



Smart Solutions for Today's Geoscientist



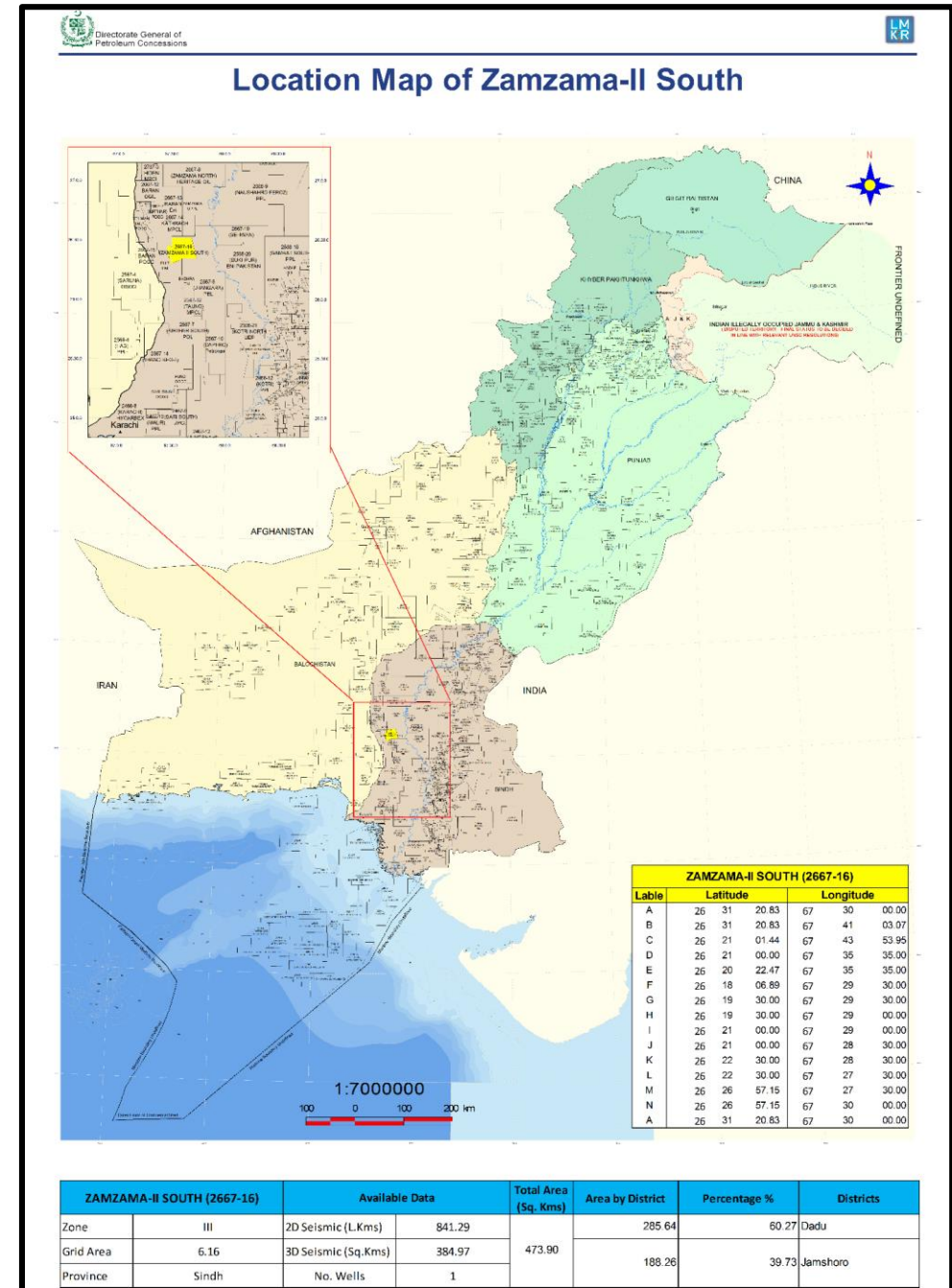
BLOCK: ZAMZAMA-II SOUTH (2667-16)

ONSHORE BLOCK BIDDING ROUND 2024

MINISTRY OF ENERGY PETROLEUM DIVISION (DGPC)

