

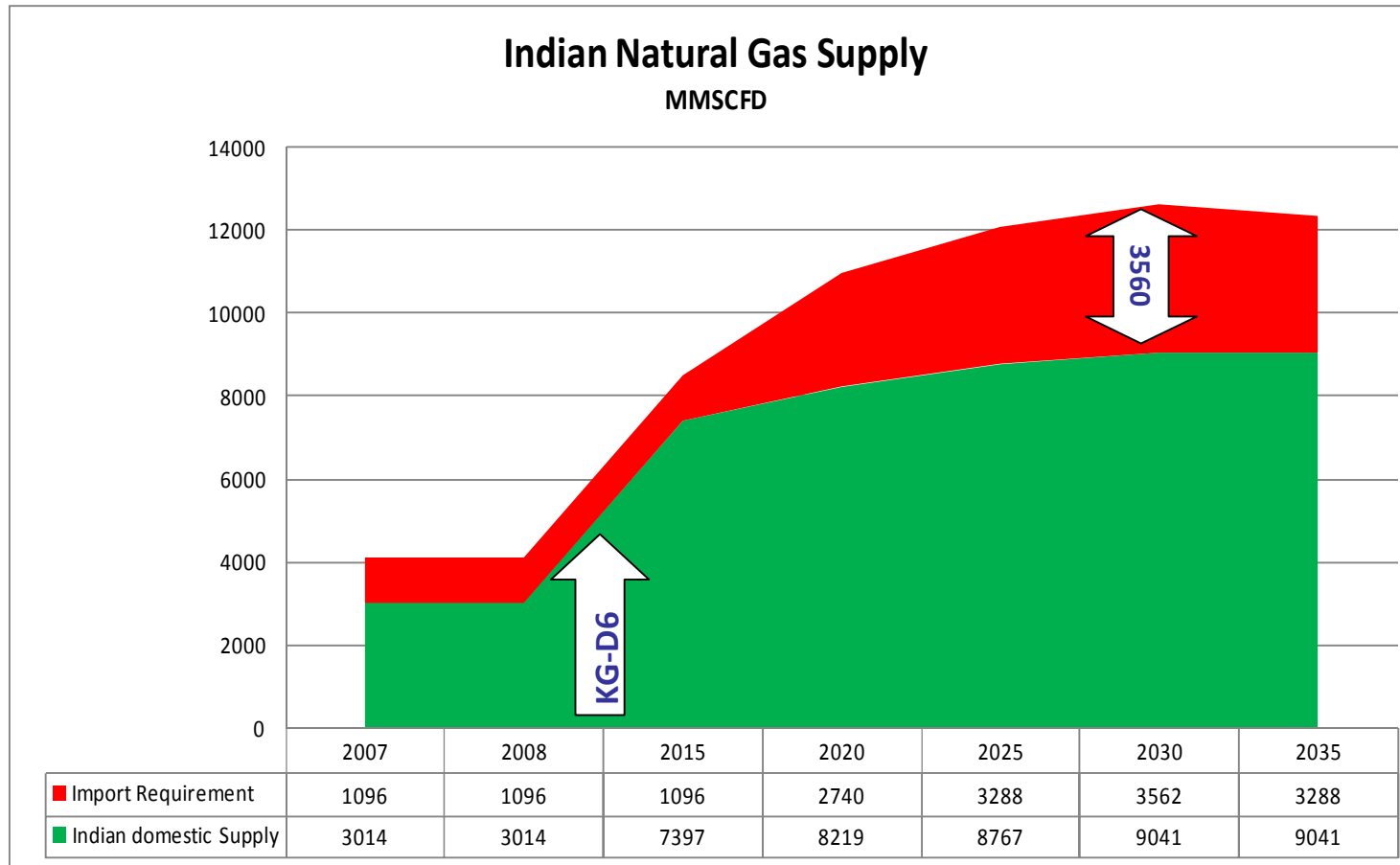
# **World Petroleum Congress - Cross Border Pipelines - MEIDP Doha**

