



JSW Hydro Energy Limited : Corporate presentation

April 2021

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JSW Group

JSW Group – one of the prominent Indian corporates

- ✓ India's leading integrated steel producer by capacity
- ✓ Installed crude steel production capacity: ~18 MTPA
- ✓ Market Cap: USD 17.1 Bn



- ✓ Engaged in port development & operations
- ✓ Operational capacity: 113 MTPA



- ✓ Commenced operations in March 2019
- ✓ Annual Capacity: 125,000 KL; only fully-automated water-based plant in India



- ✓ Supporting Indian sports ecosystem
- ✓ Teams Owned: Bengaluru FC, Delhi Capitals, Haryana Steelers



USD 12 Bn¹ Group
Amongst India's largest
conglomerates



- ✓ Engaged across value chain of power business
- ✓ Installed capacity: ~4.5 GW
- ✓ Market Cap: USD 1.9 Bn



- ✓ Manufacturer of PSC, OPC and GGBS cement
- ✓ Operational capacity: ~14 MTPA



- ✓ Early-stage, tech-focused, VC fund
- ✓ Portfolio: Purple, IndusOS, Homelane



- ✓ Social development arm of JSW Group
- ✓ Footprint across 11 states



JSW Energy Overview

JSW Energy – company overview

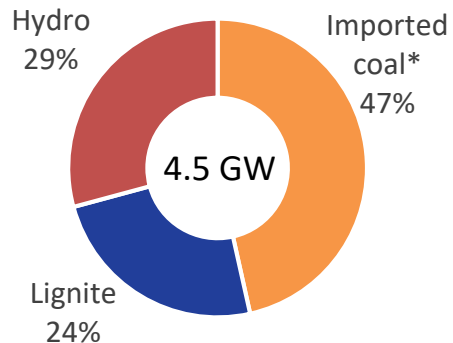
Business Overview

- Leading Independent Power Producer with 4.5 GW operational capacity
- Listed entity in India with market cap of ~USD 1.9 Bn
- Medium term target to reach 10.0 GW capacity with RE and Hydro contributing to 70% of total capacity from current 30%
- Portfolio diversified across geographies, fuel mix and offtake arrangements
- ~82% of total portfolio tied under Long-term PPA; Set to reach ~87% in FY22
- Majority of long term PPAs under two-part tariff structure with pass through of fuel cost and exchange-rate risks
- Projects are placed in the DISCOMs' top quartiles of the merit order dispatch

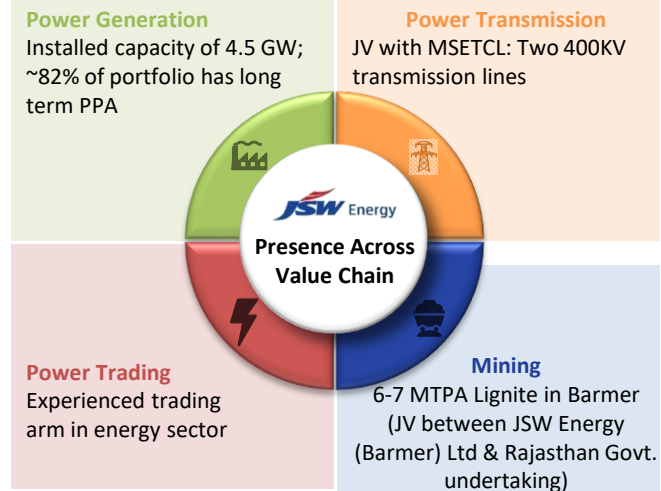
JSW Energy Portfolio Overview

Plant	Location	Capacity (MW)	Fuel Type	Status
Ratnagiri	Maharashtra	1,200 MW	Thermal	Operational
Barmer	Rajasthan	1,080 MW	Thermal	Operational
Vijayanagar	Karnataka	860 MW	Thermal	Operational
Nandyal	Andhra Pradesh	18 MW	Thermal	Operational
Karcham Wangtoo	Himachal Pradesh	1,000 ¹ MW	Hydro	Operational
Baspa II	Himachal Pradesh	300 MW	Hydro	Operational
Kutehr	Himachal Pradesh	240 MW	Hydro	Under Construction
Solar	AP, Raj, MH, WB	10 MW	Solar	Operational

