



**THAR BLOCK-II:
ENERGY SECURITY TO PAKISTAN
& A MODEL FOR INCLUSIVE DEVELOPMENT**

Over the past decade, Pakistan has been plagued by a power crisis arising out of:

**INSUFFICIENT
ENERGY**

**EXPENSIVE
ENERGY**

**IMPORTED
FUEL**

**LONG TERM ENERGY REQUIRES
ABUNDANT, CHEAP AND *INDIGENOUS* SOURCES OF
POWER**

THE THAR POTENTIAL

**186
Billion
Ton**

**Pakistan's Coal
Reserve**

**175
Billion
Ton**

**Total Thar Coal
Reserve**

**50 Billion
TOE**

**More than Saudi
Arabia & Iranian
Oil Reserves**

2000 TCF

**68 Times higher
than Pakistan's
total gas reserves**

**THAR COAL CAN FUEL ELECTRICITY DEMAND OF PAKISTAN
FOR SEVERAL CENTURIES**

WHY THAR COAL?



**THE BEST OPTION FOR
FUTURE BASELOAD
POWER PLANTS**

- 01 We are Pakistani
- 02 We are the Cheapest Baseload Fuel
- 03 We offer a hedge against Price Volatility
- 04 We save Foreign Exchange
- 05 We are most Flexible on Time
- 06 We are Environmentally Compliant
- 07 We are the Most Socially Conscious



SECMC

Sindh Engro Coal Mining Company

LARGEST PUBLIC PRIVATE PARTNERSHIP OF PAKISTAN



54.7%



engro energy

11.9%



THAL LIMITED

11.9%



9.5%



04%



08%



Annual royalty of ~USD 35 million to the government by SECMC, at full scale, which will be further spent on the development of Pakistan

% Shareholding



engro powergen thar



engro energy

50.1%



9.5%



35%



5.4%

% Shareholding



THAR BLOCK-II COAL SAVES FOREX

USD 1.3 Bn
FX Savings
Against Imported Coal

USD 2.0 Bn
FX Savings
Against LNG

USD 3.6 Bn
FX Savings
Against Furnace Oil

Annual forex outlays at fuel capacity of 5280MW each
(compares fuel cost component only)

**Average foreign exchange savings per year of upto USD 1.6 billion and
USD 48 billion over the lifetime of the project**

MINING PROJECT

- **3.8Mtpa** of Coal Extraction in Phase-I
- Overall progress **99% vs. 83%** planned i.e. **112Mn out of 112Mn m³ OB removed**
- Current Mine Depth: **163m**
- **Total manpower: 3,152** with **2,730 Pakistanis** (~2,020 are Tharis) & **428 Chinese** – **74% Tharis working on the project.**
- Progress is 4 months ahead of schedule
- Project cost is 20% less than approved cost

COD will be achieved by May/June 2019



18 Excavators



125 Dump Trucks



FIRST COAL EXTRACTED FROM THAR

- On **June 10th 2018**, **SECMC** unearthed the **first layer of Thar coal** from 141 meters below the surface
- The next part of this dream will be achieved by December 2018, when the **first electron from Thar Coal will be added to the national grid.**



THAR BLOCK-II MINE: 150M DEPTH

Overall Progress on Mine (September)



SYNCHRONIZATION OF POWER PLANT WITH NATIONAL GRID

- On **March 18th 2019**, Engro Powergen Thar Limited successfully synced its first 330MW unit of Power Plant with the national grid
- The next part of this dream will be achieved on April 10th 2019, when the **2nd unit of the power plant will also be synced**, making entire **660MW Power Plant synced with the national grid**



POWER PROJECT

- **2x330 MW** Power Plant by Engro Powergen Thar Limited
- Overall progress is **99% - 4 months ahead of schedule**
- **Total manpower: 3,673 total with 1,070 Tharis, 1,859 Chinese & 744 Other Pakistanis**
- Project cost is within budget
- Pre-commissioning activities started

**All efforts are underway to enable first electron to flow
syncing of first unit by Dec 2018
COD will be achieved by May/June 2019**



EPTL 2X330MW POWER PLANT AT THAR

Overall Progress on Power (September)



