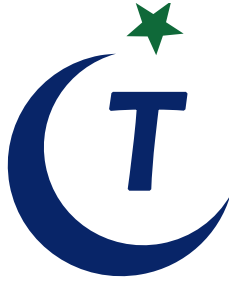


Cursory Overview: Establishing Pakistan's first Fully Integrated Clean Coal Energy Complex



8405 Greensboro Drive, McLean Virginia 22102 | +01 703 226-0192 | www.tharpak.com



Monetizing Thar Coal & Delivering Affordable Energy to Pakistan

Introduction

- Pakistan's population ranks **#5th** globally at **>204 million**¹
- Pakistan has **49.5 million people** WITHOUT electricity²
- Pakistan ranks **165th of 217** countries relative to per capita electricity consumption³
- Thar coal - Pakistan's largest proven indigenous energy reserve at **170 Billion Tons**
- This resource can **transform** Pakistan's geo-political & energy needs
- TharPak controls Block IX holding **2.6 billion tons**
- **Electric generation** & large scale coal gasification (**Synthetic Natural Gas-SNG**)

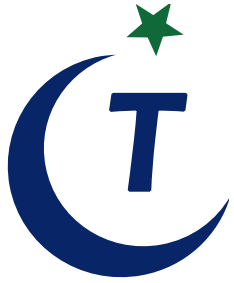
*• 30 year **SNG** sales contract with central government guaranties will facilitate capital formation*

*• Pakistan has an attractive tariff structure in place for private power **guarantying a 20% IRR** for Thar related projects*

¹https://en.wikipedia.org/wiki/2017_Census_of_Pakistan

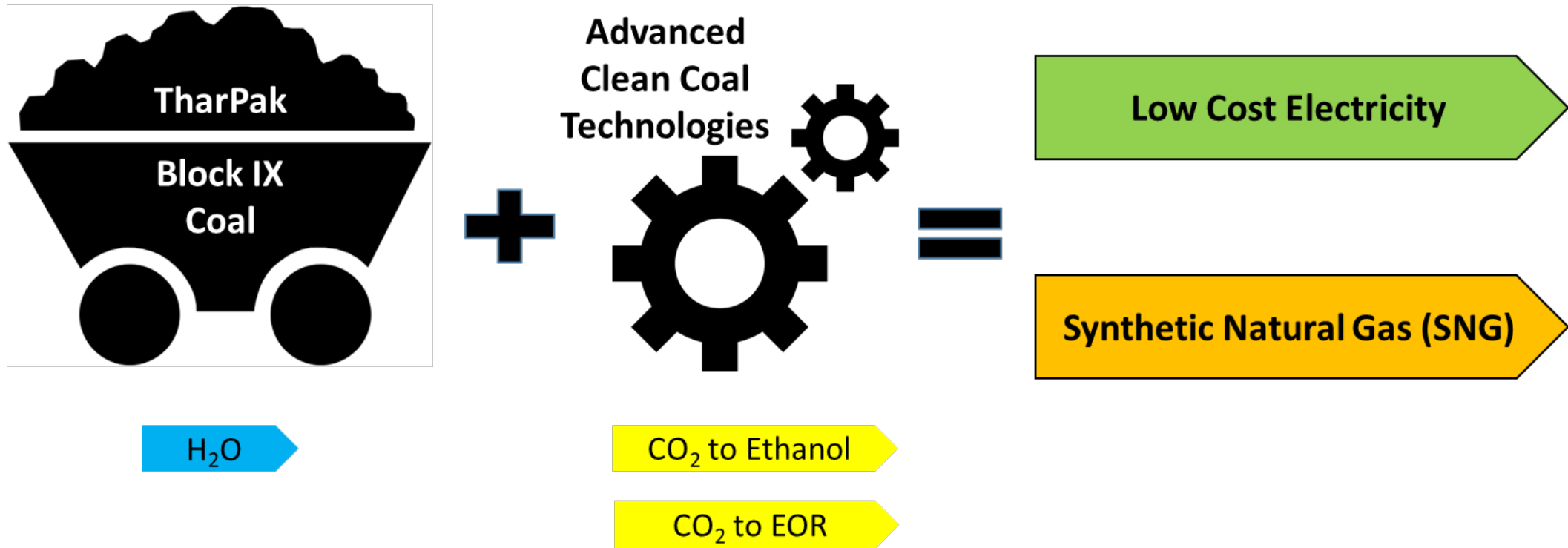
²<https://www.cia.gov/library/publications/the-world-factbook/geos/pk.html>