**December 2011.**



Middle East to India  
Deepwater Pipeline

*"A project whose time has come"*

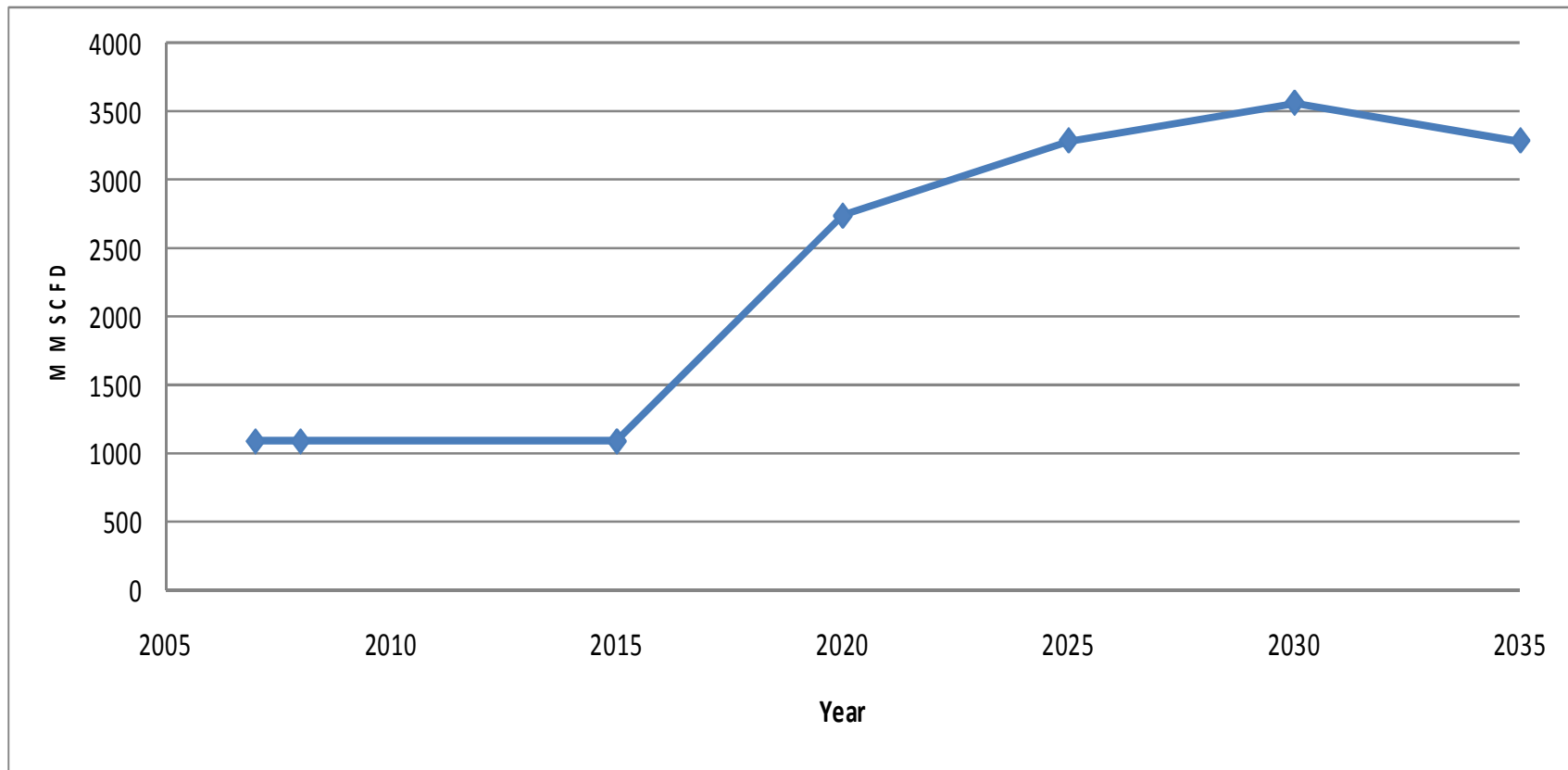


*U.S. Department of Energy, DOE/EIA-0484(2010)*

# Indian Natural Import Requirements



*Projected Gas Import Requirements (MMSCFD thru 2035)*

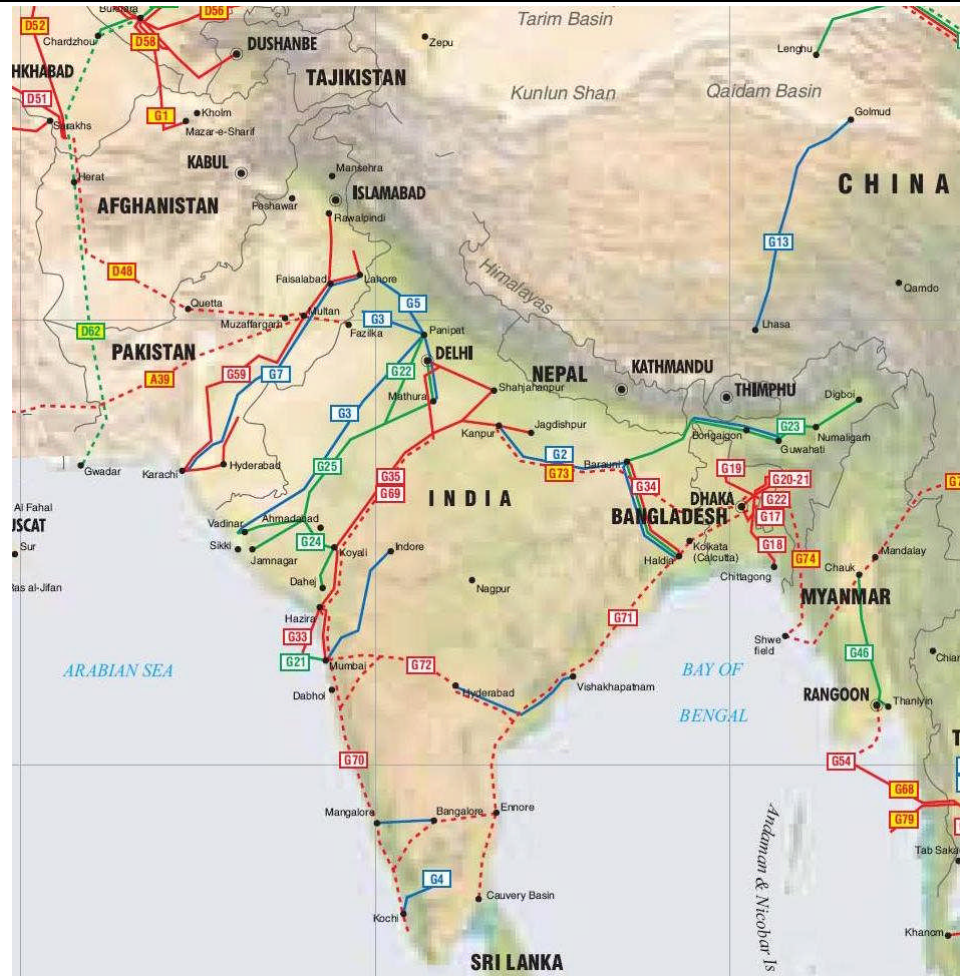
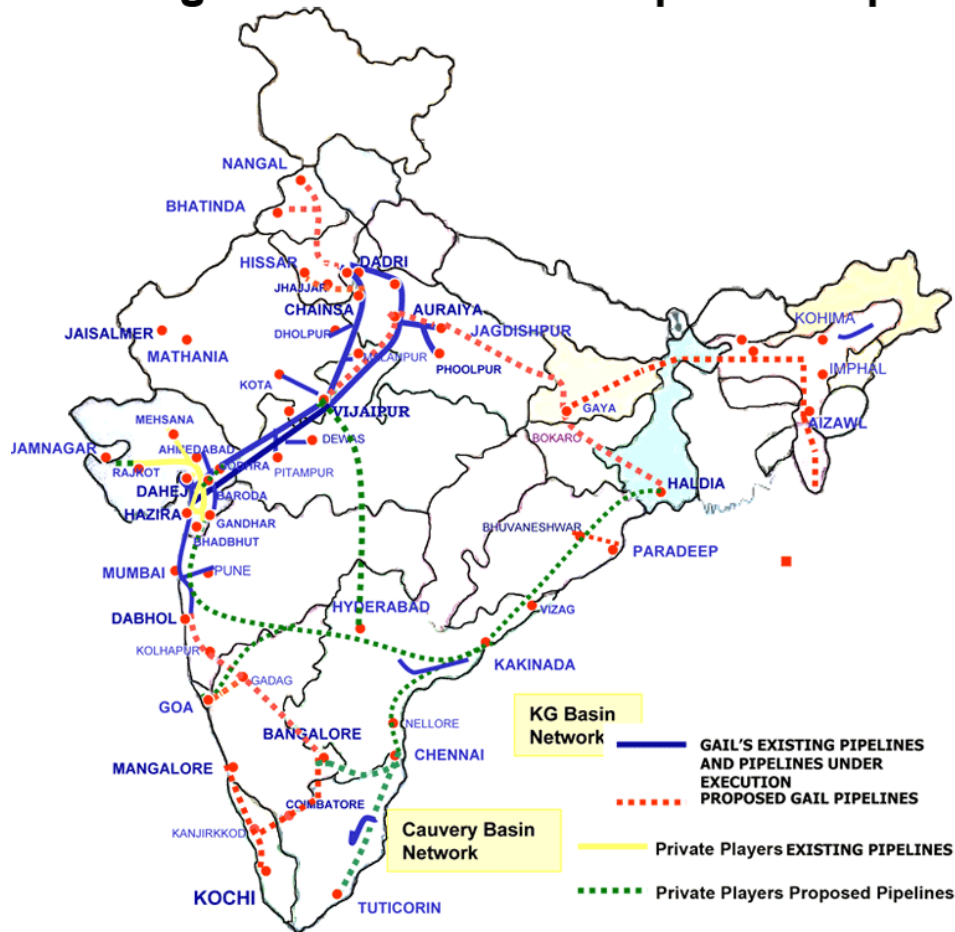