Segment-wise Installed Capacity³



One of the leading IPPs in India



Highlights



Amongst strongest balance sheet in India power sector (Net Debt/Equity < 0.5x)²

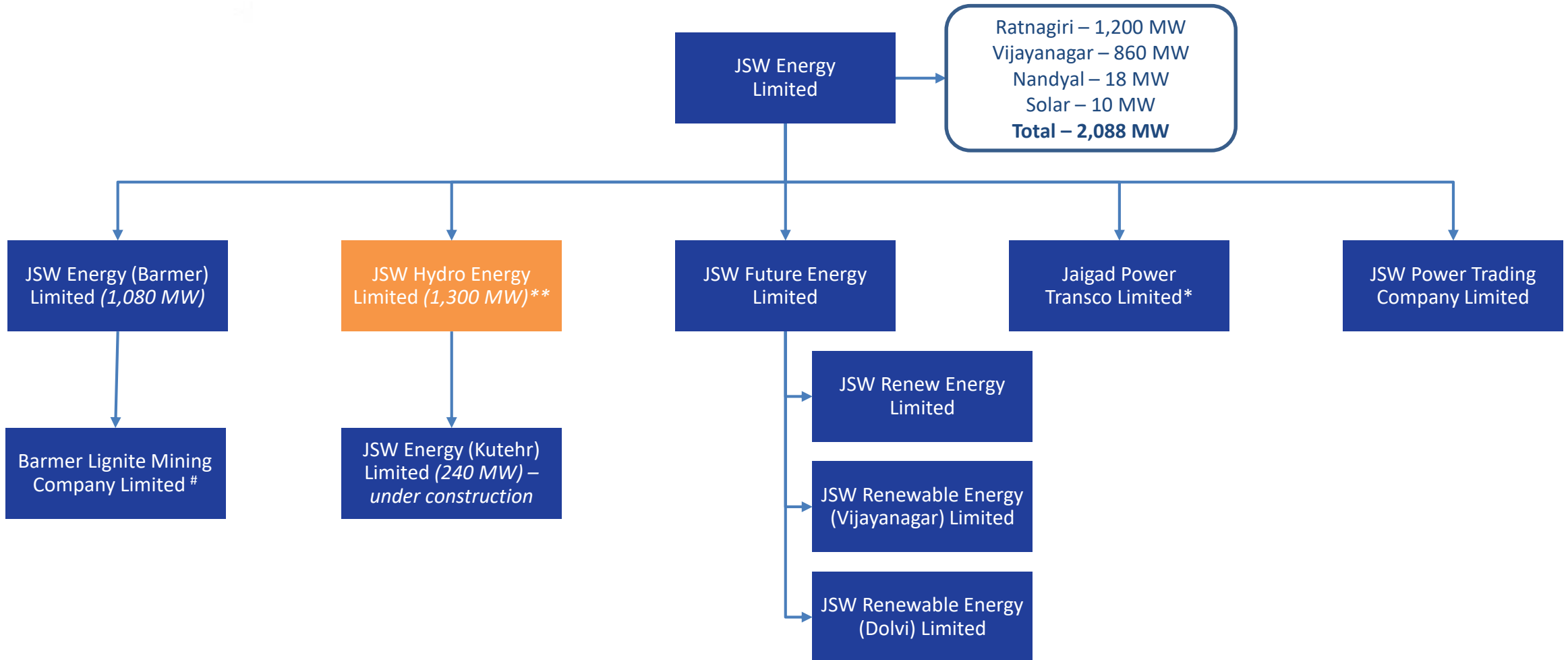


Sound operating efficiency characterized by one of the lowest O&M cost in the sector in India



Credit Rating: AA- Stable (India Ratings & Research – a Fitch group company)

JSW Energy – corporate structure



All above major subsidiaries shown are wholly owned subsidiaries except the following -

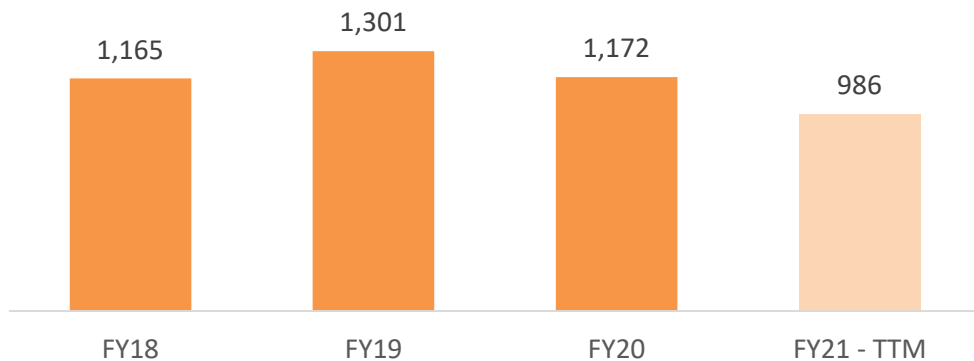
* JPTL is a 74:26 JV between JSWEL and Maharashtra State Electricity Transmission Company Limited (MSETCL)

**Current approved operational capacity of Karcham HEP at 1,000 MW. Awaiting CEA approval for uprating to 1,091 MW

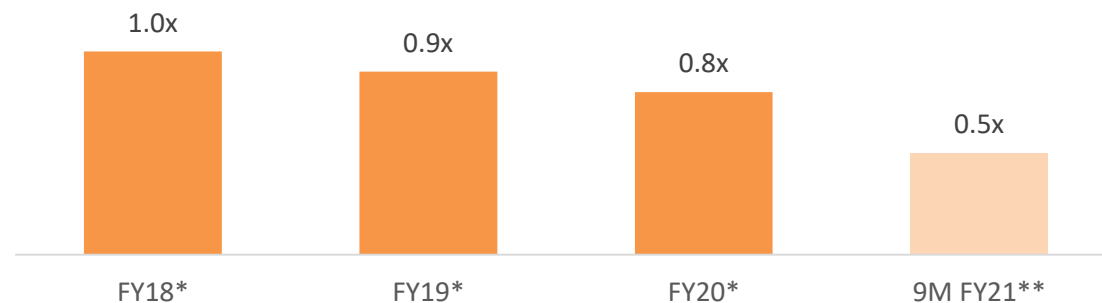
BLMCL is a 51:49 JV between Rajasthan State Mines and Minerals Limited (RSMML) and JSWE(B)L