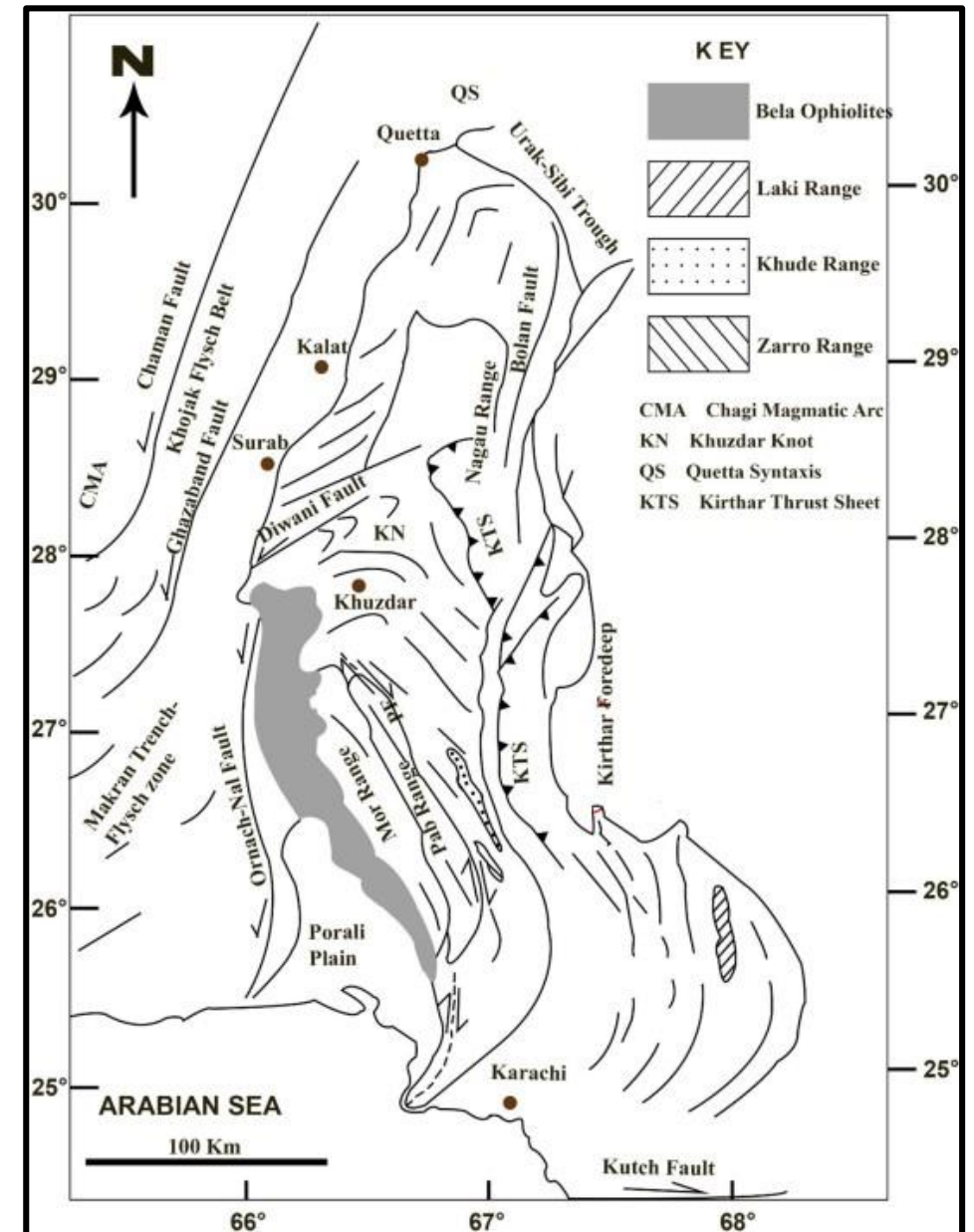
Introduction

- ZAMZAMA-II SOUTH block covers an area of 473.90 Sq. Kms.
- Geological basin: Lower Indus basin, Pakistan.
- The block falls in Prospectivity Zone III.
- ENI, PPL, LAMSO, OGDCL, and BHP acquired 2d and 3d seismic data approximately 841.29 L. Kms and 384.97 Sq. Kms in the block within the years 1980, 1996, 1997, 2003, 2004, 2010, and 2011.
- The block is surrounded by Bhit (West), Sukhpur(East) and Zamzama (North) blocks.
- The well drilled in the vicinity of block is Manchar X-01.



Geological Map

- The collision of Indian and Eurasian plates resulted in the creation of north–south trending Kirthar Fold Belt (KFB) in the Southern Indus Basin.
- The basin is comprised of five structural elements units, i.e., Kirthar Fold Belt, Kirthar Foredeep, Karachi Trough, Thar Platform, and Offshore Indus. The present study area belongs to the western portion of Kirthar Foredeep, which is located between the Kirthar Foldbelt and Thar Platform.
- In the north of Kirthar Foredeep, Jacobabad Mari Kandkot high is present. It is bounded in the south by the Hyderabad high and in the east by the Tharpakar high in the west by KBF Bela Ophiolite.