U.S. Department of Energy, DOE/EIA-0484(2010)

# Indian Gas Network



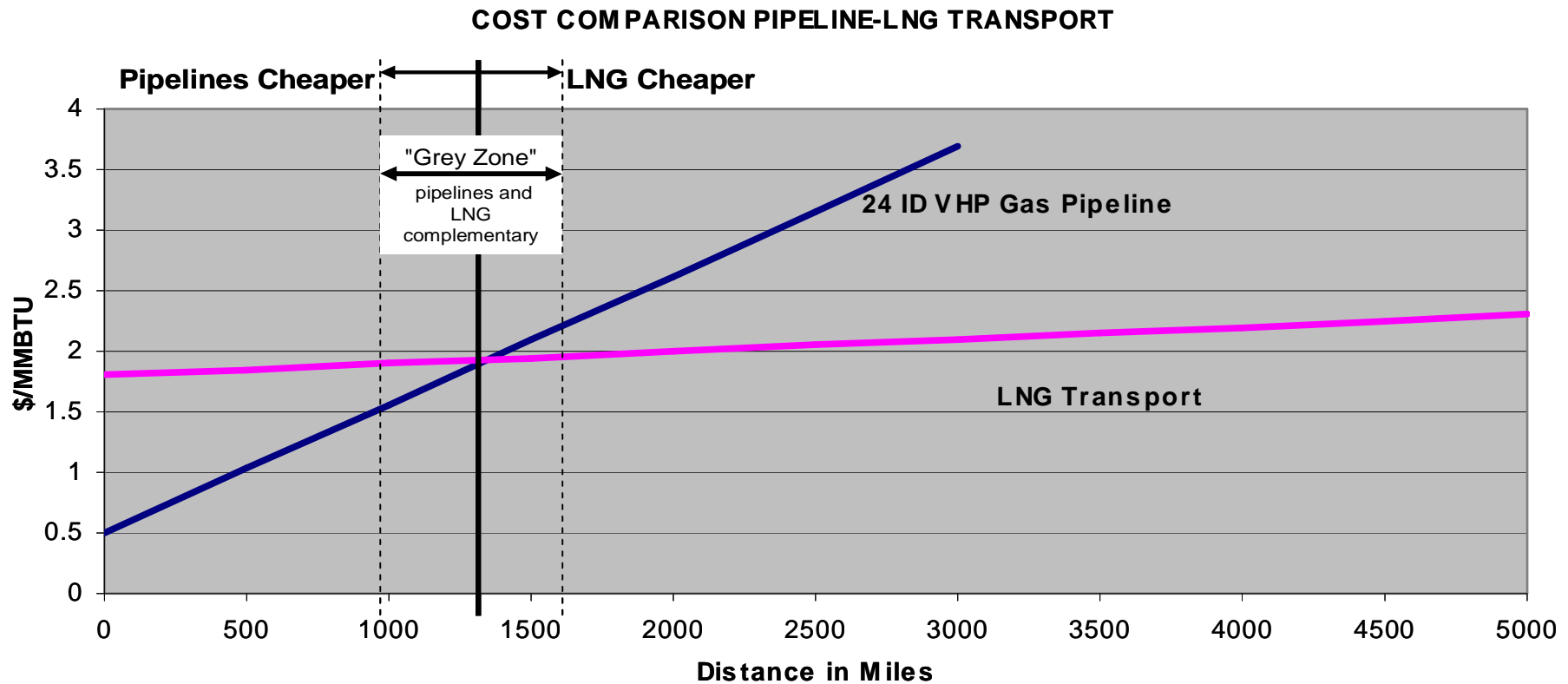
## Integrated Natural Gas Pipeline Map



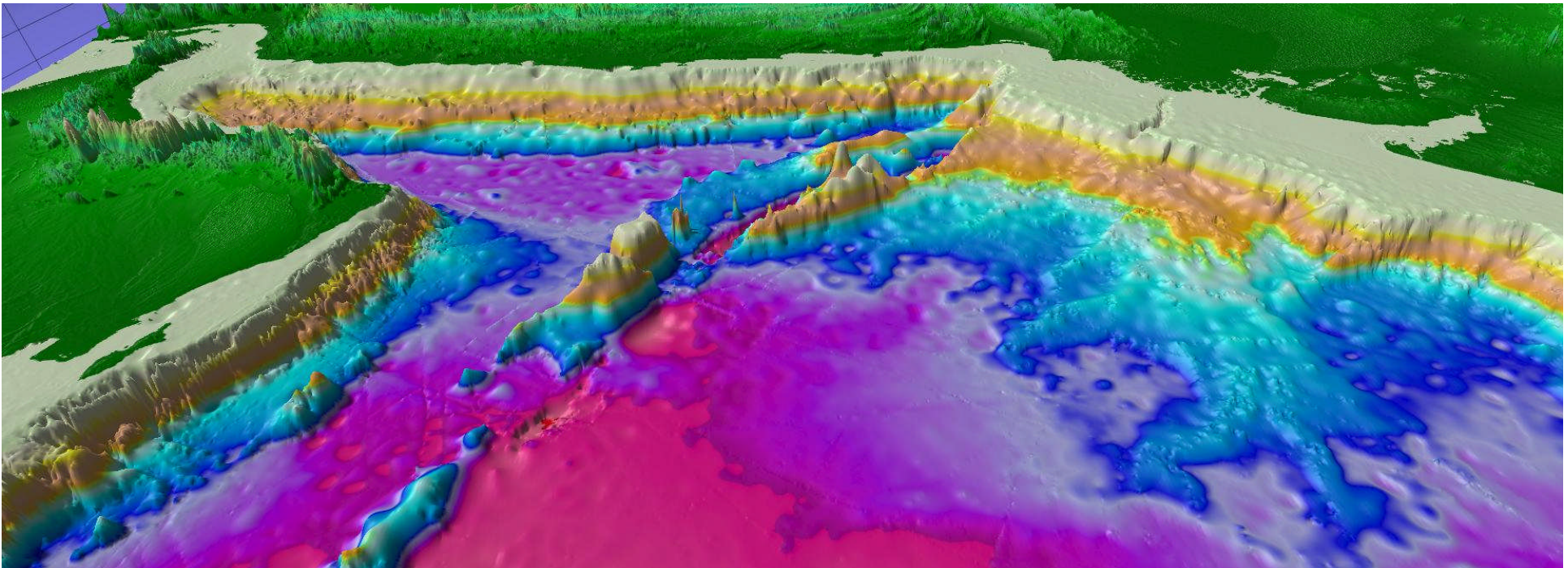
<http://pptfree.com/indiaoilgas/omc/gail-pipeline-network-map.html> [http://www.theodora.com/pipelines/south\\_asia\\_pipelines\\_map.jpg](http://www.theodora.com/pipelines/south_asia_pipelines_map.jpg)