Operational and financial performance

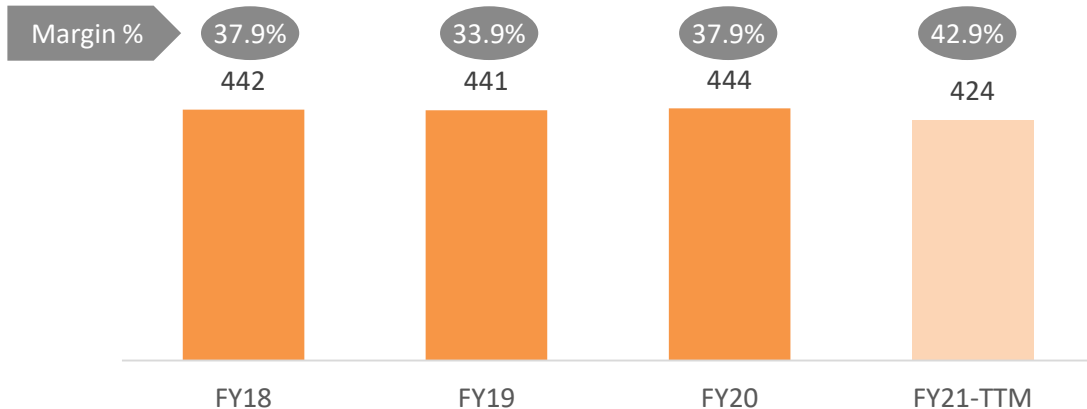
Revenue (US\$ mn)



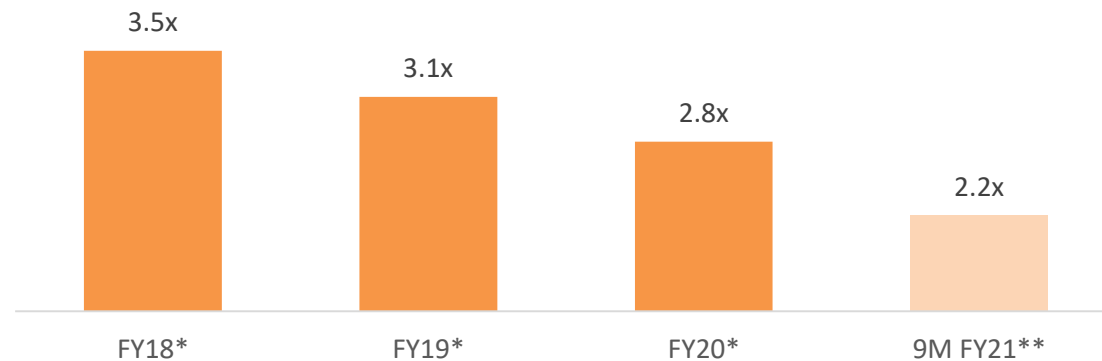
Net Debt/Equity



EBITDA (US\$ mn)



Net Debt/EBITDA



Note: Exchange rate: USD1 = Rs.73.0536; TTM : Trailing 12 Months as on Dec' 20; EBITDA margin defined as EBITDA/revenue; Numbers rounded off to nearest decimal

* As of 31-Mar

** As of 31-Dec

Professionally managed business backed by strong stakeholder support

Promoter Director



Sajjan Jindal
*Chairman and
Managing Director*

Key Management Personnel



Prashant Jain
*Joint Managing
Director & CEO*



Pritesh Vinay
*Chief Financial
Officer*



Monica Chopra
*Company
Secretary*

Independent Directors



**Chandan
Bhattacharya**



**Rupa Devi
Singh**



**Sattiraju
Seshagiri Rao**



Sunil Goyal

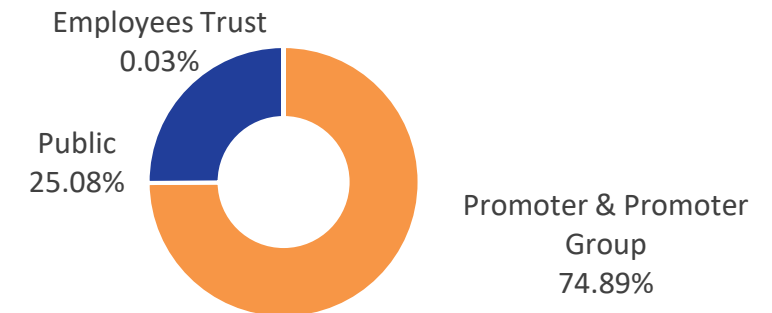


**Munesh
Khanna**

Strong parentage of JSW Group

- JSW Group is a US\$12 billion leading conglomerate known across the country as “strategic first mover”
- Spearheaded initiatives in core sectors like Steel, Energy, Cement, Infrastructure, Ventures, Paints & Sports
- Global presence across India, South America, South Africa and Europe

Shareholding (as of Dec-20)



Strong public stakeholder backing

Vanguard[®]

**Nippon India
Mutual Fund**
Wealth sets you free



SBI MUTUAL FUND
A partner for life.

