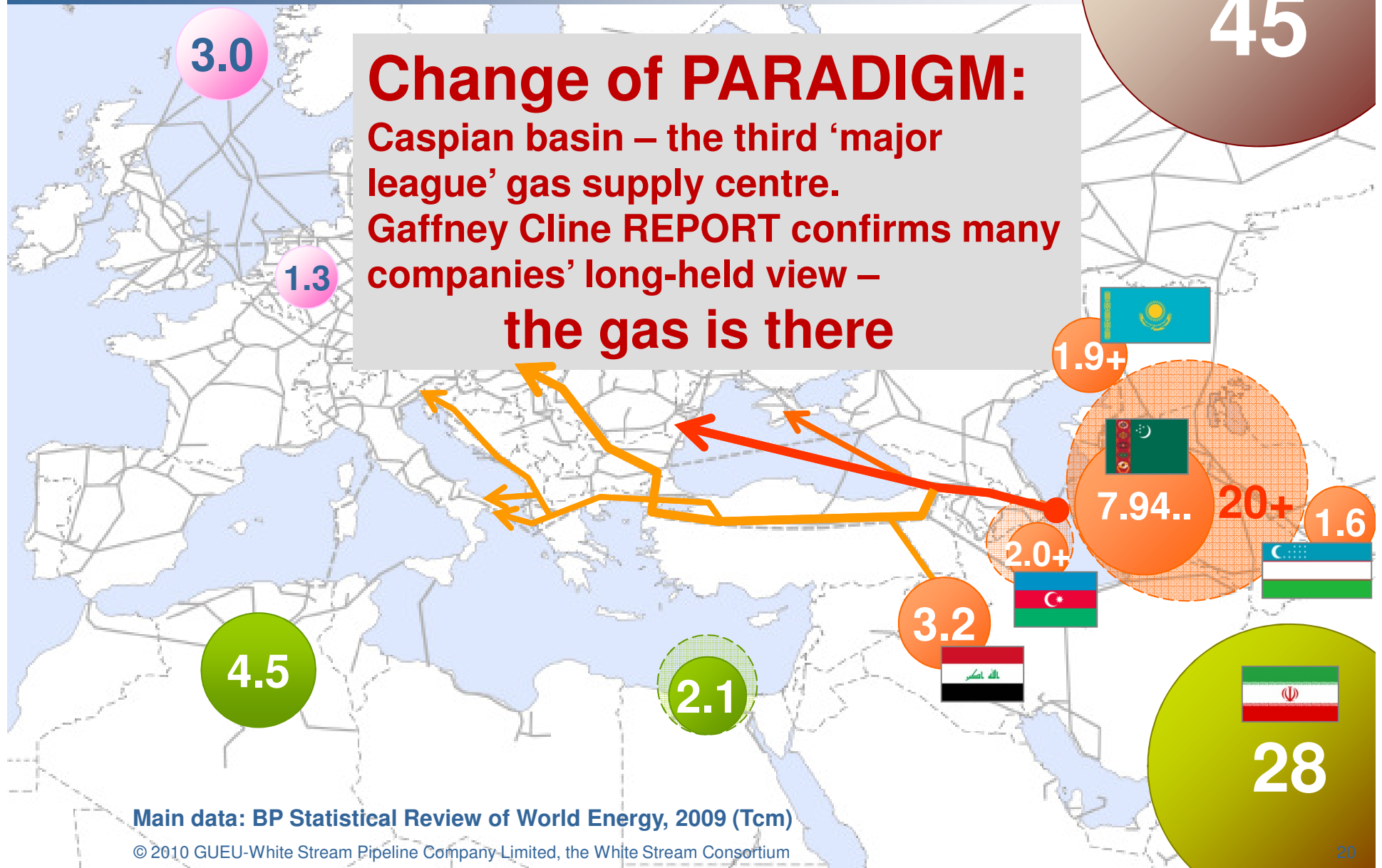
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**The future gas import gap is highly uncertain, but certainly very large**