## Indian Natural Gas Infrastructure

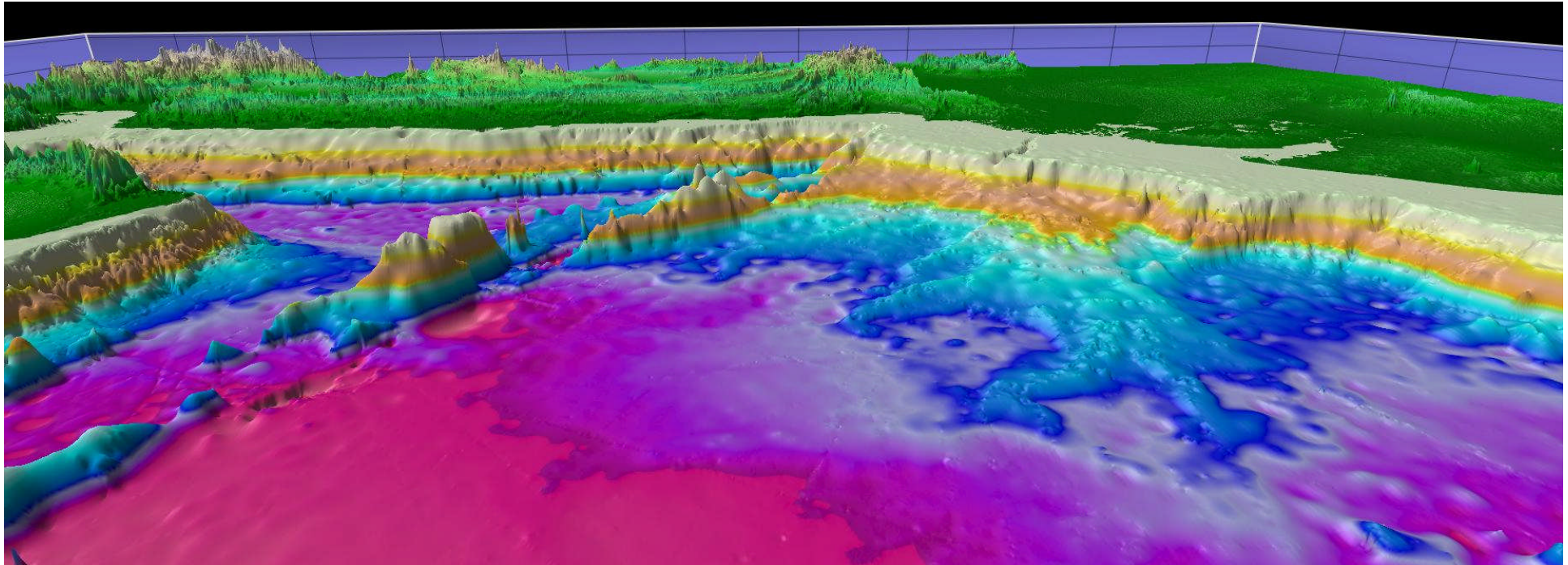
## Pipelines are more economic than LNG for transportation distances below 1200 miles







- Arabian Sea 1

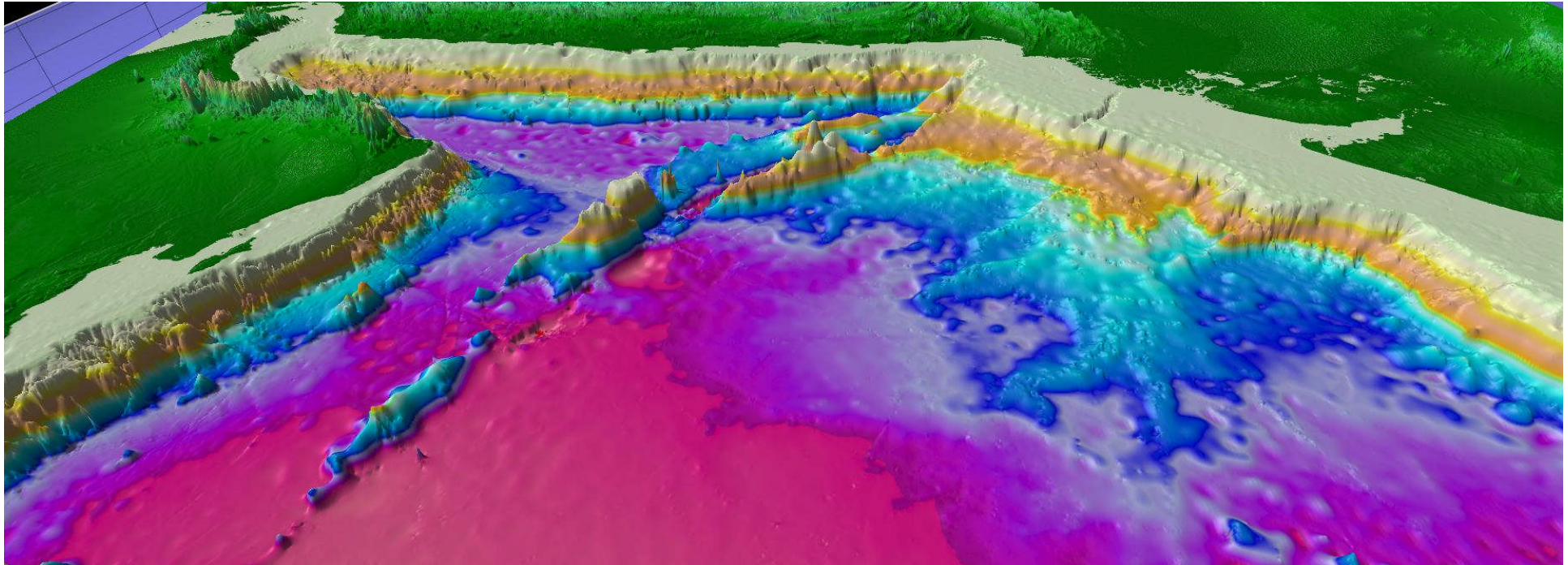


- Arabian Sea 2

January 2009

Proprietary to South Asia Gas  
Enterprise PVT Ltd (SAGE)