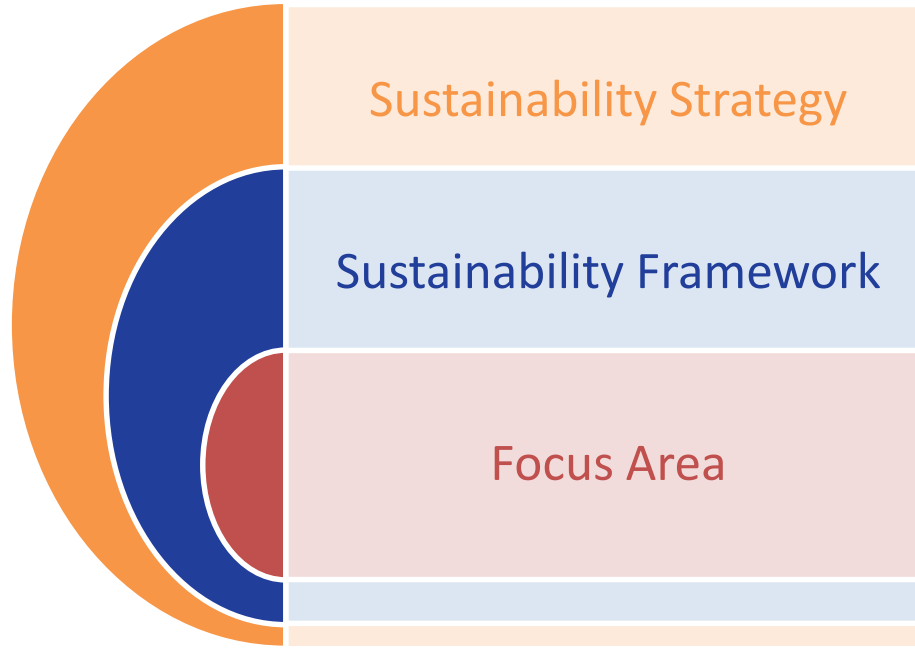
HSBC
Global Asset Management

Dimensional



Focus On ESG – JSW Energy

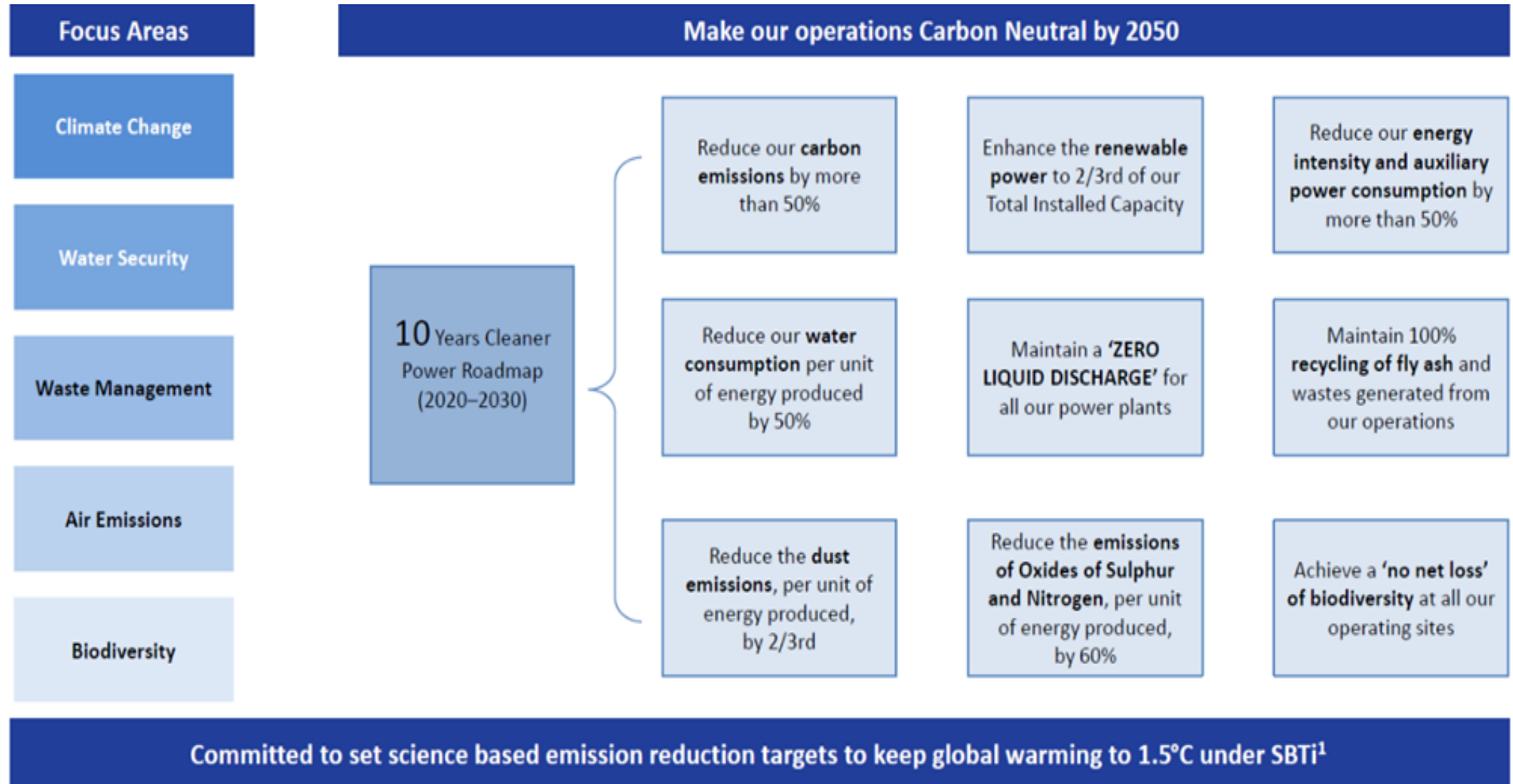
Sustainability Framework – aim to make our operations Carbon Neutral by 2050