⇒ There is a growing need for additional gas from new supply routes to the EU

# Reserves and resources to supply EU's Southern Corridor are huge





## And what is the scale of gas import EU seeks from the Caspian Region?

White Stream

**EU targets strategic magnitudes in developing gas trade with the Caspian Region. After Russia-Ukraine gas crisis and Russia-Georgia war EU's interest in securing a large amounts from the Southern Corridor started to take shape faster:**

'CDC's aim will be ultimately to bring 60bn-120bn cubic metres of gas per year to the EU – equivalent to 12-25 per cent of European consumption today'

**FT on EU's 'strategic energy review' and 'Caspian Development Corporation' (CDC)- 2008, November 13**

'The European Union's overall goal is to obtain some 10 percent of the gas it burns, or roughly 60 billion cubic meters per year, from the Middle East and Central Asia by 2020'

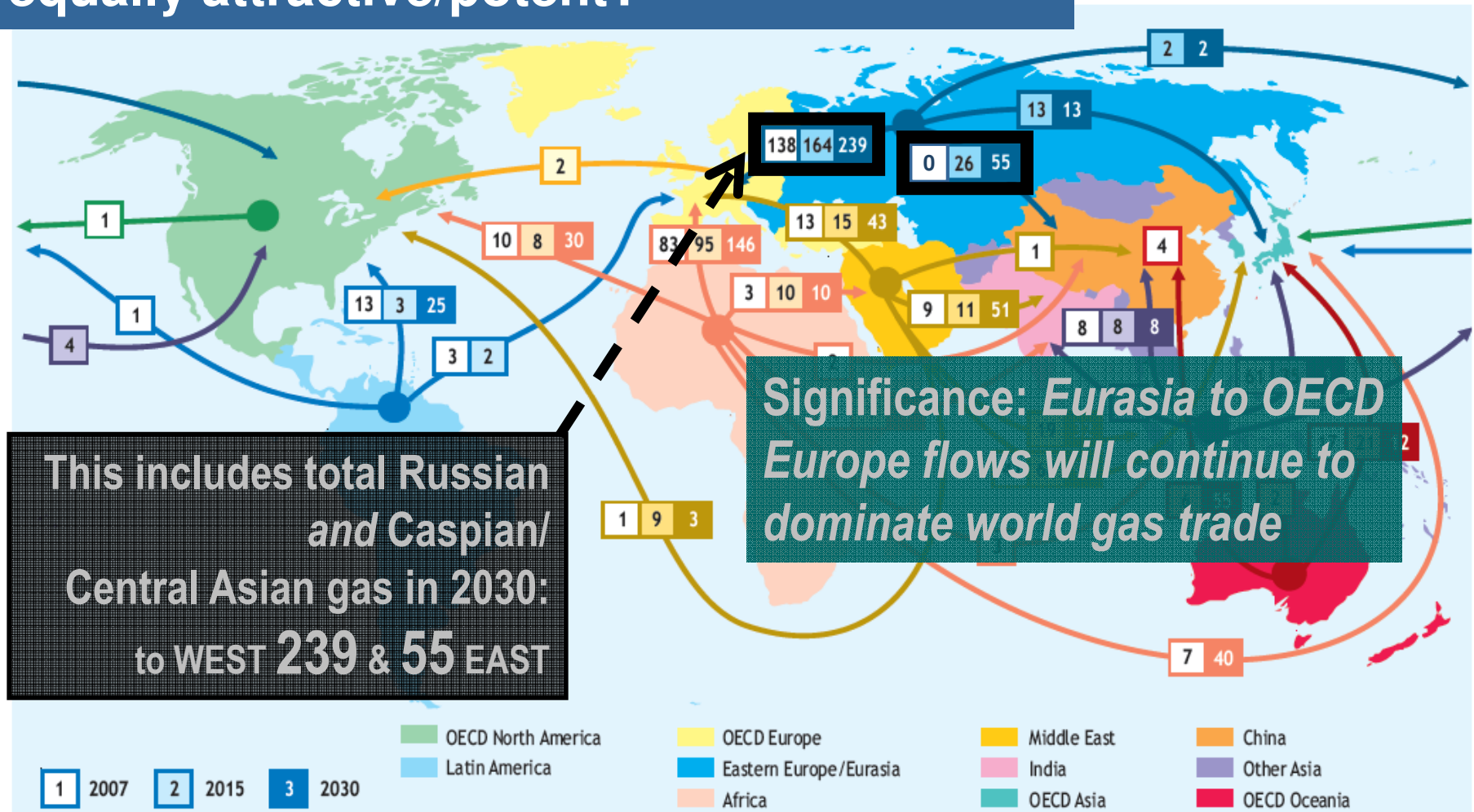
**Deutsche Welle on Prague 'Southern Corridor' Summit – 2009. May 8**

