

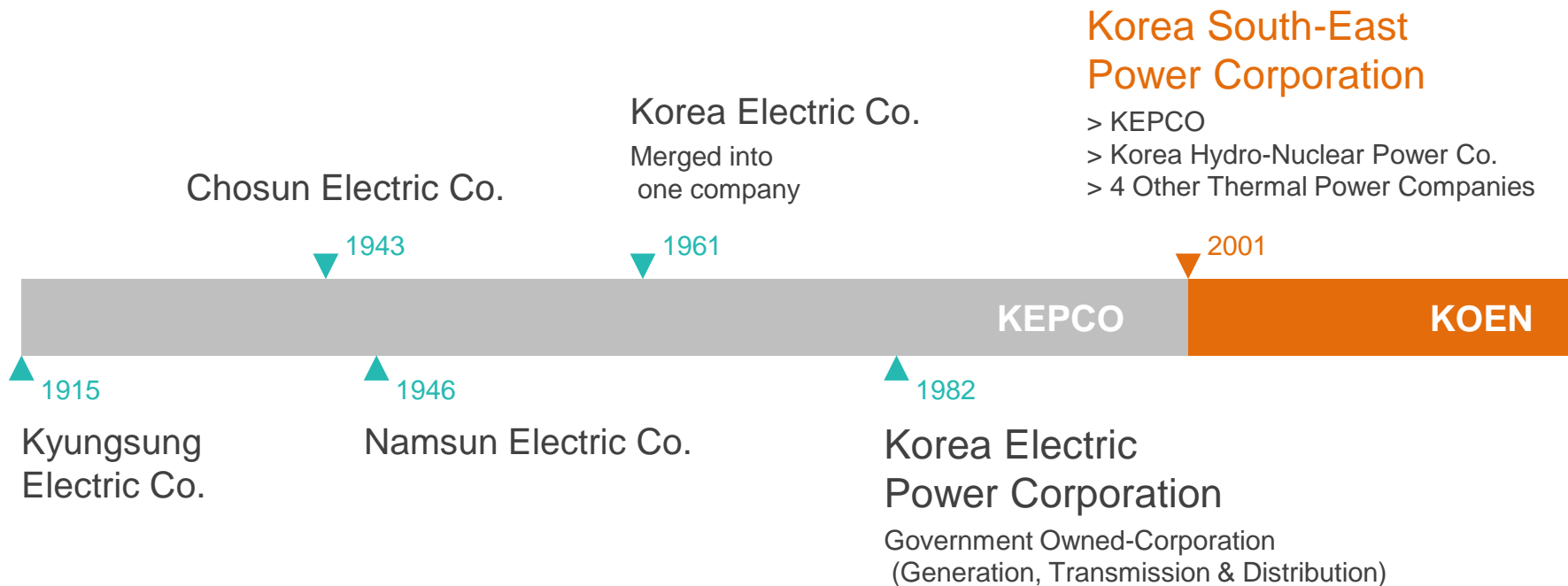
# Pakistan Gulpur HPP

## (Case Study)



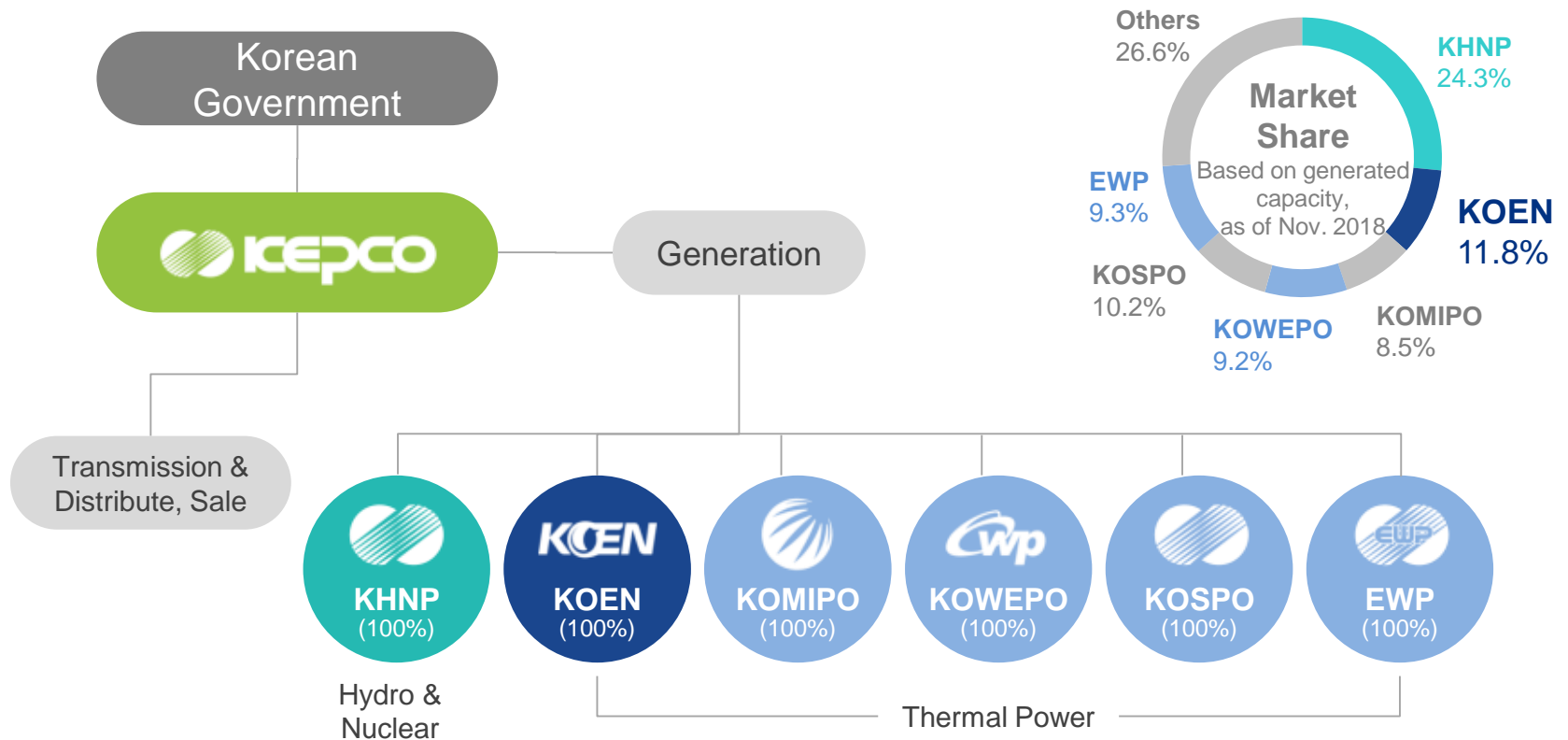
# INTRODUCTION OF KOEN

**KOEN** was spun off from **KEPCO**(Korea Electric Power Corporation) as a part of the government's restructuring plans ,and became one of five generation companies in April 2, 2001.



# INTRODUCTION OF KOEN

**KOEN** specializes in thermal power generation and plays a leading role in power industry. As one of the Government owned power suppliers in Korea, **KOEN** that owns 5 main power plant complexes with total installed capacity of 10,377MW provided 11.8% of Korea's total generating electricity in 2018.



# INTRODUCTION OF KOEN

## KOEN Introduction

Company Name	> Korea South East Power Co.
Business Type and etc.	> Power Generation
Main Production	> Electric Power, Heat
Establishment Date	> April 2, 2001
Number of Employees	> 2,500

Assets	9.10Billion USD
Liabilities	4.50 Billion USD
Revenue	4.60 Billion USD
Capacity of Equipment	10,377 MW
Power Generation Quantity	61,323 GWh
Credit Rating	Aa2 (Moody's) / AA (S&P)/AA-(Fitch)

(As of Dec. 2018)