Adopted JSW Policies

1.	Climate Change	4.	Water Resource Management	7.	Community Involvement & Social Development	10.	Air Emissions	13.	Cultural Heritage	16.	Operating Our Business Ethically
2.	Energy	5.	Waste Water	8.	Human Rights	11.	Biodiversity	14.	Labour Practices and Employment	17.	Making Our World a Better Place
3.	Resource Conservation	6.	Waste	9.	Indigenous People and Resettlement	12.	Local Considerations	15.	Employee Health, Safety & Well-Being	https://www.jsw.in/groups/sustainability-policies	

Sustainability targets – Our ten commitments



(1) Collaboration between CDP, the United Nations Global Compact, World Resources Institute (WRI) and the World Wide Fund for Nature (WWF)

Committed to responsible stewardship with focus on sustainability, health and safety

JSW Energy ESG Ratings

- **MSCI : BB**, amongst the highest rated power producers with thermal portfolio in India
- **CDP: B**, highest rating achieved by any Power producer in India



3.25x

Net solar power generation



7.17%

Reduction in direct emissions



100%

Fly ash utilisation



Zero Effluent Discharge

At all our sites



5.17 training man-days

Of executive employees



3,50,000

Mangrove saplings planted over an area of 70 hectares⁽¹⁾



67,381

Direct beneficiaries impacted by net-positive social, environmental and economic contribution



Accident free operations

Best-in-class safety standards are being adopted in Karcham Wangtoo and Baspa II HEPs⁽²⁾



Zero

Lost Time Injuries (LTIs) reported On our sites



JSW Hydro Energy Overview



A. Overview

Snapshot of JSW Hydro Energy

Largest Private Hydro Portfolio In India by capacity

- Wholly-owned subsidiary of JSW Energy Ltd
- Owns and operates two hydro power plants in Himachal Pradesh with combined capacity of 1,300¹ MW
- Currently constructing 240 MW Hydro plant at Kutehr, Himachal Pradesh²

Key Highlights:

- ✓ Run-of-the-river projects with state-of-the-art infrastructure
- ✓ Demonstrated track record of 18 years of steady and efficient performance of the Projects
- ✓ “Must Run” Status for Hydro Projects and placement in Discom’s top 2 quartiles of Merit order dispatch which mitigates offtake risk
- ✓ Regulated Return assets with robust payment security mechanisms to mitigate receivable risks
- ✓ Levelized tariff for Hydro projects is highly competitive vs tariffs of New Renewables

Baspa II HEP

- Capacity: 300MW
- Configuration: 3x100MW
- Units operating: Since 2003
- Power Offtake: Long Term PPA
- Location: Himachal Pradesh

Karcham Wangtoo HEP

- Capacity: 1,000MW¹
- Configuration: 4x250MW¹
- Units operating: Since 2011
- Power Offtake: Long Term PPA
- Location: Himachal Pradesh

Kutehr HEP (Under Construction)

- Capacity: 240MW
- Configuration: 3x80MW (under construction)
- PPA under finalization with Haryana Discom
- Location: Himachal Pradesh
- Expected COD: FY25

(1) Current approved operational capacity of Karcham Wangtoo at 1,000 MW. Awaiting CEA approval for uprating to 1,091 MW