'A variety of gas supplies could feed into these pipelines.., however a key initiative would be the making of a large offer (**30-40 bcm for many years**) to buy gas from Turkmenistan, to be sent across the Caspian Sea'

**EU-Central Asia Monitoring (EUCAM) final report – 2010, February 22**

# Is EU's gas market a desirable destination for Caspian Countries? Are other markets equally attractive/potent?

White Stream



IEA, World Energy Outlook 2009, Figure 12.5, p435, © OECD/IEA 2009

IEA World Energy Outlook 2009 Reference Scenario, 2007, 2015 and 2030  
Net inter-regional natural gas trade flows between major regions (Bcm per year)

© 2010 GUEU-White Stream Pipeline Company Limited, the White Stream Consortium

# What kind of pull is needed?

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- There is a genuine interest in the Region to trade with the EU and huge potential for such trade
- There is a growing demand in Europe and acknowledged desire to establish such trade

**but the axiom is that ... gas needs to be pulled**

An integrated approach embedded in the EU's Southern Corridor plan is designed to provide the needed pull through implementation of both specifically elaborated strategies: **BIG GAS** and **Effective CORRIDOR**

# Two key strategies break this deadlock

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The **Southern Corridor plan** includes both key strategies that needed to open up Caspian gas to western investments and westward export directly to the European gas market

**1 BIG GAS strategy** – by stressing its aim to buy **large** import volume from Caspian (90 Bcm/y or more) EU reduces barriers hindering the development.

**2 Effective CORRIDOR strategy** - by stressing its aim to develop all key projects of the Southern Corridor EU reduces the perceived transportation risks for the Caspian producers and enables decisions on trans-Caspian crossing and new PSAs with western companies.

Upstream investments are huge and risky. Caspian producers will want to export through both Nabucco and White Stream. The EU's Southern Corridor plan includes support for both Nabucco and White Stream

# Europe's Southern Corridor plan: an integrated approach

White Stream

*‘As you know, several projects make up the Southern Corridor, including Nabucco, the interconnector between Turkey, Greece, Italy and White Stream.’*

— **Fabrizio Barbaso**

Deputy Director General DG TREN  
European Commission

**Bucharest 1<sup>st</sup> October 2009**

[www.acus.org](http://www.acus.org)





# A successful Caspian gas strategy: BIG GAS offer

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If Caspian countries are expected to decide on allowing western companies for E&P and support westbound projects, they will need to see that potential exports to Europe are sufficiently high and capable of providing a significant part of their future revenues.



**... otherwise it will be difficult for them to get engaged in the complex process not favored by some of the established partners**

**CDC – conceived by Commission as a component of the Southern Gas Corridor would be able to suggest such expanded offer**

# Concurrent development of White Stream with Nabucco

White Stream

**Nabucco, the flagship of the Southern Corridor**, if taken separately, is not enough, to either make a real difference to EU energy security or to enable large upstream investments, particularly in Turkmen onshore fields

***Security and continuity of demand*** is an important factor for Caspian region governments and for potential upstream investors.