# INTRODUCTION OF KOEN

**KOEN** has actively developed overseas projects in the field of construction, test run service, O&M, renewable energy and resource development.



## Thermal Power Project

- 1 Indonesia Kaltim-3 Coal Power Plant (Under Development)
- 2 Indonesia Amurang Coal Power Plant O&M
- 3 India Mundra Commissioning Consulting
- 4 Bahrain Al Dur Commissioning Consulting
- 5 Turkey Tufanbeyli Commissioning Consulting
- 6 Philippines Putting Bato Commissioning Consulting
- 7 Indonesia Palabuhan Ratu Consulting

## Bituminous Coal Mine

- 1 Indonesia Adaro Bituminous Coal
- 2 Australia Moolarben Bituminous Coal

## Renewable Energy Project

- 1 Bulgaria Photovoltaic Plant
- 2 Chile Photovoltaic Plant (Under Construction)

## Hydro Power Project

- 1 Nepal UT-1 Hydro Power Plant (Under Development)
- 2 Pakistan Gulpur Hydro Power Plant (Under Construction)
- 3 Pakistan Asrit Kedam Hydro Power Plant (Under Litigation)
- 4 Pakistan Kalam Asrit Hydro Power Plant (FS stage) 5

# GULPUR HPP

## (General Information)

Company	MIRA Power Limited
Capacity & Type	<b>102MW</b> – ROR Scheme
Annual Generation	475GWh per annum
Construction Period	50 Months
Net Head	56.7m
Design Flow	201 m <sup>3</sup> /sec
Turbine Type	2 Units of 51MW Kaplan