³<https://www.indexmundi.com/g/r.aspx?v=81000>



Integrated energy company using clean coal technology to achieve international emissions requirements, e.g. the Paris Accord

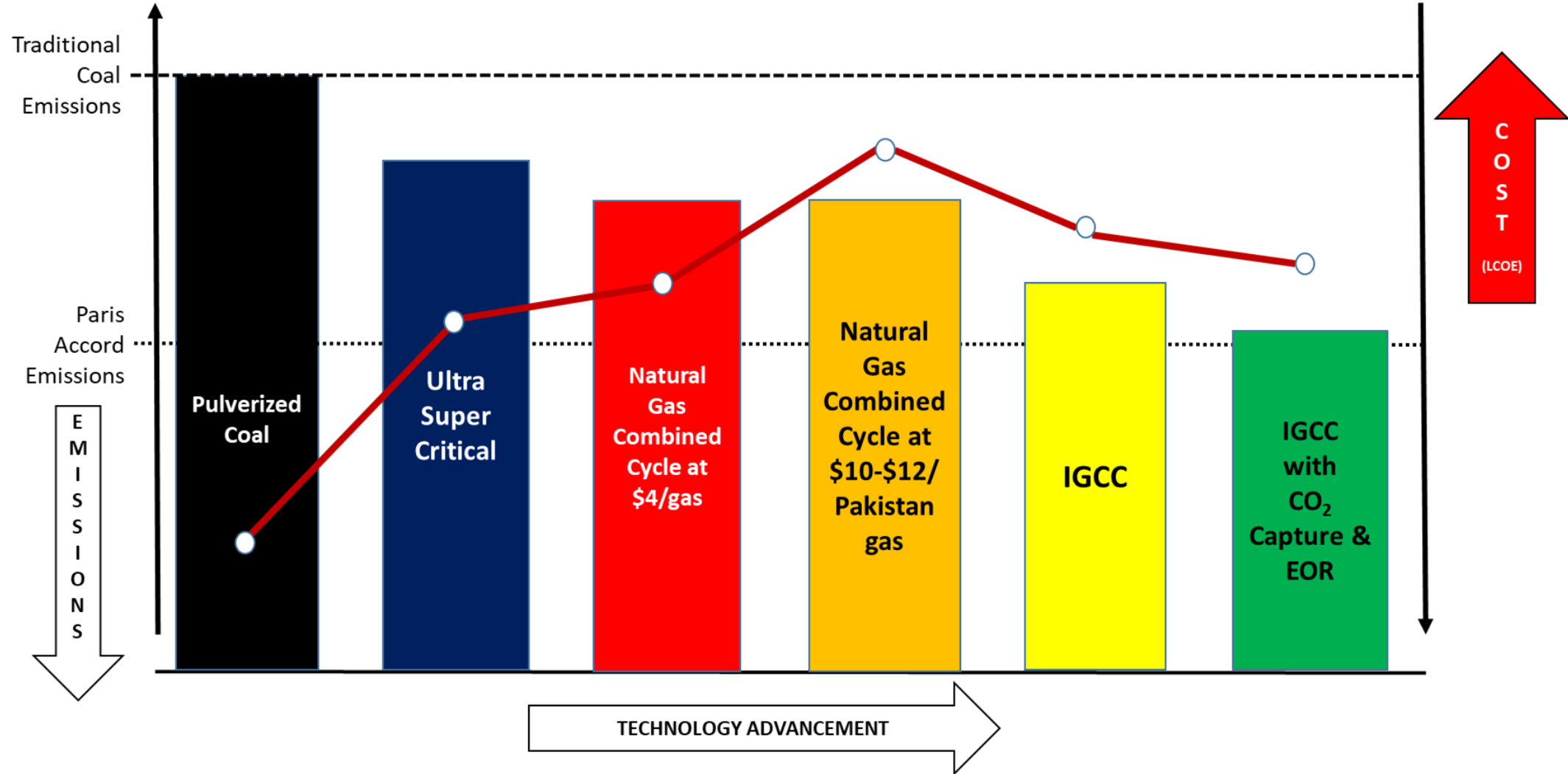
Mission





TharPak's Staged Clean Coal Integrated Approach

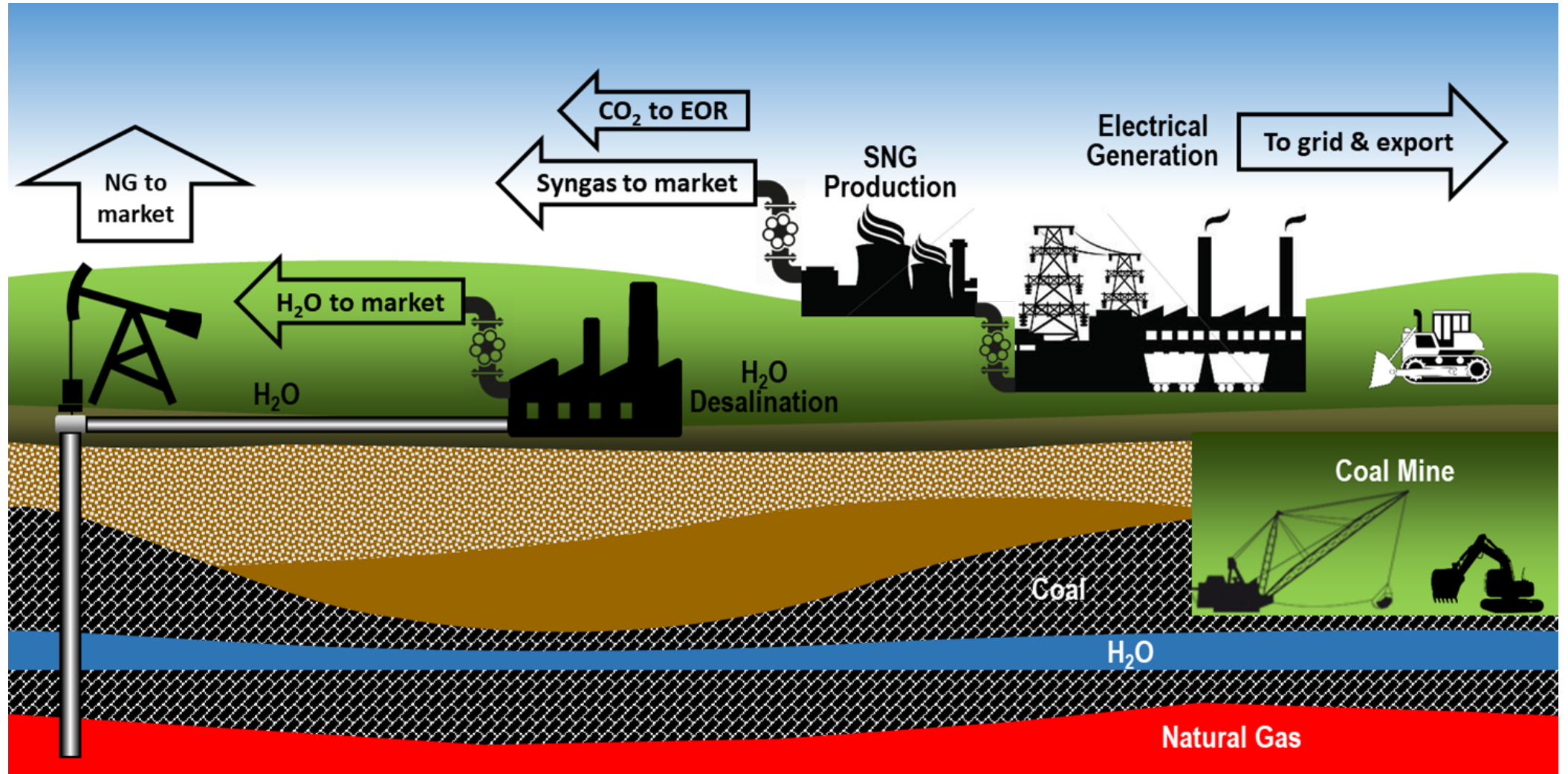
Mission

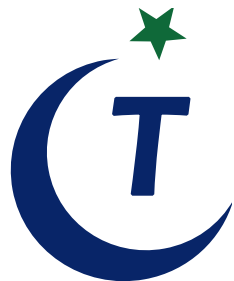




Pakistan's first Fully Integrated Clean Coal Energy Complex

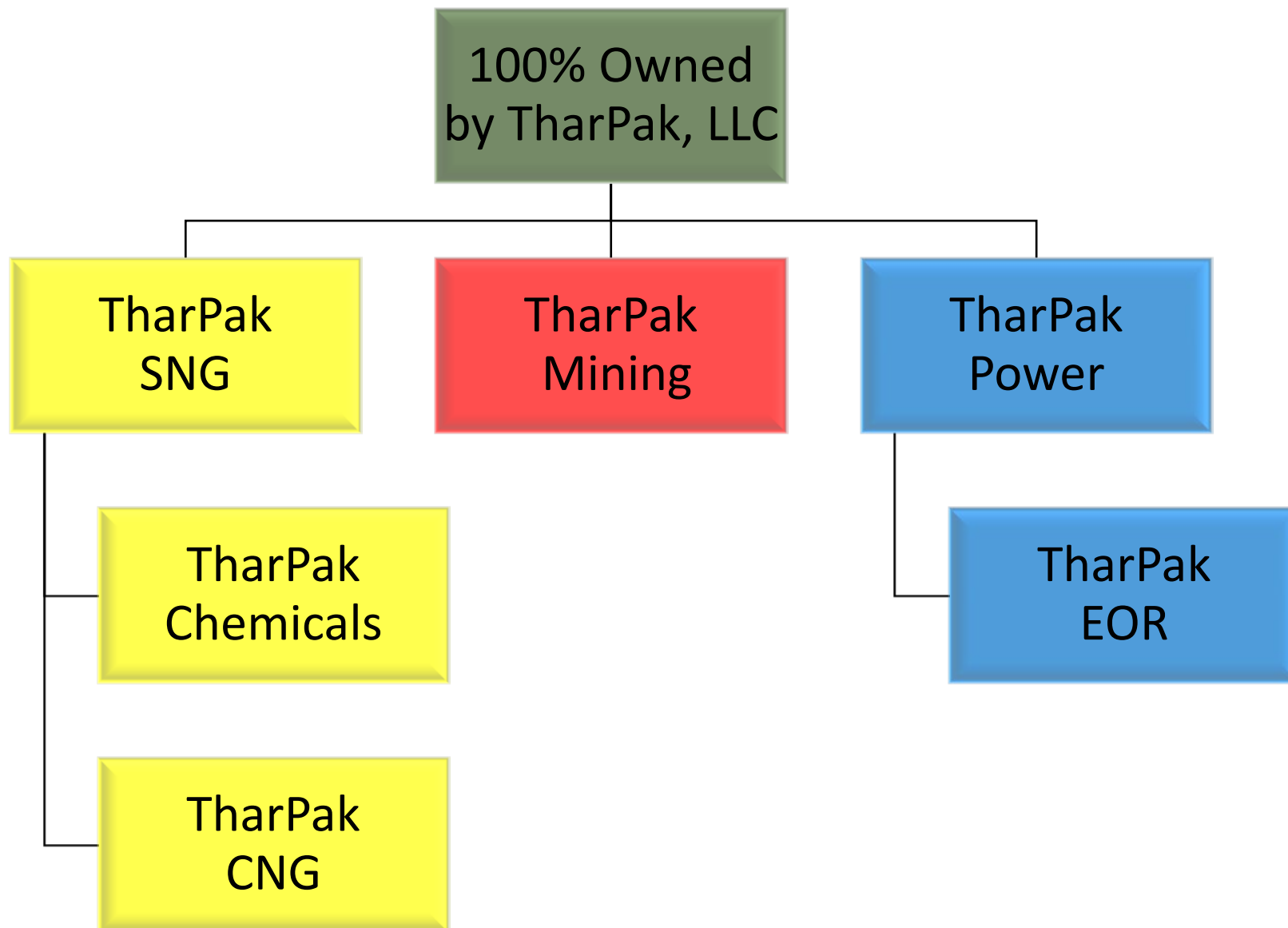
Project