The ***concurrent*** development of White Stream with Nabucco offers producers and exporters such ***security of demand***  
Therefore the projects are ***mutually reinforcing***





## European co-ordinator: components of the Southern Corridor are mutually reinforcing

White Stream

- “**White Stream**, Nabucco, TAP and ITGI ... are **mutually reinforcing** if combined with the integration of isolated networks ...”
- “I therefore welcome the ... [TEN-E funded] study on **White Stream**. I am especially intrigued by the prospect of developing a direct sub-sea route **from Georgia to Romania** and then overland to Italy (along the **Pan-European Oil Pipeline Route**).”

— **Jozias Van Aartsen**, *Activity Report* Feb 2009

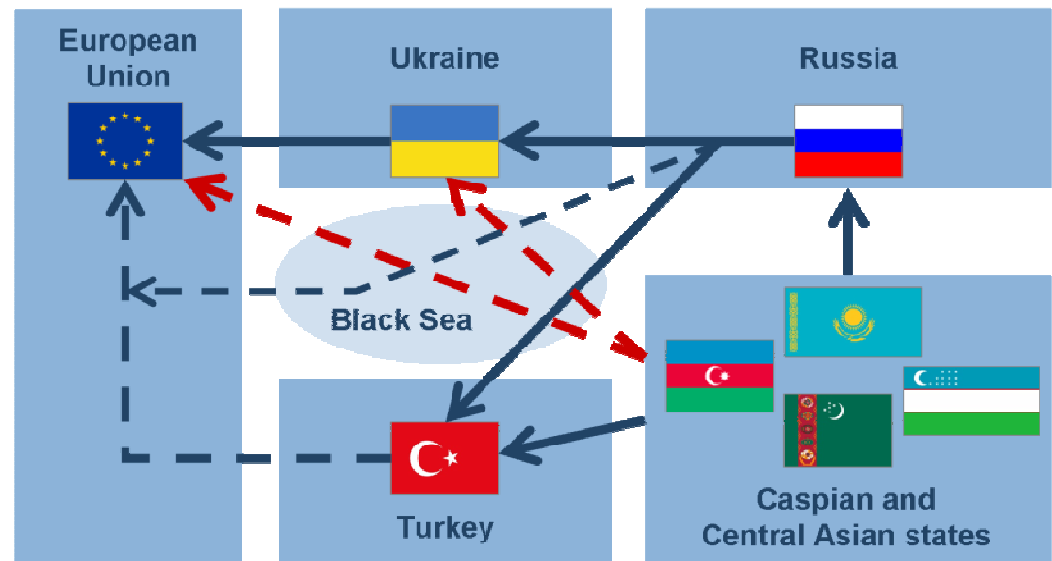
**‘Turkey had earlier bargained toughly (some said destructively). The EU’s quiet expression of interest earlier this year in White Stream... may have changed Turkish minds.’**

*‘The Economist’ on signing of Nabucco IGA, Jul 16th 2009*

# White Stream will facilitate a beneficial balance between major gas market players

White Stream

- **The Nabucco Inter-Governmental Agreement (IGA)** was recently ratified by parliaments of signatory countries. This is a very important step forward for Nabucco and the whole Southern Corridor plan: this achievement is expected to **accelerate the progress** with other essential components of the Southern Corridor - necessary for meeting requirements on the level of gas **import volumes** and **transportation risks**
- **No producer wants to depend on only one, large, transit country** - Central Asian players will not feel secure to be dependent on Turkey any more than Russia likes to depend on Ukraine



# Failure of previous TransCaspian Pipeline project to export Caspian gas to Europe

White Stream

A decade ago a chance to develop an export route to Europe for large volumes of Caspian gas failed: alignment of interests among key players could not be achieved.

- *November 1999: Framework declaration signed between Turkmenistan, Azerbaijan, Georgia and Turkey for supply of Caspian gas to Turkey and Europe*
- *September 2001: Construction of Blue Stream started for supply of Russian gas to Turkey*
- *October 2002: Blue Stream offshore pipe laying completed*
- *The TransCaspian gas pipeline was never built.*

Caspian producers will gain significantly greater confidence in security of exports with White Stream providing a direct and additional pipeline route to Europe. And alignment of interests is intrinsic for the Southern Corridor plan.