(2) Through a wholly owned subsidiary of JSW Hydro Energy Ltd

Karcham Wangtoo Plant – Overview



- Karcham Wangtoo hydro plant is located on river Sutlej
- Its diversion dam is located at village Karcham and the powerhouse is located near village Wangtoo on NH-5
- The project comprises of 44.60 km of tunneling in the Himalayan geology
- The concrete gravity dam used to generate power is 88m high, 53m of which is below the riverbed level
- The plant's pressure shafts feed four generating units of 250MW each, installed in an underground powerhouse at Wangtoo

Location	• Kinnaur District, Himachal Pradesh
Concession Details	• Operational concession till September 2051 ¹
Commission Details	• 13 th September 2011
Capacity	• 1,000 ² MW
Saleable Capacity	• 880 MW
Design Energy	• 4,131 million units
Total Power Generated	• FY20: 4,615 million units
Plant Availability Factor	• Plant Availability maintained above normative level (90%) for FY13-20
PPA	<ul style="list-style-type: none"> • Signed PPA through PTC India Ltd. for entire saleable capacity till September 2046³ • 12% free power of the electricity generated is to be supplied to the Government of Himachal Pradesh revising to 18% during FY24

Equipment suppliers

ANDRITZ

Turbine

VOITH

Generator

ABB

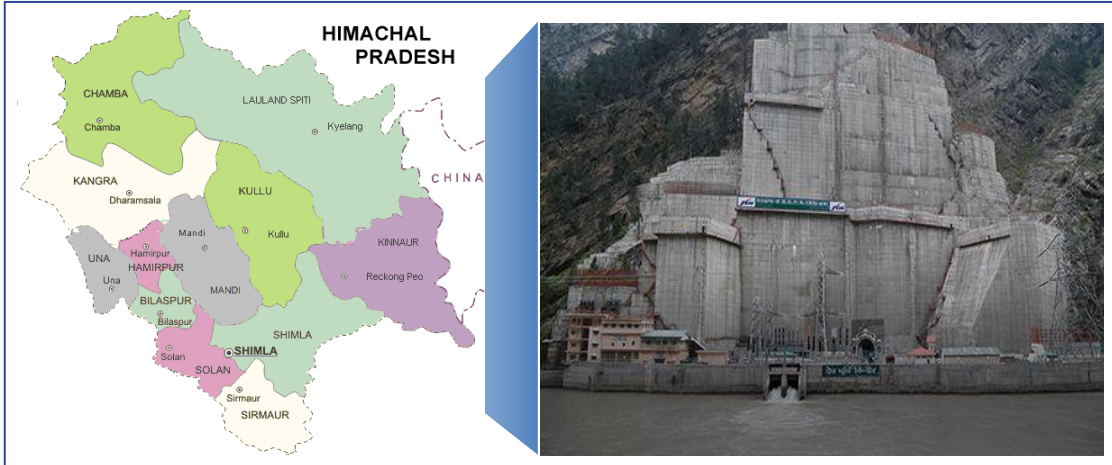
Generator
Transformer

ALSTOM

400kV GIS

- (1) With a provision to extend for a period of 20 years mutually agreed upon
- (2) Current approved operational capacity at 1,000 MW. Awaiting CEA approval for uprating to 1,091 MW
- (3) PPA close date with provision to extend for mutually agreed upon period

Baspa II Plant – Overview



- Baspa Plant is located in the higher reaches of the Himalayas
- Its diversion barrage is located in village Kuppa, near Sangla, and the powerhouse is located near village Karcham, upstream of the Karcham Dam
- Plant’s underground powerhouse accommodates three 100 MW Pelton turbine-generating units
- A 400 KV switchyard with generator transformers and gas-insulated switchgear is installed underground in a cavern
- A double-circuit 400 KV transmission line feeds into the Jhakri sub-station

(1) PPA close date with provision to extend for further 20 years
 (2) For the entire concession period

Location	• Kinnaur District, Himachal Pradesh
Concession Details	• Operational concession till 7th June 2043 ¹
Commission Details	• 8th June 2003
Capacity	• 300 MW
Saleable Capacity	• 264 MW
Design Energy	• 1,213 million units
Total Power Generated	• FY20: 1,338 million units
Plant Availability Factor	• Plant Availability maintained above normative level (90%) for FY04-20
PPA	<ul style="list-style-type: none"> • For entire sealable capacity PPA was signed with Himachal Pradesh State Electricity Board Ltd. • 12% free power of the electricity generated is to supplied to the Government of Himachal Pradesh²