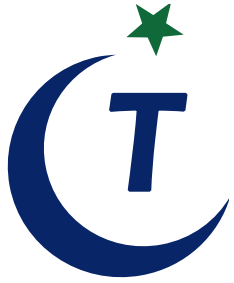




Structure

TharPak, LLC Operating Entities

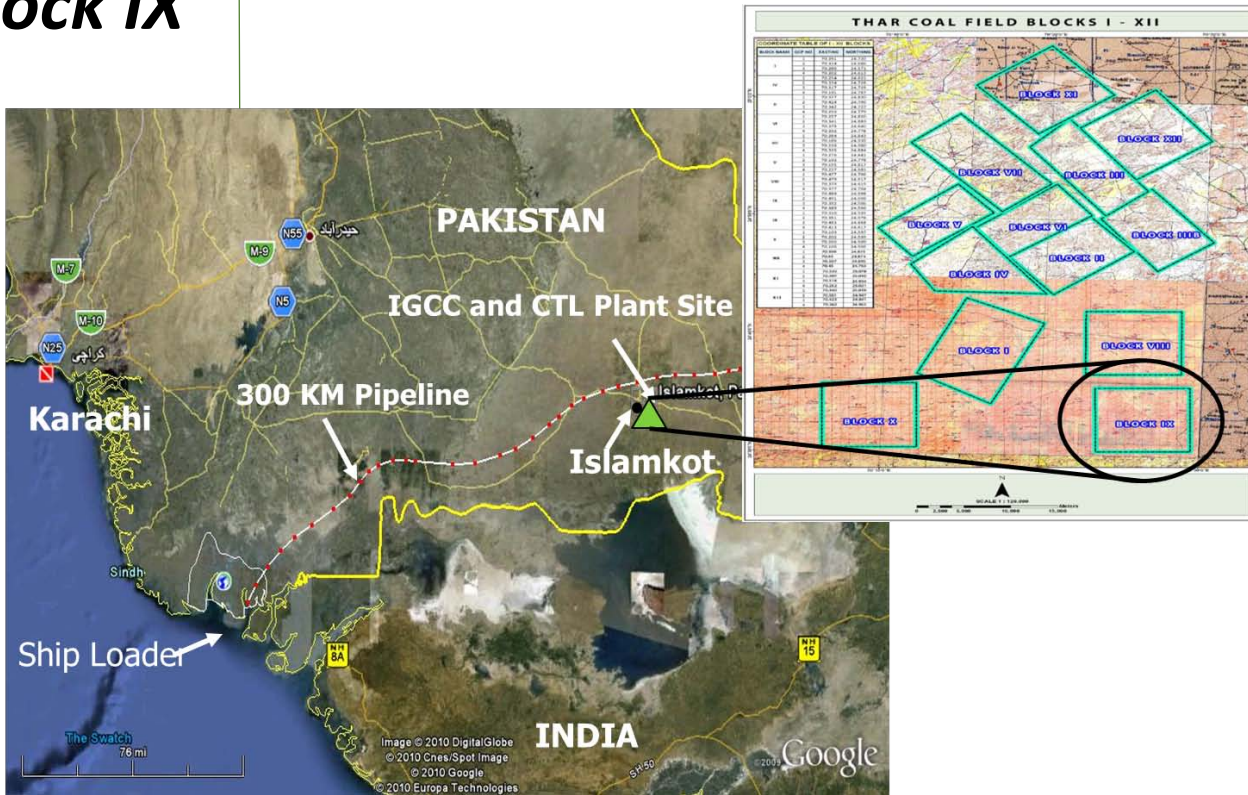


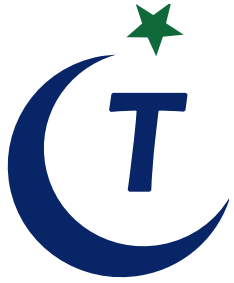


Block IX

Best fit for purpose coal in Pakistan

- 1. Abundant** - enough coal to power Pakistan for 200 years
- 2. Easily minable** – currently Sindh Engro Coal Mining Company are mining in Thar Block II
- 3. Location** – in the Thar desert, little disturbance issues, and contiguous to all blocks. Located near Indian border and accessible to deep water port.
- 4. Timing** – Thar coal is a first mover opportunity in Pakistan and the region
- 5. Cost** – TharPak & Block IX will use U.S. Powder River Basin know-how, U.S technology and reduce mining costs by 50% - expected to be mined at <USD\$10.00/ton





Status

Timeline

- February 2014 TharPak submitted response to RFQ for Expression of Interest
- October 2014 Sindh Coal Authority (SCA) short listed 8 candidates for 4 new Blocks of Thar coal field - TharPak informed of Allocation of Block IX
- March 2015 MOU for allocation signed between SCA & TharPak
- May 2015 commenced selection process for EPC partner/provider in China
- Expect to conclude necessary steps to negotiate timeline towards Box Cut and Full Mining Lease in 2018



TharPak has assembled a group of world class experts, member companies, service & support providers as well as equipment vendors to fulfill the vision to Energize Pakistan.