# Development of Caspian and Central Asian gas still faces the 'chicken-and-egg' problem

White Stream

## The routes to EU market have not yet been constructed:

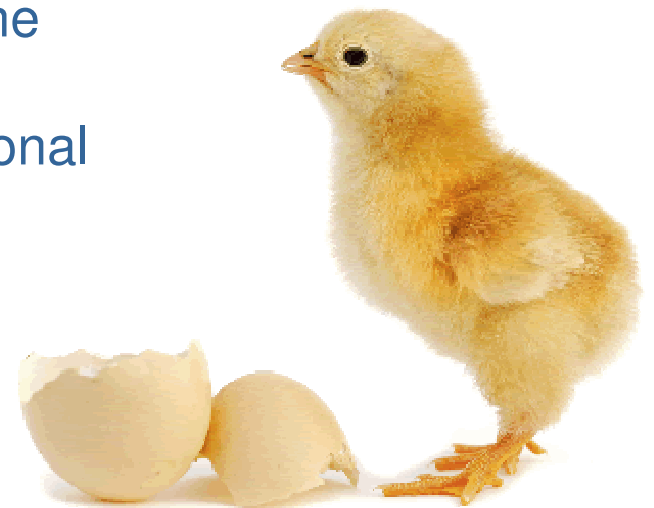
- A pipeline through Turkey, Bulgaria, Romania, Hungary and Austria was first proposed in 1996 (later became Nabucco)
- TCGP failed despite expectations

Caspian producer countries would always prefer to export directly to EU markets **...if possible...**

... but without **guarantees of large volumes** of sales and the security of **diverse export routes** the Caspian producers:

- may not afford to turn away from their traditional markets
- may not support investments in upstream production for Europe

... and without assured upstream investment routes to market will not be built

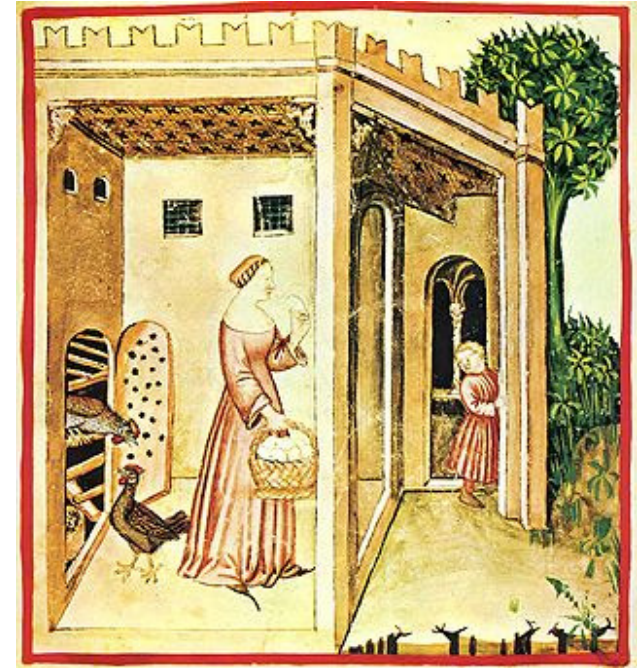


# Creating a virtuous circle

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## The Southern Corridor as an integrated whole provides the solution

*The synergy of White Stream and the CDC with the Turkish transportation loop is targeted to overcome the dilemma by stimulating upstream investments in the Caspian region, as well as pipelines across the Caspian Sea*