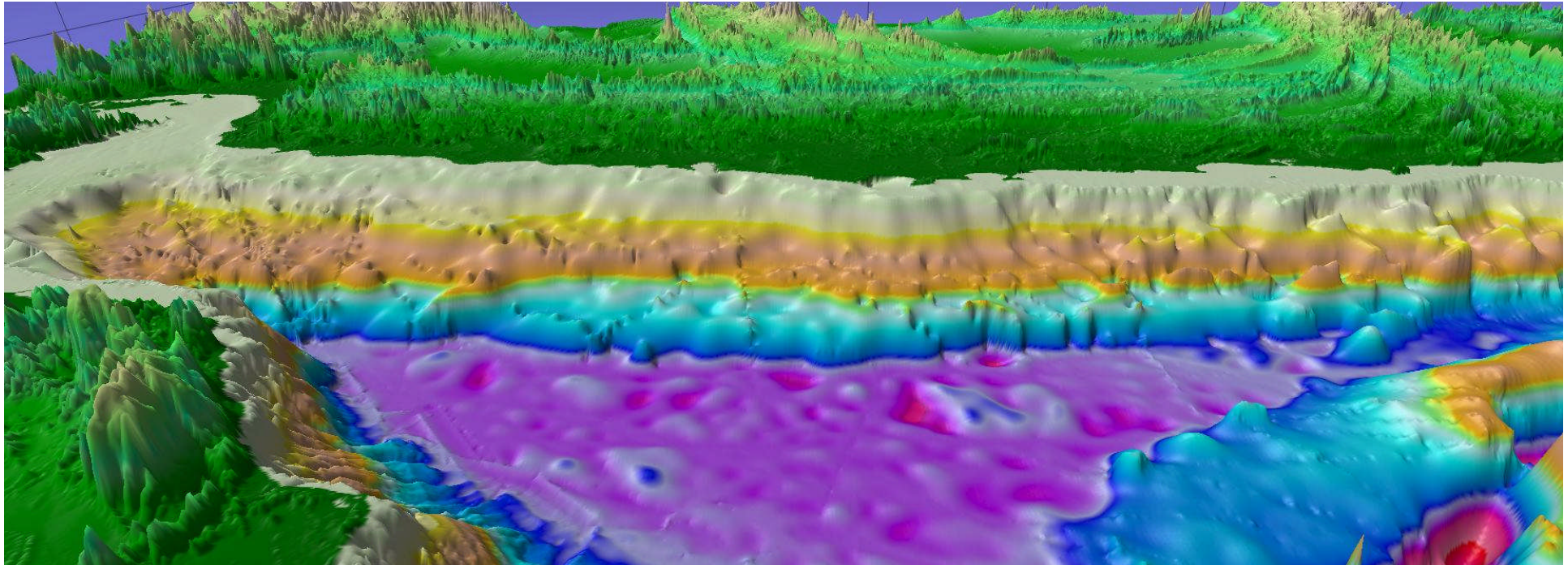


## ■ Arabian Sea 3

January 2009

Proprietary to South Asia Gas  
Enterprise PVT Ltd (SAGE)

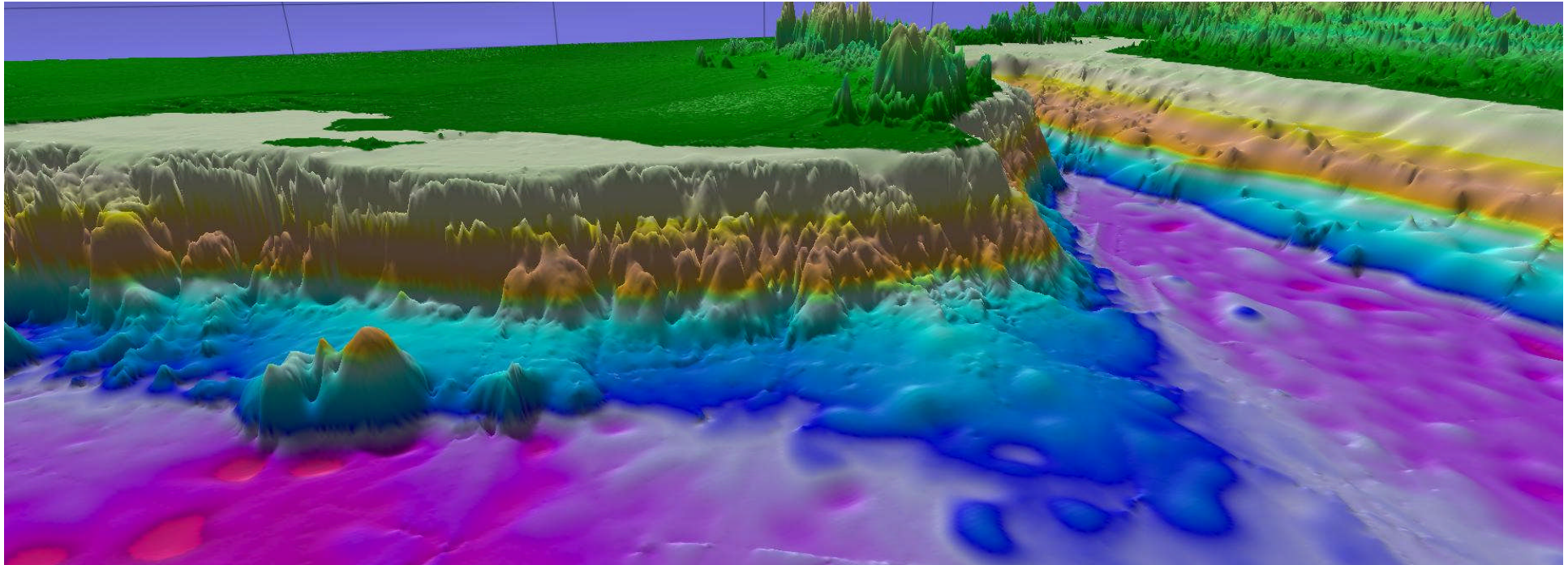




## ■ Iranian Coast

January 2009

Proprietary to South Asia Gas  
Enterprise PVT Ltd (SAGE)