Equipment suppliers

ANDRITZ SIEMENS

Turbine



Generator
Transformer

ALSTOM

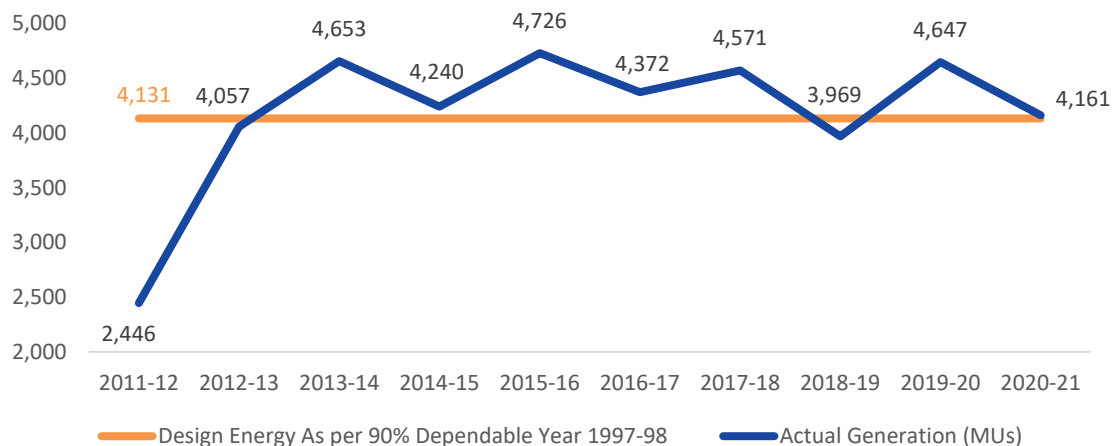
400kV GIS

Plants have consistently outperformed Design Energy

Karcham Wangtoo

- In Karcham Wangtoo, after studying of 34 hydrologic years (1966-67 to 1999-2000), FY 1997-98 was approved discharge series by CEA for Design Energy Generation (4,131 MU) for 90% of Dependable Year
- Since commissioning of plant, **power generation has been higher than Design Energy in 8 out of 9 years of a near full season of operations**

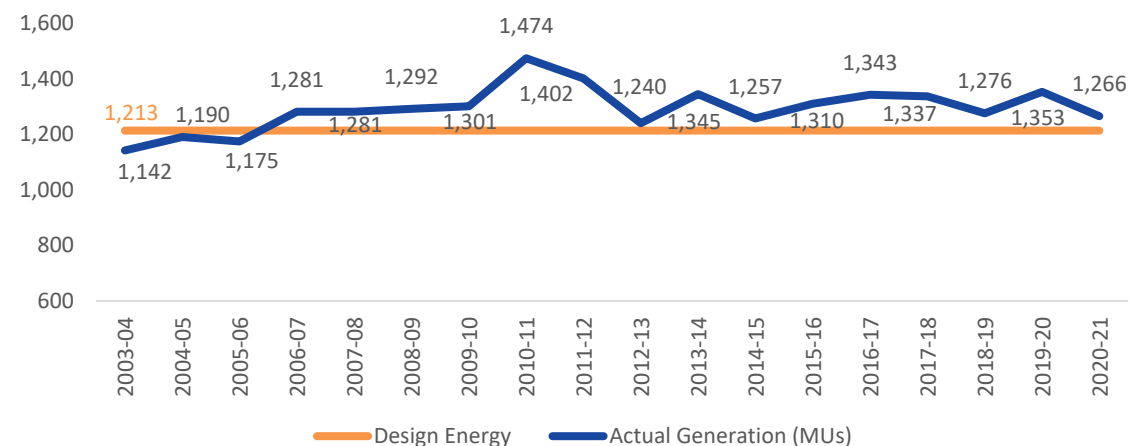
Design Energy vs. Actual Generation



Baspa II

- In Baspa II, after studying of 26 hydrologic years (1965 to 1991), FY 1981-82 was approved discharge series by CEA for Design Energy Generation (1,213 MU) for 90% of Dependable Year
- Since commissioning of plant, **power generation has been higher than Design Energy in 15 out of 17 years of a near full season of operations**