Environmental Stewardship

Regulation	Requirement	Actions Taken
National Regulations		
Environmental Protection Act/Sindh Environmental Act	Compliance of discharge with NEQS/SEQS Guidelines	<ol style="list-style-type: none"> 1. Independent Environment Monitoring Consultant (IEMC) designated at Sites 2. Monthly reports by SECMC to SEPA 3. Quarterly reports sent to SEPA (EPTL)
IEE-EIA Regulations 2000	Preparation, submission and review of Environment Assessment studies	03 Environmental Impact Assessment Studies submitted : <ol style="list-style-type: none"> 1. Coal Mining 2. Power Plant 3. Resettlement Villages
Sindh Coal Mine Rules 2016	Provision of adequate safety and health facilities to mine workers	Comprehensive Health and Safety Plan based on: <ol style="list-style-type: none"> 1. Queensland Mining Systems 2. Dupont 3. ISO Systems

Both Mining & Power projects are compliant with all relevant national regulations

Voluntary Environmental Compliance

Regulation	Requirement	Actions taken
International Regulations (Voluntary participation)		
International Finance Corporation (IFC)	Guidelines for Monitoring Parameters	<ul style="list-style-type: none"> • IFC-compliant technology to ensure compliance of: <ul style="list-style-type: none"> • Ambient Air Quality • Emissions
Convention on Biological Diversity	Sustainable Solutions for Biological Diversity	<ul style="list-style-type: none"> • Mass-plantation of indigenous (and endangered) plants • Vulture Conservation survey • No Hunting-No Trespassing-No Trapping Policy • Responsible Eco Management
Minamata Convention	Containment and Reduction of Mercury Emissions	<ul style="list-style-type: none"> • Registered inventory with Ministry of Climate Change
Global Reporting Initiative	Public Reporting of Performance	<ul style="list-style-type: none"> • EHS performance KPIs reported publicly each year
Montreal Protocol	Ban on Ozone Depleting Substances	<ul style="list-style-type: none"> • Ban on CFC products at EEL sites

Beyond mandatory compliance , projects are aligned with international protocols

WE ARE IN THAR FOR A LARGER PURPOSE





THAR FOUNDATION VISION

Thar Foundation has been established by the Government of Sindh together with Companies engaged in Thar Coal project to improve life for the residents of main beneficiaries of Thar coal – the residents and communities of Tharparkar.

Thar Foundation aspires to adopt and implement the SDGs in an accelerated model for the entire tehsil of **Islamkot – thereby making it Pakistan's first SDG-compliant tehsil by 2024** – 6 years ahead of the global timeline.



WHAT ARE SDGs?

SDG PRIORITIZATION FOR ISLAMKOT

Overarching Goals

Definition: SDGs that will be met through the prioritized goals – these are the guiding principals for all interventions



Prioritized Goals

Definition: Targeted interventions either already exist or will exist in the future under Thar Foundation for each of the SDGs



Advocacy Goals

Definition: SDGs either 1) beyond the scope of Thar Foundation or, 2) not applicable to Islamkot. However, Thar Foundation will continue to advocate achievement of these SDGs





Prioritized Goals



WHAT WE SAW



Maan Singh Bheel Village School in 2015



WHAT WE CREATED



Maan Singh Bheel Village School in 2017

Primary and Secondary Education

4 QUALITY EDUCATION



Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

As of now, we have:

+2,300

Students

24

School units

130

School Staff



659
Females



1,658
Males

1:30

Teacher : Student Ratio

PKR 600M

spent on infrastructure



By 2024 we aim to adopt and operate all government schools

Thar Foundation Primary & Secondary Education

4 QUALITY
EDUCATION

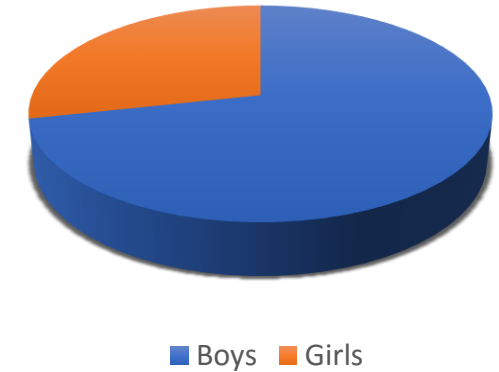


Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Student Enrollment

School Name	Boys	Girls	Total
TCF Islamkot	283	114	397
TCF Mithi	189	91	280
TCF Jiwan Das Campus	215	59	274
TFPS Aban Jo Tar	131	49	180
TFPS Kharo Jaani	109	62	171
TFPS Jeaando Dars	110	60	170
TFPS Jaman Samoon	124	29	153
TFPS Gorano	107	41	148
TFPS Thario Halepoto	106	39	145
TFPS Maansingh Bheel	90	44	134
TFPS Ahsan Shah Jo Tar	103	31	134
TFPS Bitra	91	40	131
Total	1,658	659	2,317