## PROJECT LENDERS

**ADB** Asian Development Bank  
Fighting Poverty in Asia and the Pacific

**IFC** International Finance Corporation  
World Bank Group

**Korea Eximbank**

**CDC**  
**FMO**

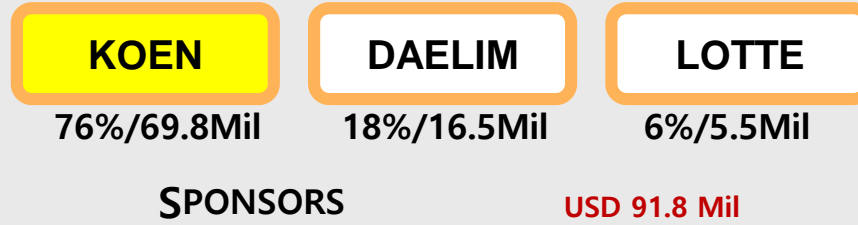
## MAIN SPONSOR

**KOEN** KOREA SOUTH-EAST POWER CO.

# PAKISTAN GENERATION POLICY 2015 (Salient Features)

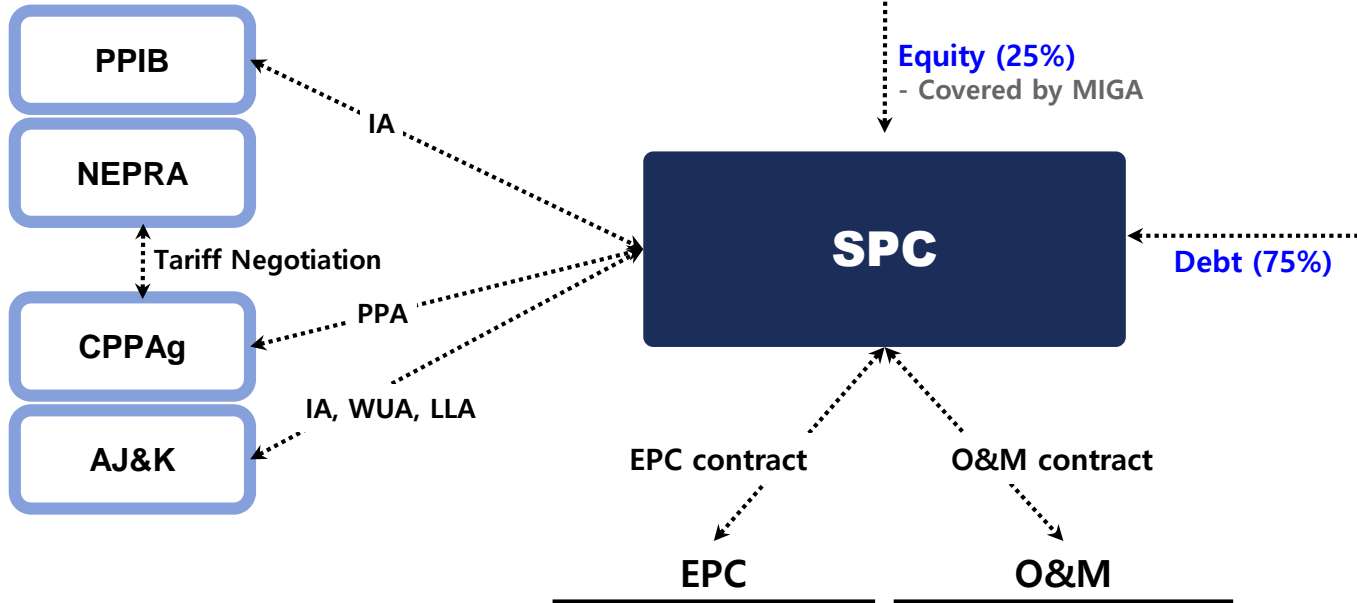
<b>Exemption</b>	<ul style="list-style-type: none"> <li>▪ Corporate Income Tax, Turnover Tax, Withholding Tax and Sales Tax</li> <li>▪ Only 5% concessionary Import Duty on plant &amp; equipment not manufactured locally</li> </ul>
<b>GoP Guarantees</b>	Obligations of Power Purchaser & Provinces
<b>Protection</b>	against Political Force Majeure and Change in Law/Tax
<b>Hydrological Risk</b>	taken by Power Purchaser
<b>Attractive ROE (IRR based)</b>	<p>17% ROE guaranteed by the Regulator(NEPRA)</p> <p>※ NEPRA : National Electric Power Regulatory Authority</p>
<b>Tariff Re-openers for Hydropower Projects</b>	<ul style="list-style-type: none"> <li>▪ Cost Escalation in Civil and M&amp;E works</li> <li>▪ Resettlement Cost</li> <li>▪ Cost variation due to Geological Conditions in Tunnels</li> <li>▪ Fluctuation of Interest, FX, Custom duty</li> </ul>
<b>Tariff Indexation</b>	Inflation (US CPI & Pakistan WPI), Foreign Costs US\$/Rupee parity
<b>GoP assures</b>	Conversion of Pakistan Rupee & Remittance of Foreign Exchange for Projects
<b>Transmission Line</b>	<p>NTDC is responsible of construction, operation and maintenance for TL</p> <p>※ NTDC : National Transmission &amp; Distribution Company</p>
<b>Governing Law</b>	English Law for Direct Implementation Agreement(DIA) where Foreign Lenders are involved