Petroleum System

Source Rock:

- The Cretaceous Mughal Kot Shale units are considered to be the main source rocks and were deposited in shallow marine and deltaic environments. The organic matter (kerogen) of the Mughal Kot Formation belongs to type III and the total organic carbon (TOC) is in the range from 0.57 to 1.65%.

Reservoir Rock:

- Pab Formation is a proven reservoir in many fields of the Kirthar Fold Belt and Foredeep areas, e.g., Bhit, Hallel, Lundali, Mehar, and Zamzama. In Kirthar Fold Belt, outcrop data also indicate that the Pab Formation is an excellent reservoir with a high Net to Gross (NTG) ratio. In Zamzama Gas Field, Cretaceous Pab Formation is the major reservoir.

Seal:

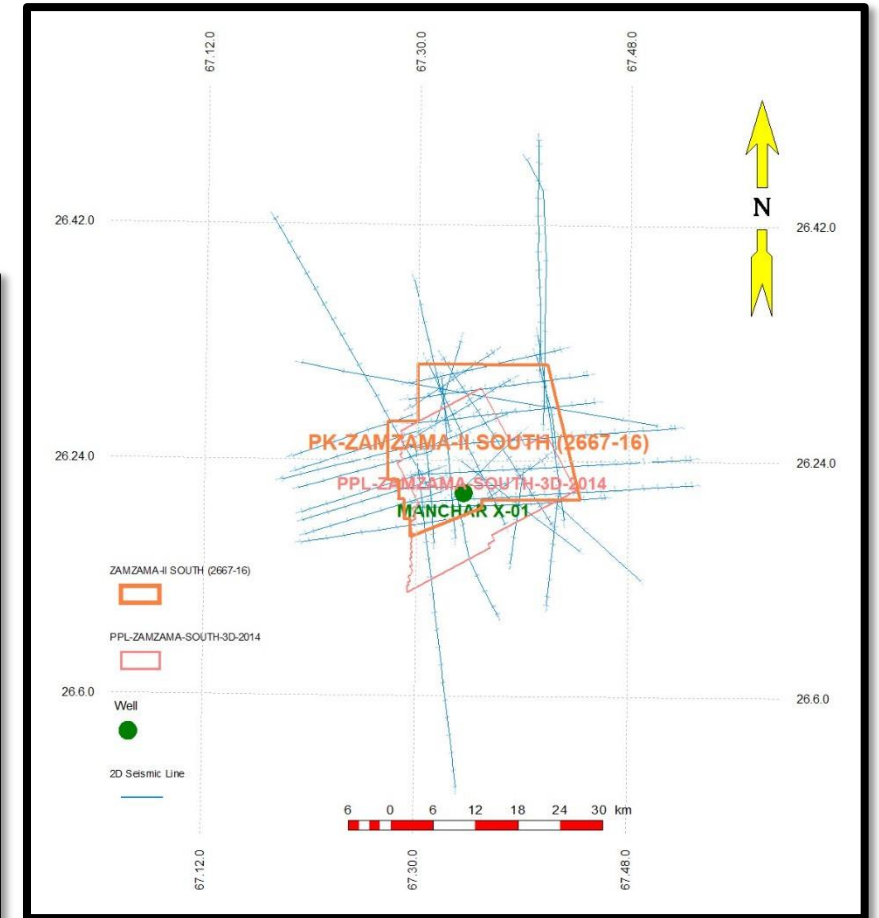
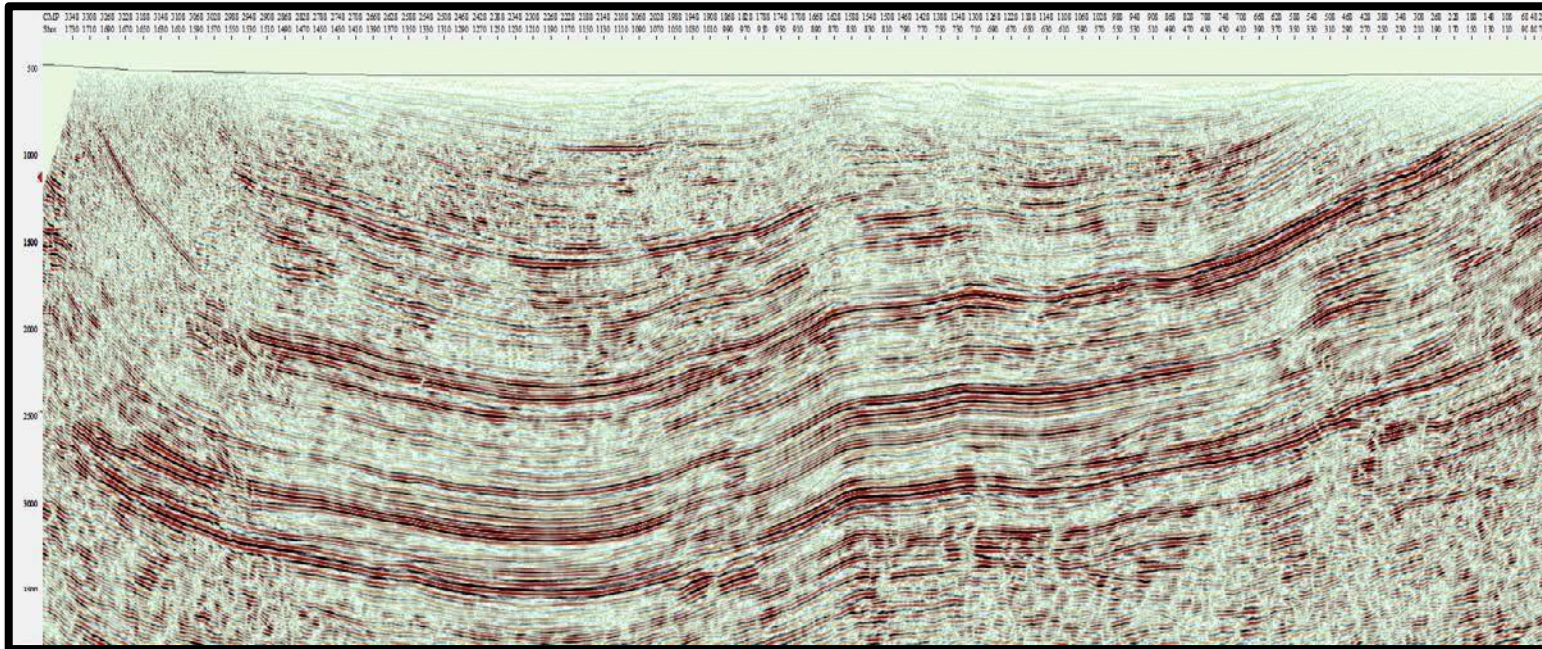
- The overlying Paleocene shales of Ranikot Group have a good basal muddy horizon which provides top seals to the Pab Formation.