Enrollment



Updated: January 2019

3 L Curriculum

4 QUALITY EDUCATION



Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

- Thar Foundation is sponsoring the adaptation of TCF school curriculum for rural Sindh at a cost of PKR 50 Million:
 - 3 year cycle being developed on a 3L formula; based on global practice of teaching in mother tongue (Sindhi) – national language (Urdu) – English
 - This curriculum can be adopted by schools across Sindh



Higher Education & Adult Literacy

4 QUALITY EDUCATION



Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

**Zero Semesters in collaboration with IBA
Karachi and funding of Thari scholars**



**Need and Merit Based Scholarships to
students at MUET and other fields**



**Rehana Halepoto,
First lady doctor of Thar
Block-II**



**4 adult literacy
centers
operational in
collaboration
with JICA**

Higher Education & Adult Literacy

4 QUALITY EDUCATION



Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all



Need and Merit Based Scholarships to
TF Students by ABB Pakistan



Partnership with C-100 Think Tank to
Advocate Broad-based Systemic
Changes in Education System

Mission to Mars

4 QUALITY EDUCATION



Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Thar Foundation in collaboration with **Mission to Mars** organized a week-long activity for the students to create projects using everyday science experiments, with the help of low- and no-cost material.



1st TF-TDF MagnifiScience Exhibition in Thar

4 QUALITY EDUCATION



Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

The 1st Thar Foundation TDF MagnifiScience Exhibition was held in Thar which was attended by approximately **14,000 students and community members** from across Tharparkar.



First Female Cricket in Tharparkar

4 QUALITY EDUCATION



Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Thar Foundation also has the honor to host **first inter-school female cricket tournament** in Tharparkar. Girls of TF Primary Schools were so good while playing that we would had to take this to next level.



1st All-Sindh Female Football Tournament in Thar

4 QUALITY EDUCATION



Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

The 1st Thar Foundation-hosted All Sindh Female Football Tournament was held in Thar Coal Block II in which teams from participated **Karachi, Tharparkar, Mirpurkhas, Hyderabad, Sukkur, Khairpur, and Hub Chowki.**



TFPS children's first Fishing and Boating excursion

4 QUALITY EDUCATION



Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Students of Thar Foundation Primary Schools has their first-ever fishing and boating excursion to **Gorano Reservoir** where they witnessed and did fishing for the first time in the lives. The children were also enthralled by the boating activity they did in Gorano Reservoir.



Students, ambassadors of tree plantation

4 QUALITY EDUCATION



Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Students of TF Primary Schools pledged to play their part by planting **as many tree in one day as possible** – they took to the **Ansari Green Park** in Block II and planted local species of trees with the help of HSE Department of SECMC.



TFPS students watch movie, 3 Bahadur

4 QUALITY EDUCATION



Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Screening of **3-Bahadur** and **Donkey Raja** was arranged for the students of the Thar Foundation Primary Schools – the children were very excited to watch the movie. For many, it was the first time they saw a movie on a large screen. Their mothers were also invited who were also amazed to see the large screen.



Celebration of 14th August

4 QUALITY EDUCATION



Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Hearts of the TFPS students were brimming with patriotism on 14th August when they witnessed the flag-hoisting and special security parade during a ceremony held at Mining Site Office. The SECMC management was speechless when seeing the children behave so confidently.



Marvi Mother & Child Clinic

3 GOOD HEALTH AND WELL-BEING



Ensure healthy lives and promote well-being for all at all ages

- **Free of Cost Healthcare** to Residents of Block II
- Managed by The Indus Hospital
- **Second Clinic inaugurated at Gorano on 2nd July 2018 and shifted to Gorano official BHU on 4th August 2018**

Marvi Clinic – our flagship intervention – has helped improve the lives of thousands of Thari women and children



Thar Foundation Hospital

3 GOOD HEALTH AND WELL-BEING



Ensure healthy lives and promote well-being for all at all ages

- **250 bed state-of-the-art hospital** to be constructed at Islamkot at a cost of PKR 2.0 billion
- In collaboration with Government of Sindh and operated by Indus Hospital
- **Functional from April 01, 2019**
- PKR 500 million committed by GoS in the latest budget
- PKR 100 million committed by Shahid Afridi Foundation



Hope - Not Out!