# PROJECT STRUCTURE



## LENDERS USD 275.6 Mil

<b>ADB</b> (23.6%)	Tranche 1	ADB	45	<b>65.0</b>
	Tranche 2	CCF	20	
<b>IFC</b> (38.0%)	A Loan	IFC	50	<b>104.7</b>
	B Loan	FMO	17	
	MCPP	PBC	38	
<b>K-EXIM</b> (32.3%)		K-EXIM	89	<b>88.8</b>
<b>CDC</b> (6.1%)		CDC	17	<b>17.1</b>



- IA** IMPLEMENTATION AGREEMENT
- WUA** WATER USAGE AGREEMENT
- LLA** LAND LEASE AGREEMENT
- PPA** POWER PURCHASE AGREEMENT

- |   |   |
|---|---|
| <b>EPC</b>  | <b>O&amp;M</b>  |
| <ul style="list-style-type: none"> <li>✓ DAELIM : 75%</li> <li>✓ LOTTE : 25%</li> </ul> | <ul style="list-style-type: none"> <li>✓ KOEN : 100%</li> </ul> |

- CCF** CANADIAN CLIMATE FUND
- FMO** NETHERLAND DEV. FINANCING CO.
- MCPP** MANAGED CO-LENDING PORTFOLIO PROGRAM
- PBC** PEOPLE'S BANK OF CHINA
- CDC** COMMONWEALTH DEV. CORPORATION

# PROJECT STRUCTURE


## Sponsors Composition

- ✓ **KOEN** : Generation & Utility company owned by Korean Government
- ✓ **DAELIM & LOTTE** : World renowned & experienced contractors
  - Based on Sponsor's high credit rating → Stable project management
  - GoP's positive support → PF from international financial institutions


## Lenders Composition

- ✓ **ADB / IFC** : Multi-lateral Development Banks (MDBs)
- ✓ **K-EXIM** : Korean Export Credit Agency (ECA)
- ✓ **CDC / FMO** : Development Finance Institutions (DFIs)
  - Based on abovementioned Lender's participation
  - Political risk mitigation

# PROJECT AWARD



**Asia Pacific Hydropower  
Gulpur Hydropower**




**Mira Power Limited**

Korea South-East Power Co.  
DAELIM Industrial  
Lotte Engineering & Construction

Asian Development Bank  
Export-Import Bank of Korea  
International Finance Corporation


Kabarji & Talibuddin  
RIA A Baker Gillette  
Shearman & Sterling



03 March 2016



**BRONZE Award for  
Environmental Upgrade  
of the Year**

**102 MW GULPUR HYDROPOWER  
PROJECT, PAKISTAN**  
*Powered by*  
**MIRA POWER LIMITED  
(SUBSIDIARY OF KOREA  
SOUTH-EAST POWER CO. LTD (KOEN))**


  
Hosted by Publisher Tim Charlton







**GULPUR HYDROPOWER PROJECT**  
US\$367 MILLION FINANCING

**MIRA POWER**  
SPONSOR

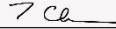
BEST ENERGY/RENEWABLE ENERGY DEAL -  
HYDRO  
PAKISTAN  
THE ASSET ASIAN AWARDS


  
Daniel Yu  
Editor in Chief

**GOLD Award for  
Hydro Power Project of the Year**

**102 MW GULPUR  
HYDROPOWER PROJECT, PAKISTAN**  
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(SUBSIDIARY OF KOREA  
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Hosted by Publisher Tim Charlton