Trap:

- Most of the traps are fault-bounded structures having thrust/reverse faults.

AGE				DESCRIPTION	LITHOLOGY	
ERA	PERIOD	EPOCH	FORMATION			
CENOZOIC	QUATERNARY	HOLOCENE	ALUVIUM	CLAY, SHALE, SANDSTONE, CONGLOMERATE		
		PLEISTOCENE PLIOCENE	SIWALIK	SANDSTONE, SHALE, CONGLOMERATE		
			GAJ	SHALE, LIMESTONE, SANDSTONE		
	PALEOGENE	OLIGOCENE	NARI			
			Eocene	LATE		
		MIDDLE		KIRTHAR	SHALE, LIMESTONE	
		EARLY		LAKI	LIMESTONE INTERBEDDED SHALE	
		PALEOCENE	RANIKOT (SEAL)	LIMESTONE, SANDSTONE, SHALE, BASALT		
	MESOZOIC	CRETACEOUS	LATE	PAB (RESERVOIR)	SANDSTONE, SHALE	
				MUGHAL KOT (SOURCE)	LIMESTONE, SHALE WITH MINOR SANDSTONE	
PARH				LIMESTONE		
EARLY		GORU	UPPER	SHALE AND MARL		
			LOWER	SHALE AND SANDSTONE		
		SEMBAR (SOURCE)	OIL/GAS SHALE WITH MINOR SANDSTONE			
JURASSIC		LATE				
		MIDDLE	FEROZABAD GROUP	LIMESTONE AND SHALE		
	EARLY	ANJIRA	LIMESTONE INTERBEDDED WITH SHALE & MARL			
KHARRARI		LIMESTONE, SHALE, MARL				