Members



Ausenco



ALGENOL
BIOFUELS
Harnessing the sun to fuel the world



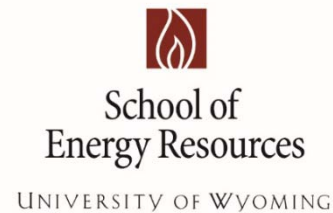
Willis



KBR



PSC HVDC
Specialist Consultants to the electricity supply industry



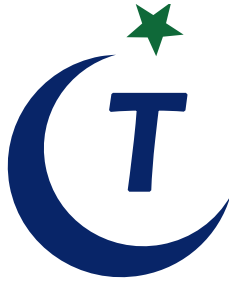
School of
Energy Resources
UNIVERSITY OF WYOMING



VirginiaTech
Invent the Future



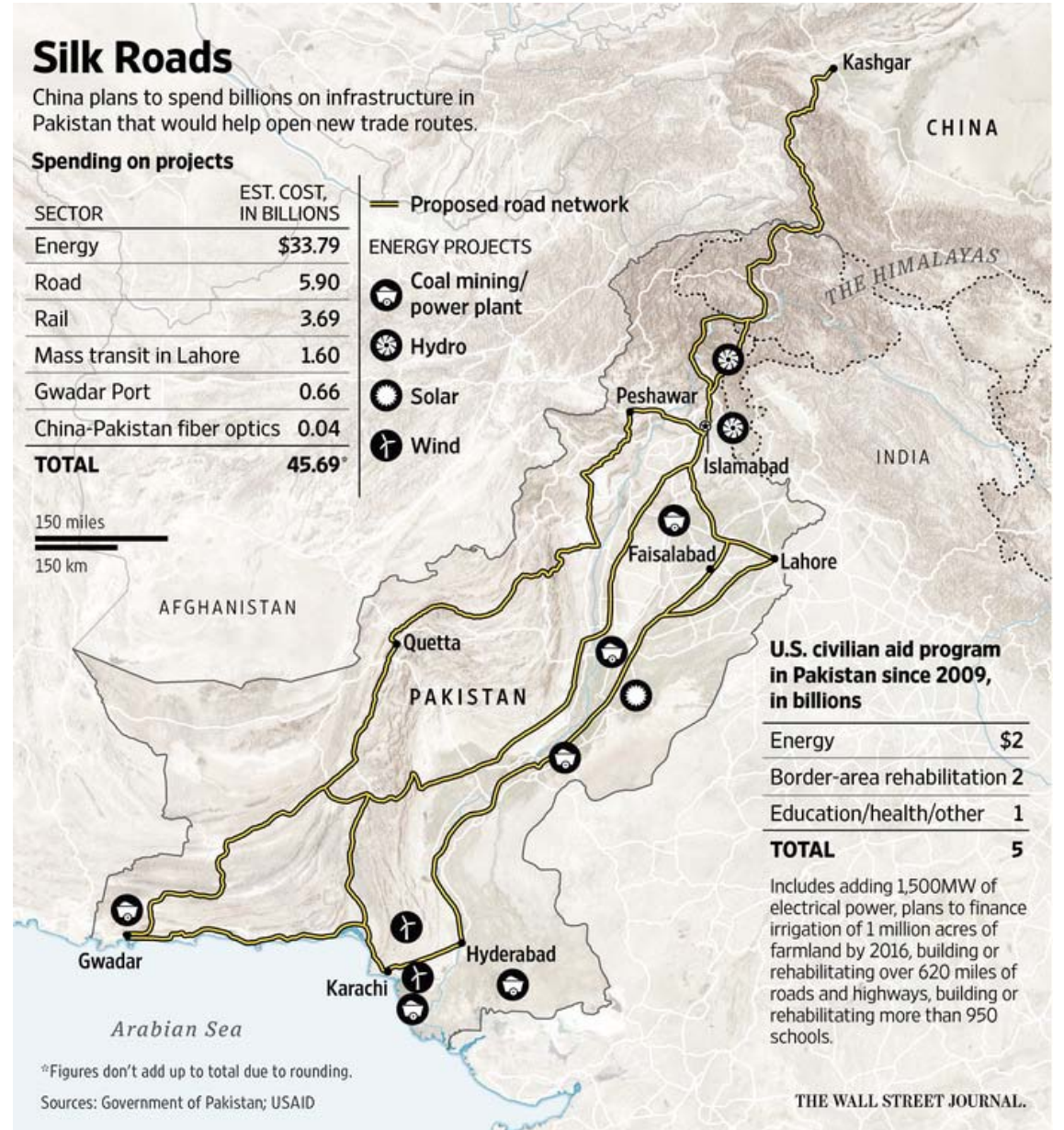
West Virginia University

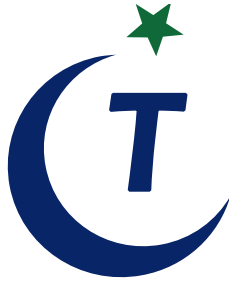


**One Belt,
One Road**

If 'One Belt, One Road' is like a symphony involving and benefiting every country, then construction of the China-Pakistan Economic Corridor is the sweet melody of the symphony's first movement.'
—Wang Yi, China's foreign minister

TharPak has entered into discussions with several Chinese State owned enterprises to join TharPak



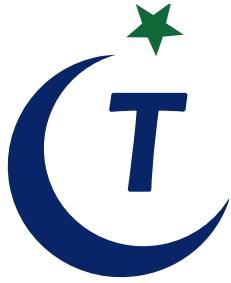


Ask

\$30 million to meet initial milestones necessary to secure technology validation for IPO or first round of Venture capital

		TharPak Coal Power & CTL Project																							
ID	Task Name	2017		2018		2019		2020		2021		2022		2023		2024		2025		2026		2027		2028	
		H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2
0	Conceptual Schedule (rev01)																								
1																									
2	1. Prefeasibility Study (all projects)																								
3	2. Coal Mine Development																								
4	2a. Phase I: Mine Design & Box Cut																								
5	2b. Phase II: Full-scale mining																								
6	2c. Phase III: Increase mining																								
7	2d. Phase IV: Increase mining																								
8	3. Power Project																								
9	3a. Phase I: 2,000 MW																								
10	3b. Phase II: 2,000 MW																								
11	3c. Phase III: 4,000 MW																								
12	4. CTL Project *																								
13	4a. Phase I: 20,000 BPD																								
14	4b. Phase II: 20,000 BPD																								
15	4c. Phase III: 40,000 BPD																								
16	5. CO2 Pipeline & Sequestration Project *																								