# CONSTRUCTION PROGRESS

**Powerhouse**  
Civil Works – 100 %  
M&E Works – 84%

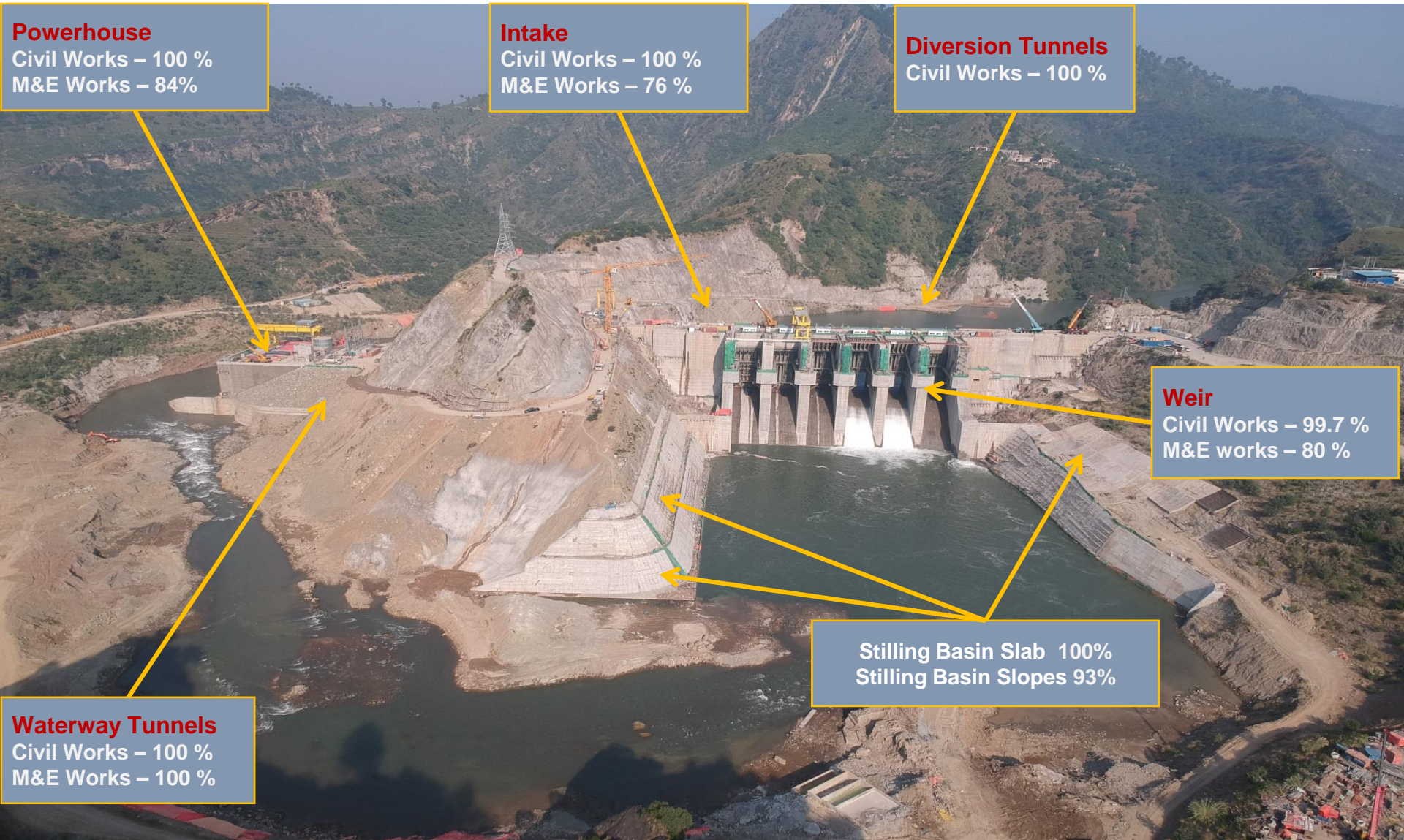
**Intake**  
Civil Works – 100 %  
M&E Works – 76 %

**Diversion Tunnels**  
Civil Works – 100 %

**Weir**  
Civil Works – 99.7 %  
M&E works – 80 %

**Stilling Basin Slab 100%**  
**Stilling Basin Slopes 93%**

**Waterway Tunnels**  
Civil Works – 100 %  
M&E Works – 100 %



# PROBLEM OVERCOMING

## Flood (19 Mar, 2016)



(Loss of Bridge)



(Dyke Destruction)



# PROBLEM OVERCOMING

Flood (6 Apr, 2017)



# PROBLEM OVERCOMING

## Threat Alert (4 Aug, 2017) → Evacuation from Site

THE EXPRESS TRIBUNE PAKISTAN

### Security threat: Korean workers pull out of Kotli hydro power project – for now

By Qadeer Tanoli Published: August 6, 2017

431 SHARES [f SHARE](#) [TWEET](#) [EMAIL](#)

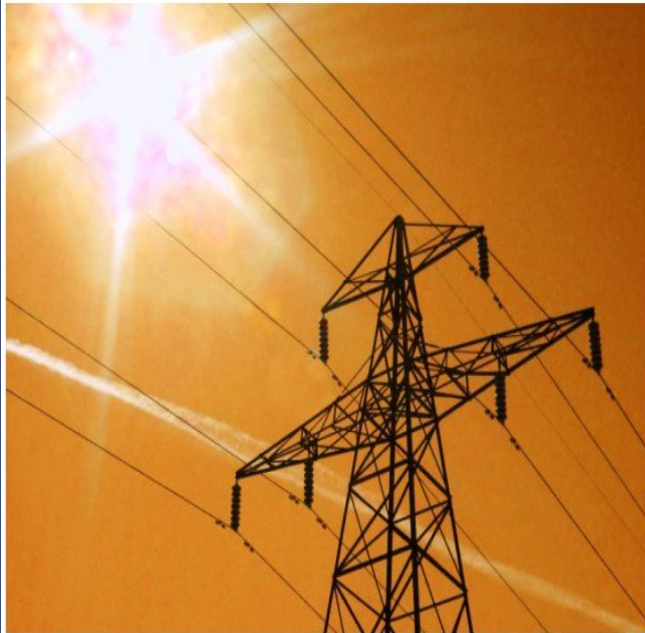


PHOTO: FILE

ISLAMABAD: The fate of the Gulpur Hydro Power Project hangs in the balance after the district administration of Kotli, in Azad Jammu and Kashmir, failed to adopt security measures for Korean employees who were forced to leave the project temporarily.