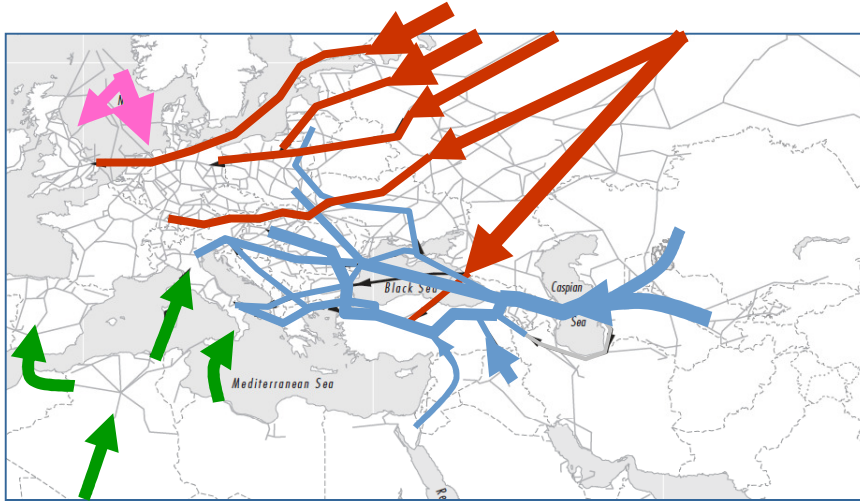


**Concurrent success with all key components is breaking the cause and-consequence cycle that was hindering progress on the commercially and strategically important EU-Caspian Basin gas trade**