17	5a. Planning																								
18	5b. Development of Storage Site																								
19	5c. CO2 Pipeline																								
20	5d. CO2 Export Terminal																								
21																									

* Only if proven feasible



Three most recent US BLM leases, all above \$1.00 per insitu ton

LBA Name	Applicant	Lessee	Effective Date	Acres Offered	Tons Offered	Successful Bid	\$/ton	\$/acre
South Hilight Field	Ark Land Company	Arch Coal Company	5/1/2012	1,977	222,676,000	\$300,001,012	\$1.35	\$151,769
South Porcupine	BTU Western Resources	BTU Western Resources	6/13/2012	3,243	401,830,508	\$446,031,864	\$1.11	\$137,536
North Porcupine	BTU Western Resources	BTU Western Resources	10/1/2012	6,364	721,150,000	\$793,270,311	\$1.10	\$124,644

Conservatively, TharPak’s Block IX insitu value of \$0.10/ton¹ at inception and adjusted upwards as value from design advances. The first such upward adjustment coming at the commencement of mining. At this valuation, TharPak’s base would be **\$260,000,000**.

It should also be noted that regulations on the **Hong Kong Stock Exchange** allow start up firms “Controlling Resources & with sound management” to raise capital via an IPO even prior to mining commencement. TharPak intends to tap that market as we advance the development process and add value.

NOT included in this valuation, besides any **off-shore CO₂-EOR** opportunities, is the Lower Indus basin shale oil/condensate & gas technically recoverable resources of **9.1 billion barrels of oil/condensate** and **105 Tcf of gas²**.

¹Note: The Adani Group bid over \$4.50/insitu ton for a mine in eastern India in late 2015 holding similar quality coal

²<https://www.eia.gov/analysis/studies/worldshalegas/>

Thank you, Questions, Next Steps

Irfan Ali, Managing Director

+1-703-371-5867

irfanali@tharpak.com

Steven Carpenter, Ph.D, Director of Development

+1-513-460-0360

stevecarpenter@tharpak.com

Charles D. McConnell, Advisor

+1-832-922-5799

Charles.D.McConnell@rice.edu