Thar Foundation Hospital will be the most efficient and affordable tertiary care hospital across Thar

Employment Creation

8 DECENT WORK AND ECONOMIC GROWTH



Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Project Manning is 70% Thari



4,399
Total workforce

3,303
Tharis Employed

Skill Development

8 DECENT WORK AND
ECONOMIC GROWTH



Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

1000+

Tharis

Trained for Scaffolding, Masonry, Steel fixing, Pipe Fitting & Driving



Training Partners



Thar Trainee Engineers Program

8 DECENT WORK AND
ECONOMIC GROWTH



Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all



- First Annual Batch of **25 trainees** along with **75 trainees (five female engineers)** in 6 month O&M Training in China
- On-Job Training at Project Site



Second batch recruitment in process

Functional
Projects



Quarterly
Evaluation



Mentorship



Placements

Thar Associate Engineering Program

8 DECENT WORK AND
ECONOMIC GROWTH



Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

- First Annual Batch of **30 students**
- Technical Training at Engro Dharki
- Second wing of the program under development; technical training imparted at Mithi
- Recruitment for Second Batch in process



82% vs. **48%**

TAEP students vs. Batch average



TAEP students are outperforming their batchmates by a mile

Thar Information Technology Program

8 DECENT WORK AND
ECONOMIC GROWTH



Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

- **1 year program** for **25 Thari students** at Saylani Institute in Karachi
- The course will cover:
 - Web development
 - Javascript
 - Mobile app development
 - Soft skills trainings
- On the Job training & mentorship by Engro's IS department



We aim to diversify the skillset of Thari youth and make them part of future workforce

Reverse Osmosis Plants

6 CLEAN WATER AND SANITATION



Ensure availability and sustainable management of water and sanitation for all



16 RO plants

supplying clean drinking water to all residents of 06 Villages

14 Million Litres

of clean drinking water provided to date

All TF Supported Schools are provided with clean drinking water reaching **out to over 3,000 school students**

We are reaching **approximately 25,000 beneficiaries** through current interventions in drinking water

Bio-Saline Agriculture

2 ZERO HUNGER



End hunger, achieve food security and improved nutrition and promote sustainable agriculture.

80Bn m³

underground saline water



Infinite opportunities

~12

Farmers Trained on Pilot Bio-Saline Agriculture

~16

Species of Crops Successfully Grown

Three successful bio saline pilot projects in Thar with:

1. Xinjiang Institute of Ecology & Geography and Tando Jam Agriculture University
2. University of Karachi
3. Local farmers



“As I see it, it may cause kind of a reverse cycle....with such [bio-saline] projects people from other areas may migrate to Tharparkar for economic purposes”

- Prof. Dr. Mujeeb Sehrai
VC, Sindh Agricultural University, Tando Jam

Bio-Saline Fishing

2 ZERO HUNGER



End hunger, achieve food security and improved nutrition and promote sustainable agriculture.



100,000+ fish

of various species are being bred in saline water at Gorano Reservoir

60%

Average Breeding Ratio

Fit for Human Consumption



Women Dump Truck Drivers Program

5 GENDER
EQUALITY



Achieve gender equality and
empower all women and girls



26 Thari females
Trailblazing women
empowerment
Training to become heavy
dump truck drivers

Women Empowerment

5 GENDER
EQUALITY



Achieve gender equality and
empower all women and girls

- Special initiatives conceived and executed to empower local Thari women
- Women entrepreneurship program
- Donation of Sewing Machines – focal point for stitching TF schools uniform
- House documents in woman's name.
- Special programs to engage with women
- Provision of seed money for starting business
- First time ever, women attended football tournament to cheer for their children



Local Vendor and SME Development

9 INDUSTRY, INNOVATION
AND INFRASTRUCTURE



Build resilient infrastructure,
promote inclusive and
sustainable industrialization and
foster innovation

Rs. >1.3 BN

Worth contracts to local
vendors



**PO worth PKR 200,000 awarded to first
female vendor of Block-II, Ms. Dupatta
Bai from Thariyo Halepoto**

70+

Local vendors developed
and registered



68 Males : 02 Females

We are providing Block-II and
Thari vendors:

- Business Support
- Project Experience
- Trainings
- Sustained Incomes

SME Grants Program

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

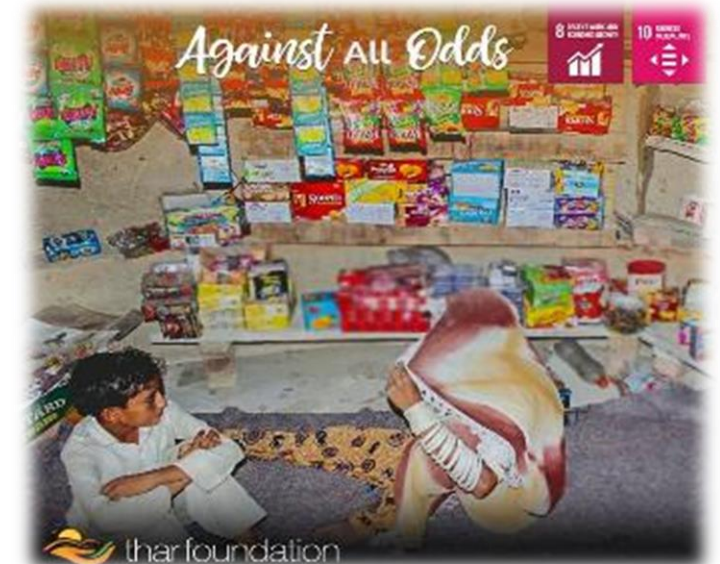
SME Grants Program is aimed at developing a more innovative and inclusive approach to fostering sustainable industrialization through granting seed money to people with disabilities.