# There are two main scenarios for future Eurasia – EU gas trade flows

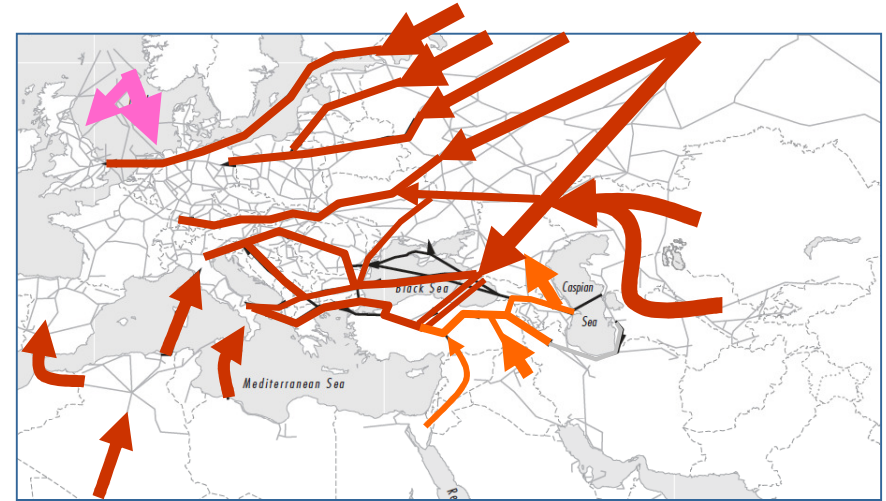
White Stream

## The EU Southern Corridor vision



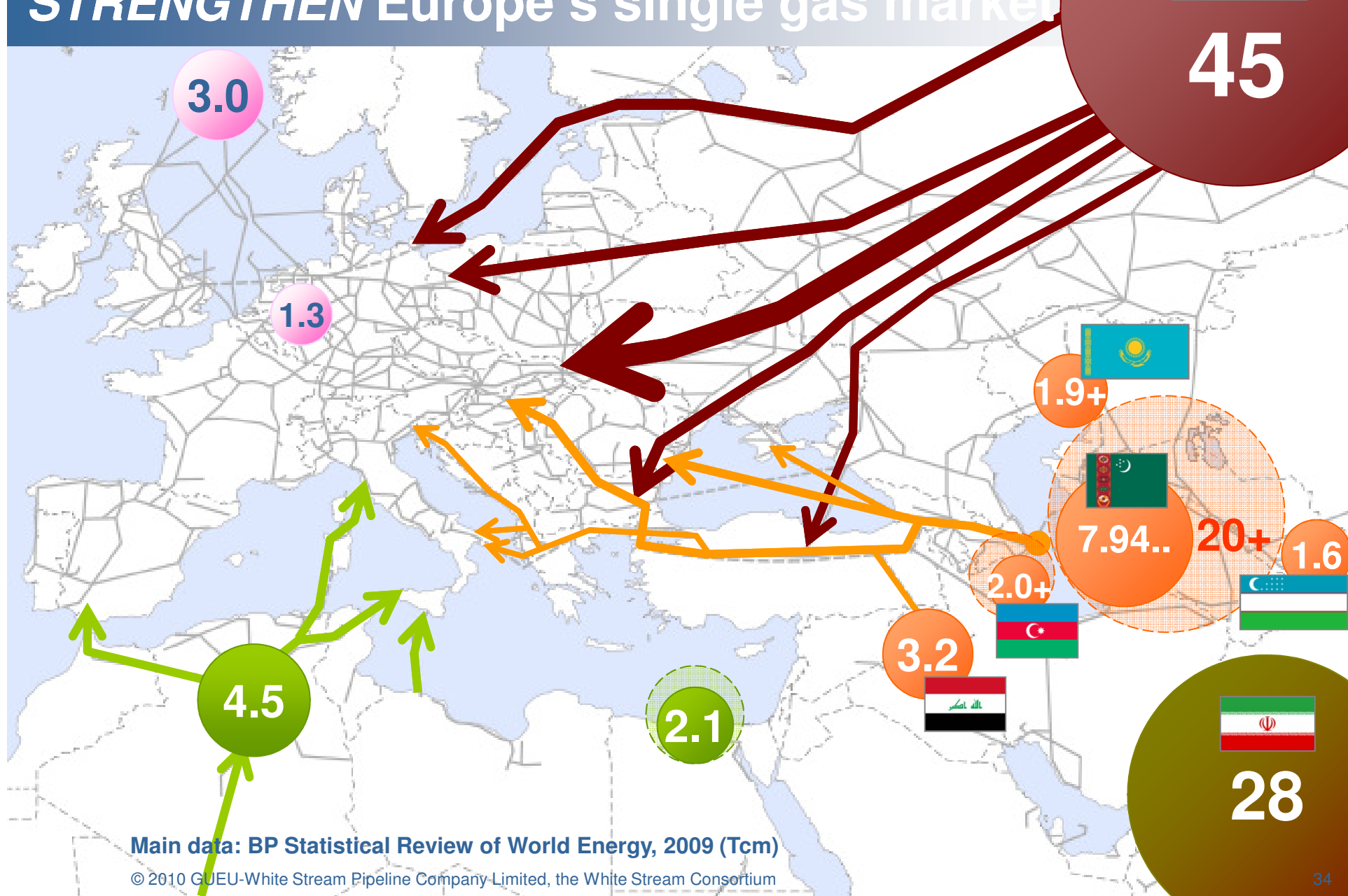
- A mutually reinforcing set of pipelines in the Southern Corridor diversifies gas sources *and* routes
- This helps balance the dominant supplier's commercial position, particularly in Central and Eastern Europe
- Along with North African and North Sea gas plus LNG, the security of supply is bolstered and EU gas market competitiveness is enhanced