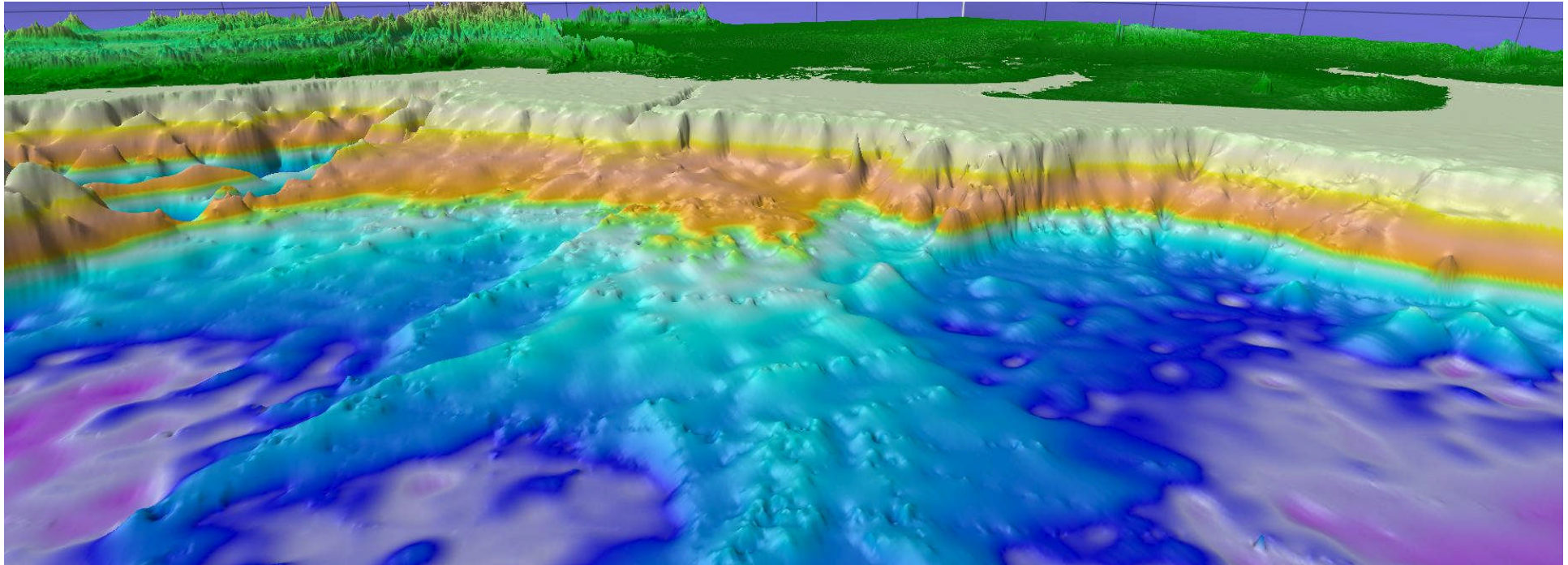
## ■ Omani Coast

January 2009

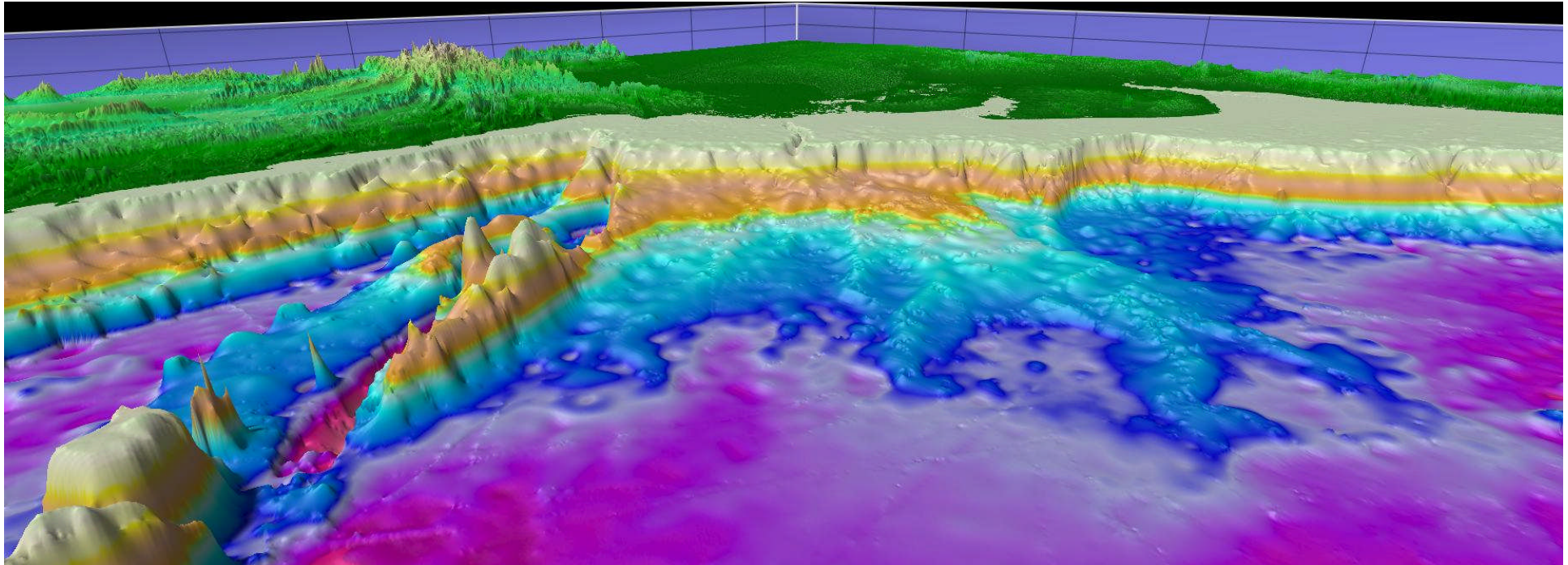
Proprietary to South Asia Gas  
Enterprise PVT Ltd (SAGE)