**BUSINESS RECORDER**  
Simultaneously published from Islamabad, Lahore & Karachi  
Founded by M.A. Zuberi  
Islamabad, Monday 7 August 2017, 14 Ziq'ud 1438

**Security threats by Indian border team**  
**Work on Gulpur Hydropower Project halted**

**Any bid to damage Indus water treaty deal to create unrest: Asif**

**SARMAD MAHMUD**  
SIALKOT: Foreign Minister Khawaja Muhammad Asif on Sunday said that any attempt to damage Indus water treaty agreement will create unrest in subcontinent.

Talking to journalists, he said that Pakistan is peace loving country and wanted cordial relations with all the countries on equal footings. The minister further alleged that India is violating the Line of Control.

Pakistan is showing flexibility just to maintain peace for the largest interest of masses of both the side adding that Pakistan is fully capable to protect its geographical frontiers and flexibility by showing by Pakistan should not be underestimated, he said.

Despite the serious Indian violations Pakistan is making adequate efforts for maintaining peace in the region for the largest interest of the masses of both the sides he said.

The Minister said that Pakistan is making serious efforts to resolving all issues with India through talks because we believe that talks are the best mode to find out ways and means for addressing issues.

He said that India is committing serious human rights violations in the held Kashmir since long and killing the innocent Kashmiris struggling for the liberation of their motherland from Indian yoke. It is high time that Kashmiri dispute should be resolved in accordance with the aspirations of Kashmiris and in the light of UN resolutions for sustainable peace in the region, Asif concluded.

of the efforts made by Dastin to ensure other projects in Azad Jammu & Kashmir.

An unconventional threat where Indian IBAI is planning to target Gulpur Hydropower Project by planting IEDs has never been received before.

But any development project has been the target of such a threat.

Critics escalated when Indian print and electronic media launched a propaganda campaign maintaining that Dastin has backed out from the ongoing projects as IFC, ADB and KEXIM Bank expressed their inability to finance the project in districts Kotli of Azad Jammu & Kashmir and so far forty percent of the project progress has been achieved.

The project is being implemented by Mira Power Limited a subsidiary of KOEN, Dastin and Lams.

Despite the efforts of concerned law enforcement agencies to boost up the security of the Project, the contractor decided to evacuate project site as the safety of his employees was paramount and any further incident may lead to diversion

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# PROBLEM OVERCOMING

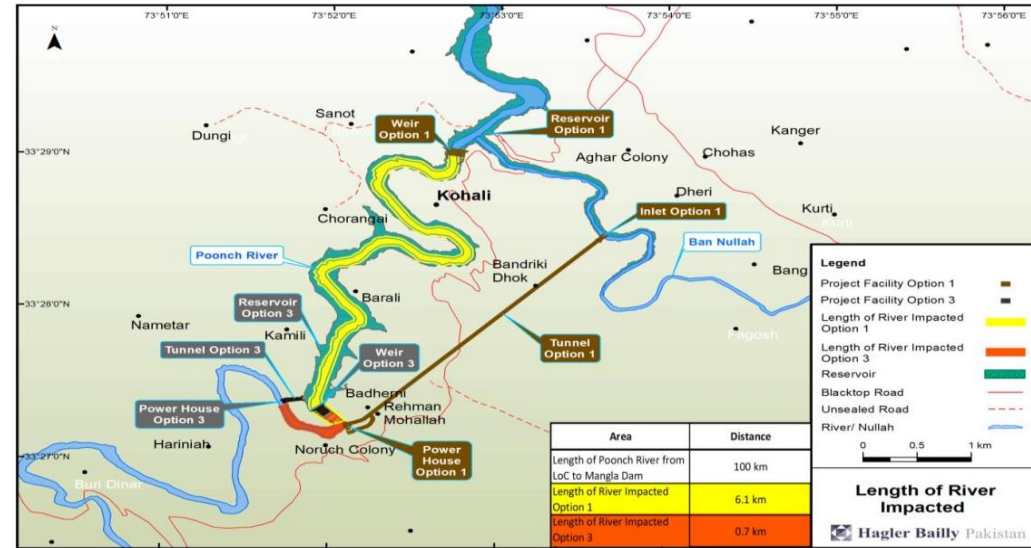
## Act of War(Pakistan-India) (14~28 Feb, 2019)



# ENVIRONMENTAL CHALLENGE

## Critical Habitat and ESIA and CIA Challenges

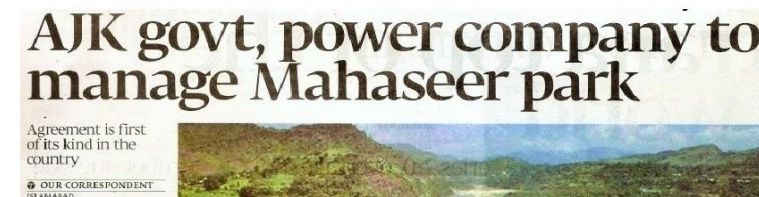
- ❑ AJK Wildlife legislation, ADB and IFC as lenders require 'net gain' in biodiversity in Critical Habitat, in this case triggered by national park, Endangered Mahaseer, and Critically Endangered Kashmir Catfish.
- ❑ Given the state of protection in the Poonch River, there will not be much of environmental resource left to protect if the present trends continue.
- ❑ The BAP will address basin level protection of wildlife which is in jurisdiction of AJK Fisheries and Wildlife Department.
- ❑ Implementation of the BAP therefore requires supports from the government. Additional resources for the BAP will be provided by the Project.