10

Differently-abled individuals developed under the program (5 Females)

PKR 15,000

Average Increase in Monthly Income



Resettlement of Villages

11 SUSTAINABLE CITIES AND COMMUNITIES



Make cities and human settlements inclusive, safe, resilient and sustainable

- Over the life of the projects, 2 villages i.e. 450 households will be resettled
- Our commitment is to provide a much better lifestyle to our host communities than the one they have now

To This!



VIP: Village Improvement Program

11 SUSTAINABLE CITIES AND COMMUNITIES



Make cities and human settlements inclusive, safe, resilient and sustainable

All villages of Block-2 will be improved both physically as well as socially.

We have signed Social Contracts with each villager to:

- stop consumption of ghutka,
- stop consumption of raw alcohol, and
- committing to send their children to schools

In exchange for Village Improvement:

- Solar Power
- Street Pavements
- Public Amenities
- Pit latrines
- Drainage & Sanitation systems



3,000
Direct Beneficiaries

60+

Solar Street
Lights Installed

10+

Pit Latrines
Constructed

375

Households
Served



Bashir Ansari Green Park – 1st Ever Park in Thar

11 SUSTAINABLE CITIES AND COMMUNITIES



Make cities and human settlements inclusive, safe, resilient and sustainable

1st Ever Park in Tharparkar, the Bashir Ansari Park is spread over 65 acres of land and boasts a mini zoo and conservatory for domestic species of ducks; deers and peacocks.

80,000 tree saplings planted at the Bashir Ansari Park

Motorized Merry Go Rounds and Creation of Food Street in Progress



11 SUSTAINABLE CITIES AND COMMUNITIES



Make cities and human settlements inclusive, safe, resilient and sustainable



SALIENT FEATURES

- 1) CONSTRUCTION OF ENTIRE PARK WAS COMPLETED WITHIN 48 DAYS
- 2) PARK IS LOCATED ON TOP OF A DUNE AND AT AN IDEAL LOCATION FROM WHERE ENTIRE WATER POND IS VISIBLE
- 3) CONSTRUCTION OF PARK WAS DONE BY A LOCAL THARI CONTRACTOR
- 4) NOT A SINGLE TREE WAS HARMED DURING CONSTRUCTION ACTIVITIES
- 5) A DEDICATED PLAY AREA HAS BEEN CREATED IN PARK FOR LOCAL KIDS
- 6) THE PARK ALSO HAS THAR'S LARGEST WATER FOUNTAIN
- 7) CARETAKING OF PARK IS AWARDED TO A LOCAL CONTRACTOR OF GORANO VILLAGE

Gorano Bagh

11 SUSTAINABLE CITIES
AND COMMUNITIES



Make cities and human
settlements inclusive, safe,
resilient and sustainable

1,500 Acres

Area of the Gorano Pond

45,000 square feet

Area of the Gorano Park



1,100

Average Monthly
Visitors



Tree Species Planted:

Babul Trees

Neem Trees

Sarenh Trees



Thar Million Trees

13 CLIMATE ACTION



Take urgent action to combat climate change and its impacts

~350,000 trees planted

In collaboration with visitors and local community
Project completion date = June 2019

~100 acres land

Covered under the project to date

~ 07 species

Of indigenous varieties planted suited for desert climate

~22,000 Metric Tons/Year

Of CO2 Sequestration (at full capacity of 1Mn Trees –
Current Sequestration is ~8,300 Metric Tone/Year)

Technical MoU with SFD

MoU Signed with Sindh Forest Department to provide assistance with Afforestation Program.





PROSPEROUS THAR

Islamkot taluka will become SDG compliant ahead of national timeline leading to **social and economic upliftment** of the region

YEAR 2024: THAR DREAM TO THAR REALITY

ENERGY SECURITY TO PAKISTAN

Thar Block-II reaches full potential and fulfills its promise – adding 5280MW to the grid