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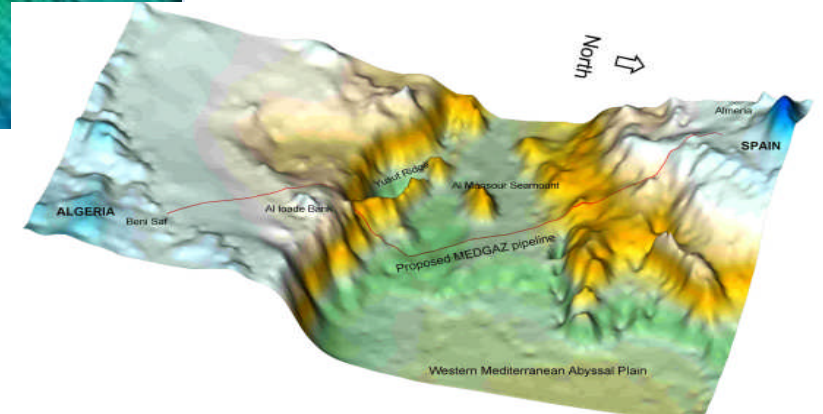
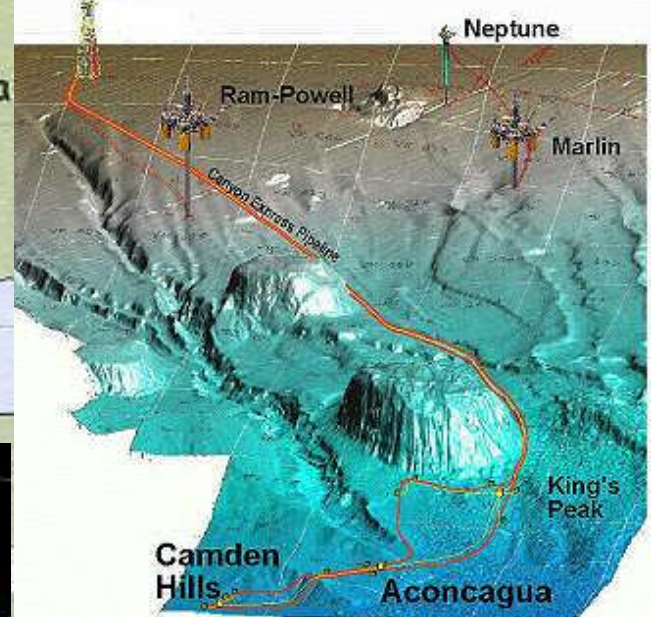
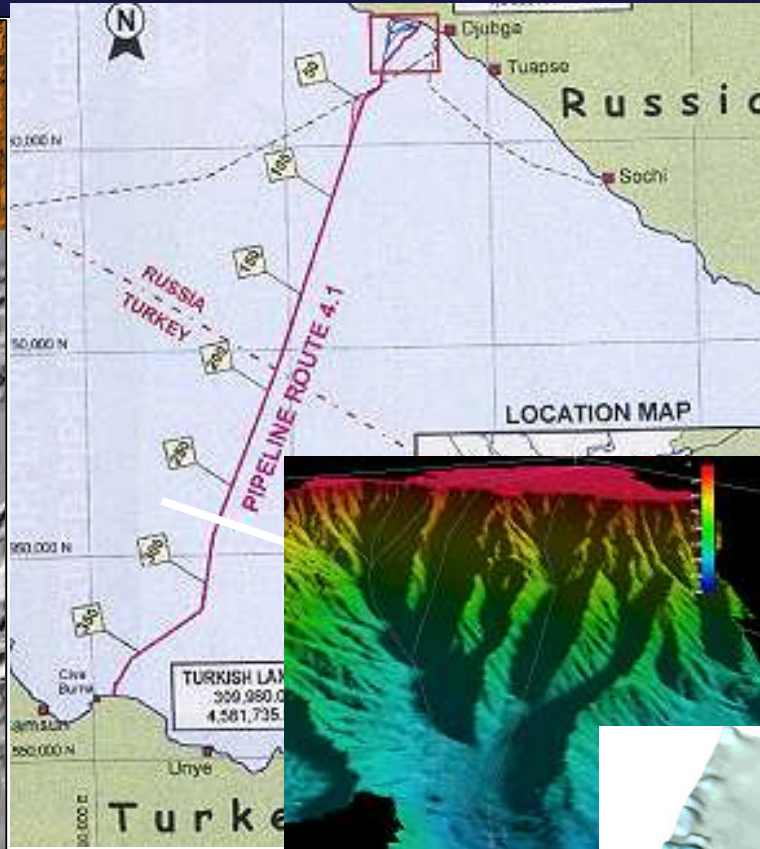
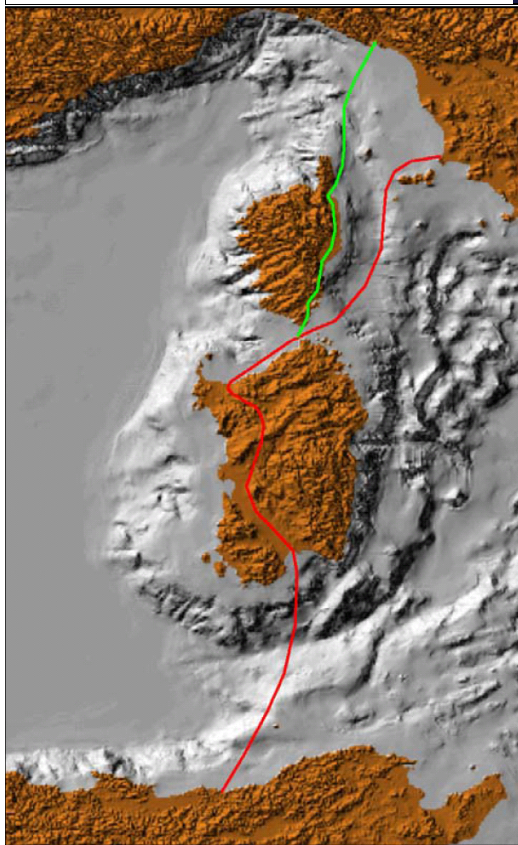
- Indus Fan 1