## Eurasia Without Southern Corridor

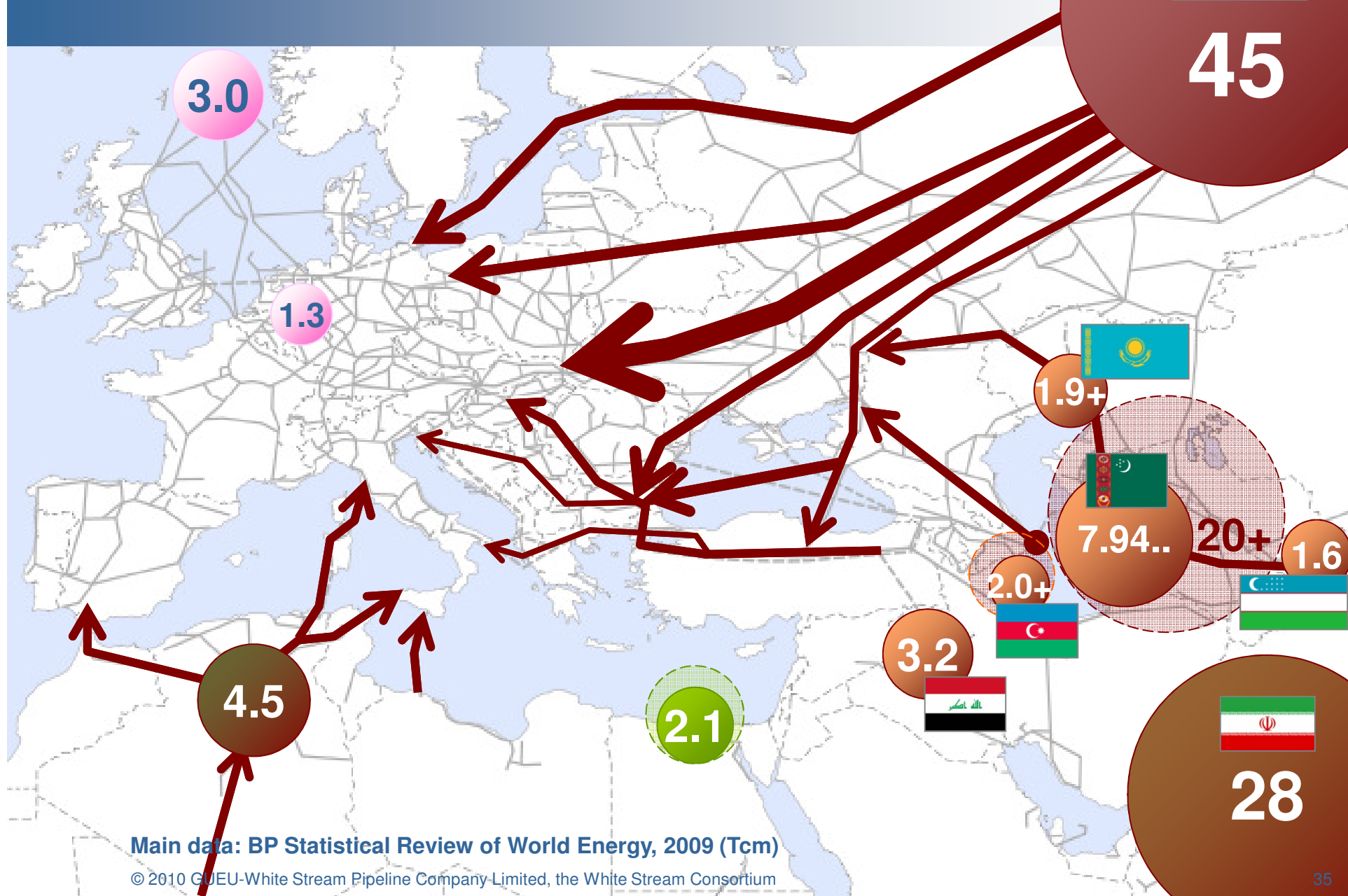


- The dominant supplier controls all sources and pipeline routes to Europe from the east
- Monopoly transit from the south-east severely limits the flows from the Caspian via Turkey
- Central and Eastern Europe 100% dependent on the dominant supplier for gas imports
- Fully independent sources become limited to declining indigenous and North Sea gas plus LNG, which are least effective in providing diversity for Central and Eastern Europe

# The EU Southern Corridor vision will **STRENGTHEN** Europe's single gas market



# Without Southern Corridor





# East-West Energy Corridor pipelines paved the way for Caspian Gas to Europe

White Stream

**The three success stories from the East-west corridor prove:**



**that market-transforming pipelines can be built**



# Europe's gas supplies from Russia and the Caspian will supplement each other

White Stream



White Stream will facilitate a beneficial balance between major gas market players

White Stream

Market

Major transit

Major sources