DAILY TIMES - 23 February 2016



EXPRESS TRIBUNE - Islamabad edition - 25 February 2016

THE NEWS  
23 Feb 2016

### AJK, Mira Power sign biodiversity agreement

**News Desk**

ISLAMABAD : The Government of Azad Jammu & Kashmir (AJK) and Mira Power Ltd - a subsidiary of Korea South East Power (KOSSEP)'s developing 102MW Gulgor Hydro Power Project - on Monday signed an agreement for implementation of a Biodiversity Action Plan (BAP) for the Poonch River Mahaseer National Park located in the districts of Kotli and Mirpur.

Farhat Mir, Secretary Forests, signed the agreement on behalf of the government of AJK, while Iqbal Taseer, CEO of Mira Power signed on behalf of the company.

The agreement is the first of its kind in Pakistan where the government and the private sector are formally collaborating on a long term basis to manage a national park, a statement said. The national park was established by the AJK Government for the protection of the Golden Mahaseer which is a prized angling fish listed as endangered by IUCN. The Poonch River is also rich in biodiversity and is home to a number of other fish

# CSR PROGRAM - COMPLETED

1- Construction of the Damaged Thalalay Bridge



4- Renovation of Government Boys High School Gulhar Kotli



7- Scholarship for the Students of Government Boys High School Barali



2- Installation of 9.7 KW Solar System in Government Boys High School Kotli



5- Renovation of Government Girls High School Barali



8- Renovation, Cultural Exchange, Sports and Learning Activities by KOEN Volunteers