- Indus Fan 2



# Experience of deepwater pipelines

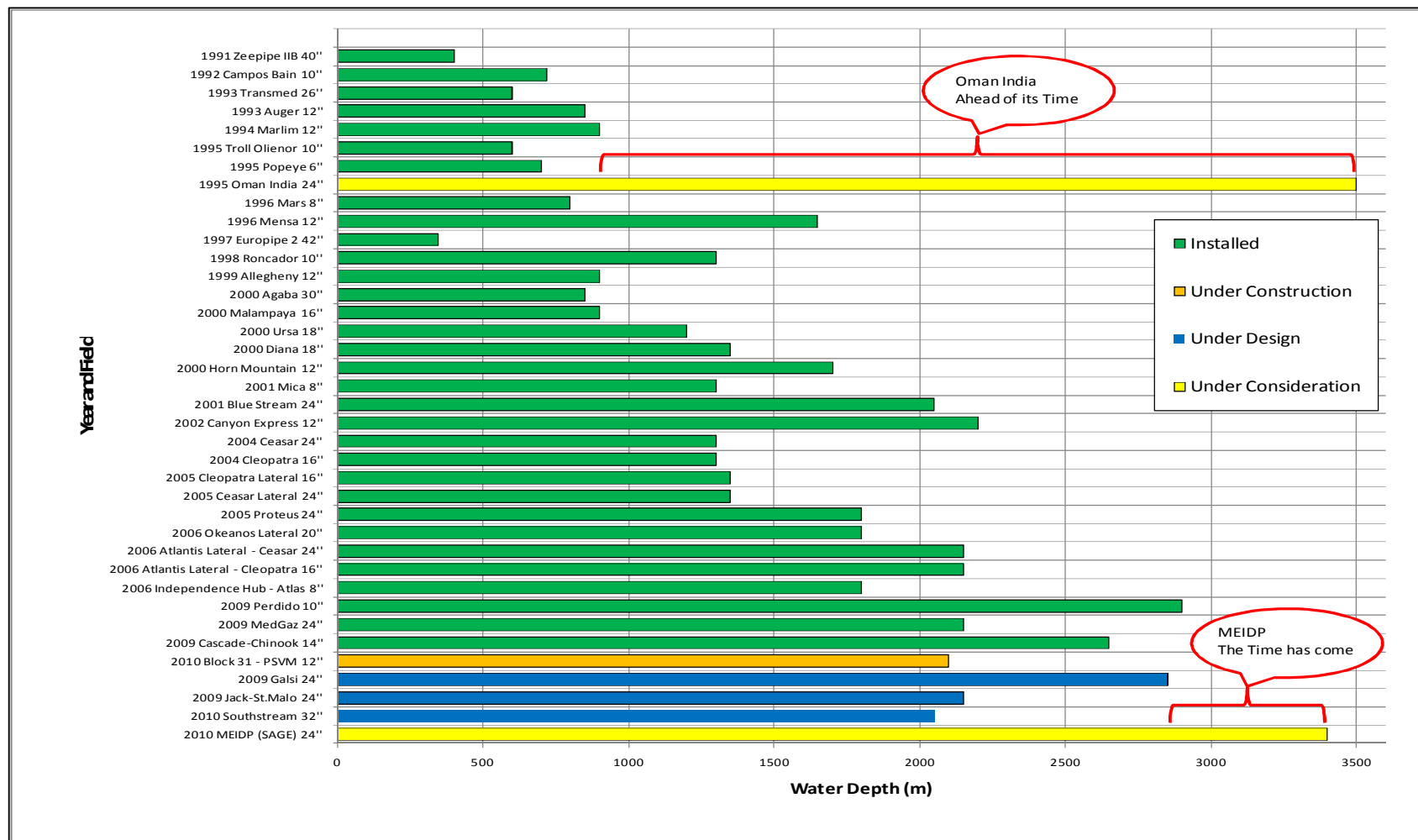


- Galsi
- Bluestream
- Canyon Express
- MEDGAZ

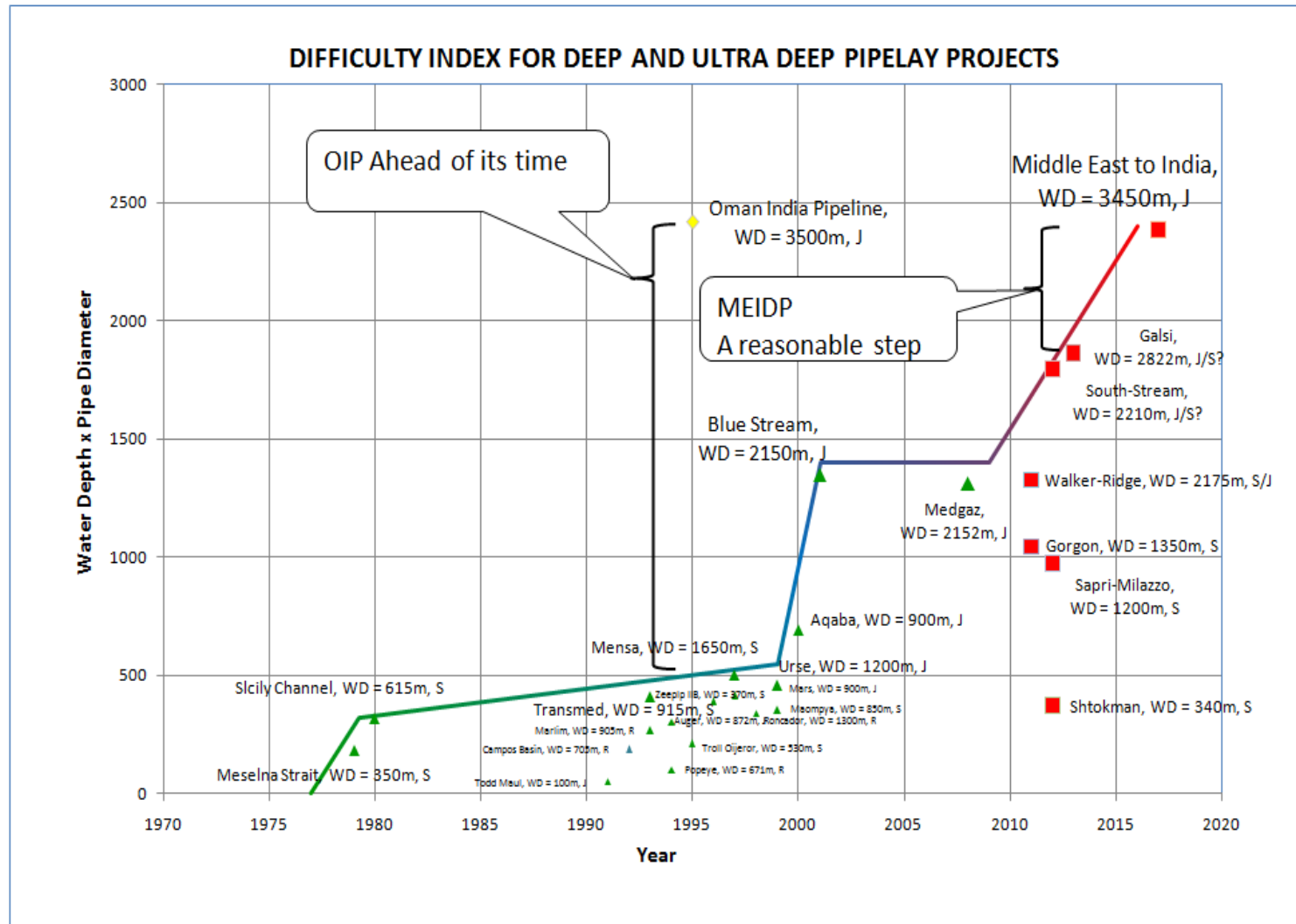
January 2009

Proprietary to South Asia Gas Enterprise PVT Ltd (SAGE)

# Difficulty of Deep Pipelay Projects



# Difficulty Index for Deep Pipelay Projects







## Saipem SpA new laybarge CastorONE

- Under construction in Singapore
- Ready for offshore operations early in 2012. Saipem has confirmed that the MEIDP is feasible and can be installed in a water depth of 3500m

<http://www.saipem.it/site/article.jsp?idArticle=5420&instance=2&node=2012&channel=2&ext=template/37DueColonne&int=article/1DefaultArticolo>



## HMC new Build vessel Aegir

- Under construction in S. Korea
- proposed to be complete by mid 2013, ready for offshore operations early in 2014

<http://hmc.heerema.com/tabid/1838/language/en-US/Default.aspx>



## Allseas new build vessel Pieter Schelte

- Under construction in S. Korea
- Proposed to be complete by end 2013, ready for offshore operations in 2014

<http://www.allseas.com/uk/19/equipment/pieter-schelte.html>