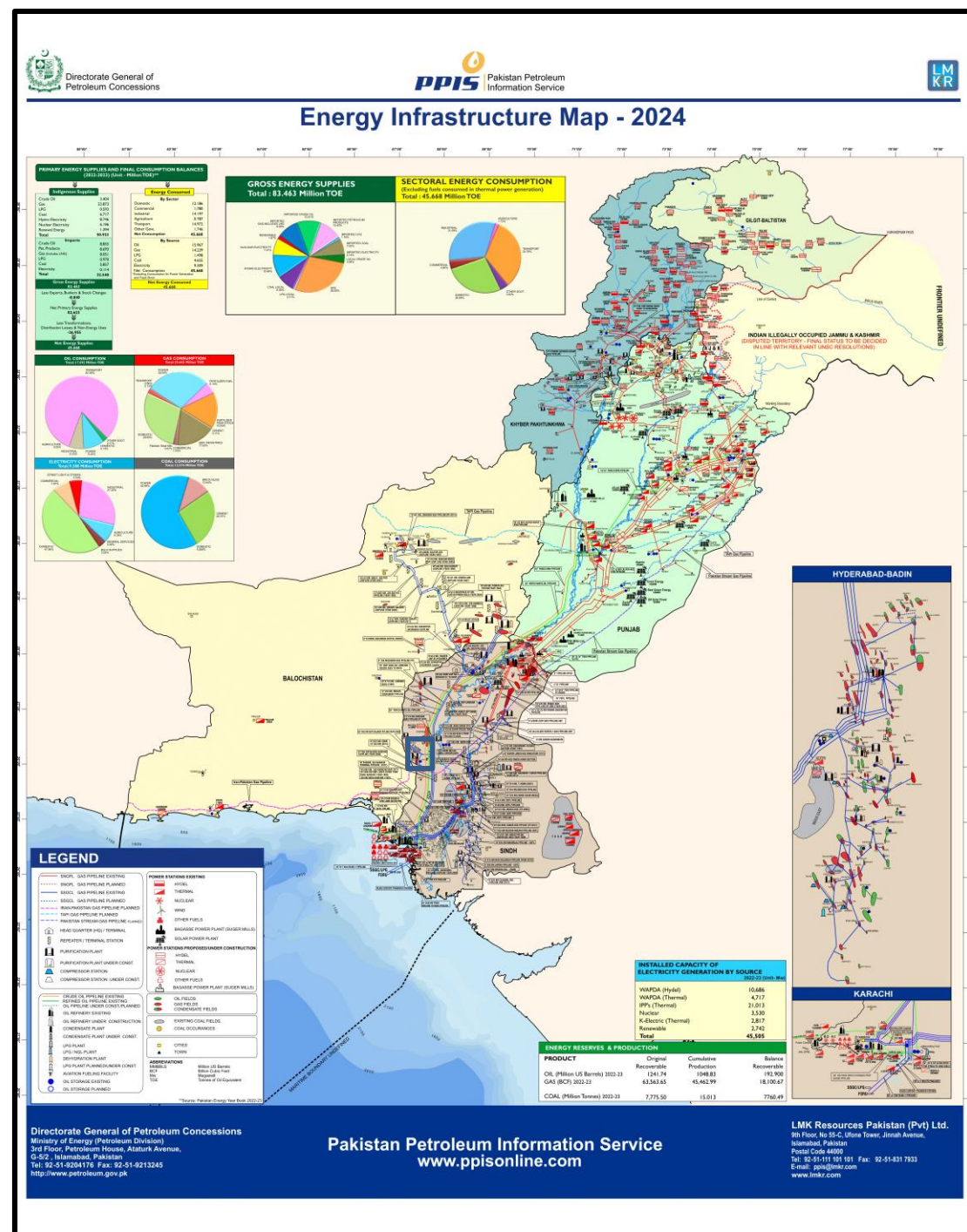
Prospectivity



- High resolution seismic data can allow to delineate true potential of the block.

Infrastructure Map

- Government support to companies for infrastructure development.
- Gas fields exist near the block.
- Thermal power plant exist near the block.
- Purification plant exist near the block.



Investment Benefits

- Low risk, high reward.
- Prolific gas discoveries throughout basin.
- Low cost on infrastructure development within limited timeframe.
- Return on Investment within 3 years.
- Attractive government policies for foreign investors.
- Excellent purchase rate set by the Government against the discovered commodity.
- Government will guarantee to buy the gas or oil discovered.
- Attractive price in case of tight gas discovery.

Block Summary

Item	Indicators
Probable multiple sources in the region	Positive Indicator
Discoveries in Geological Basin	Positive Indicator
Nearby Infrastructure	Positive Indicator
ROI in 3 Years	Positive Indicator

THANK YOU