3- Installation of 9.7 KW Solar System in Government Inter College Gulpur



6- Renovation of Government Girls Secondary School Barali



9- Cleft Lip Treatment of a Child in South Korea



# CSR PROGRAM – UNDER PROGRESS

## 1- Water Supply of Rehmani Muhallah Barali



## 3- Upgradation of Basic Health Unit Barali



## 2- Maintenance of Barali Link Road



## 4- Construction of Government Primary High School Jatha

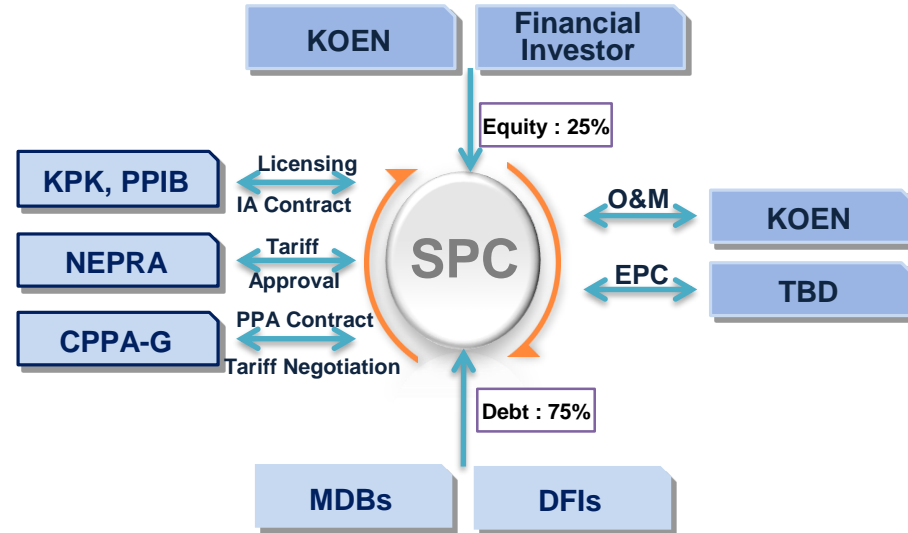


# ASRIT KEDAM HPP (2<sup>nd</sup> Project developing by KOEN)

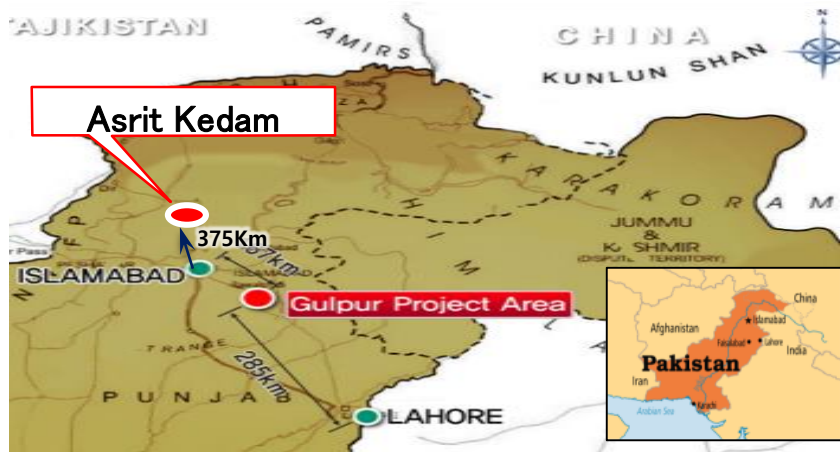
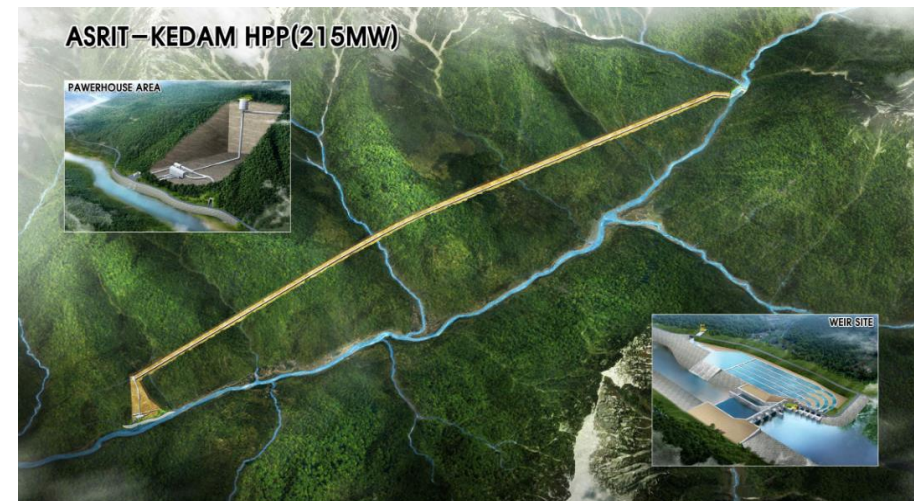
## Project Summary

Project Name	Asrit Kedam HPP
Installed Capacity	215MW(Estimated) [60.9MW×3Units + 32.2MW]
Location	Swat River, Mingora District, KPK
Annual Generation	873.3GWh(Plant Factor 46.4%)
Total Cost	504 Mil.USD
Debt : Equity	75% : 25% (Subject to Lender's consent)
Assumed Tariff	8.12 Cent/kWh(F/S Stage)
Period	30 years+5years construction

## Project Structure



## Project Aerial View



# KALAM ASRIT HPP (3<sup>rd</sup> Project developing by KOEN)

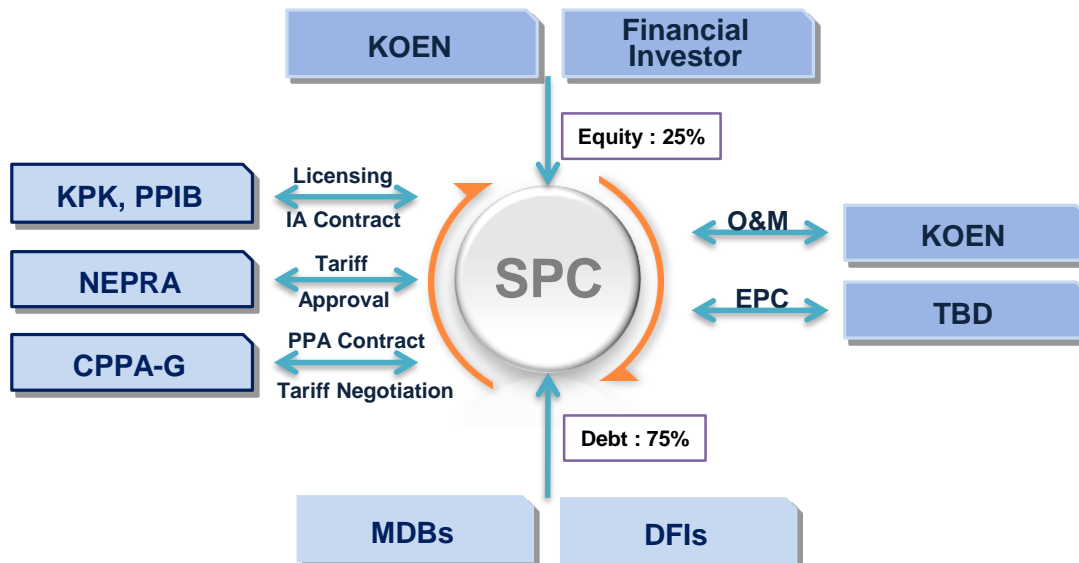
## Project Summary

<b>Project Name</b>	<b>Kalam Asrit HPP</b>
Installed Capacity	238MW(Estimated)
Annual Generation	920GWh(Plant Factor 44%)
Total Cost	516.1 Mil.USD
Assumed Tariff	8.6 Cent/kWh(F/S Stage)
Period	30 years+5years construction



Powerhouse

## Project Structure



Weir Site

# Thank You



Korea South-East Power Co.  
Energy Business Office

We will make the world better place.  
KOEN will present shining future for you.  
KOEN purses a healthy and constantly growing company with changing  
and innovating mind and crates the values for the better future.

**KOEN**