Design Energy vs. Actual Generation

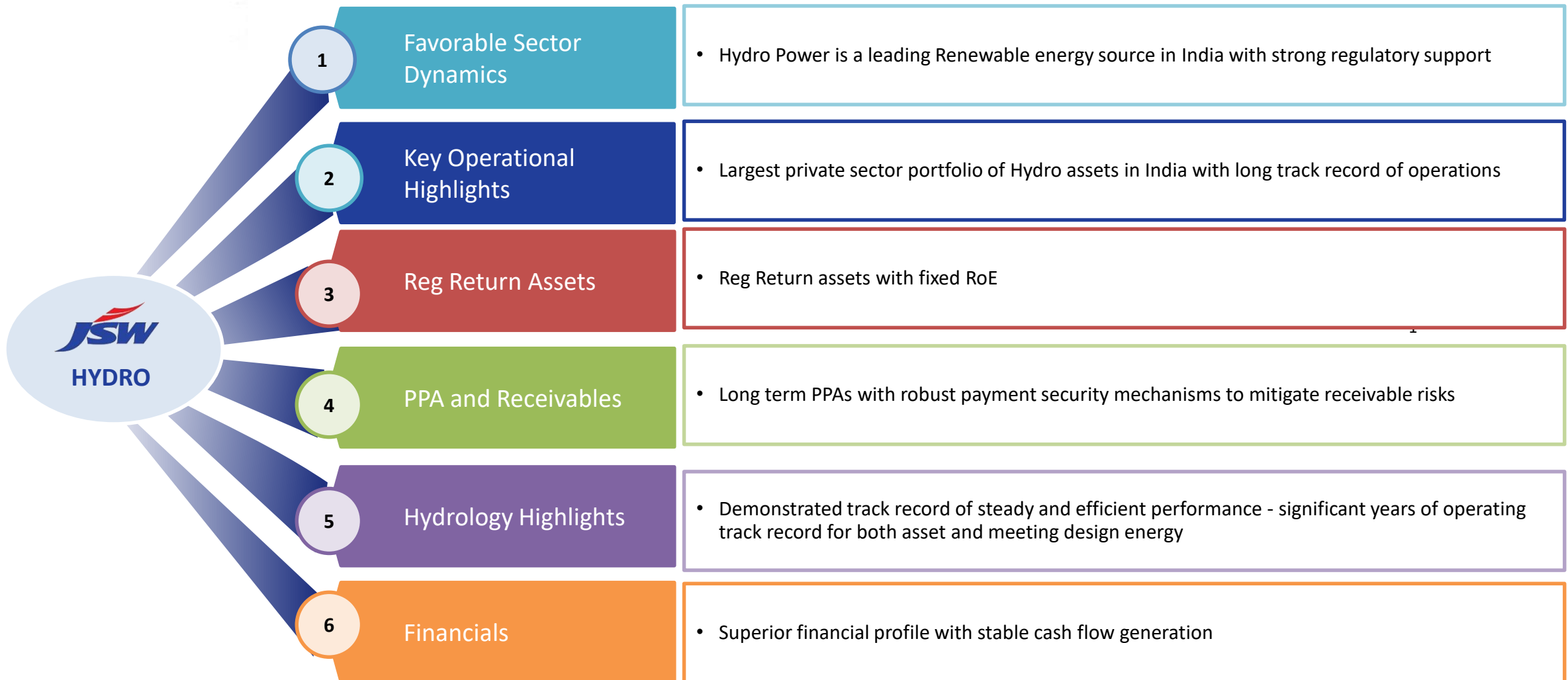


Our plants in Sutlej basin have outperformed Design energy due to healthy flow of river water



B. Key credit highlights

Key credit highlights

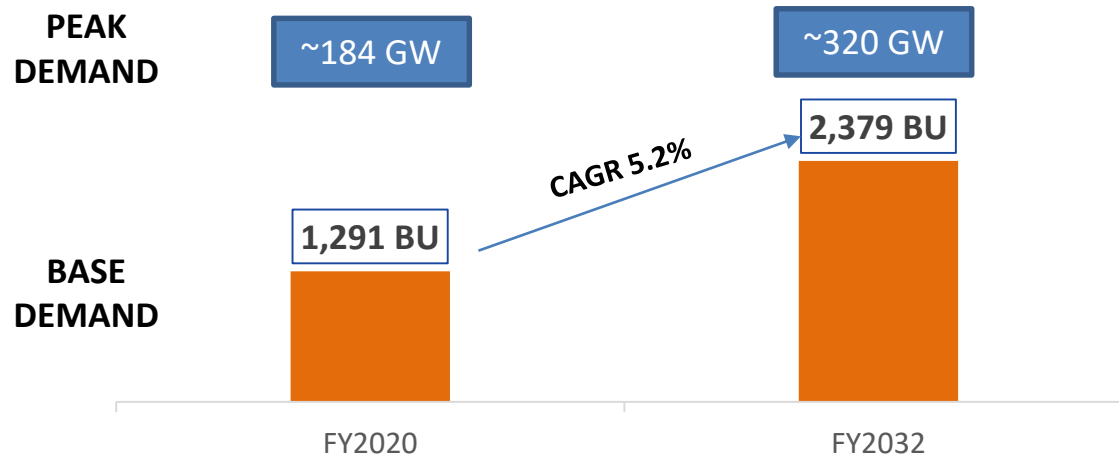


Hydro Power is a leading Renewable energy source in India...

5

India is expected to show strong growth in power demand with hydro power strategically placed as outlined by HPO¹

Robust Power Consumption Growth²



- ✓ Power Demand to be driven by India's robust economic growth
- ✓ ~136 GW of increase in Peak Demand expected

Why is Hydro Power attractive in India?

- ✓ Hydro Power best placed for Grid Balancing requirement arising due to variability of Renewable energy sources
- ✓ Ideal for meeting the Peak requirement of power with increasing urbanization of India
- ✓ Seasonality of Power demand matches the generation profile of hydro assets
- ✓ 'Must Run' status for Hydro Power places it in top quartiles for power offtake by Discoms
- ✓ Stable and Predictable energy generation : Long Term Hydrology Data Available
- ✓ Hydro power technology is reliable and efficient, with low operating and maintenance cost
- ✓ Favorable Regulatory Environment and Government support bolstering Hydro power development
- ✓ Hydro included in SECI's upcoming RE Hybrid-bids

...supported by favourable regulatory and policy measures

Renewable Energy Status

Large Hydropower Projects are recognized as Renewable Energy source by Govt. of India² which will provide developers with flexibility in tariff determination, and grants for the flood moderation components of projects and enabling infrastructure, such as roads and bridges

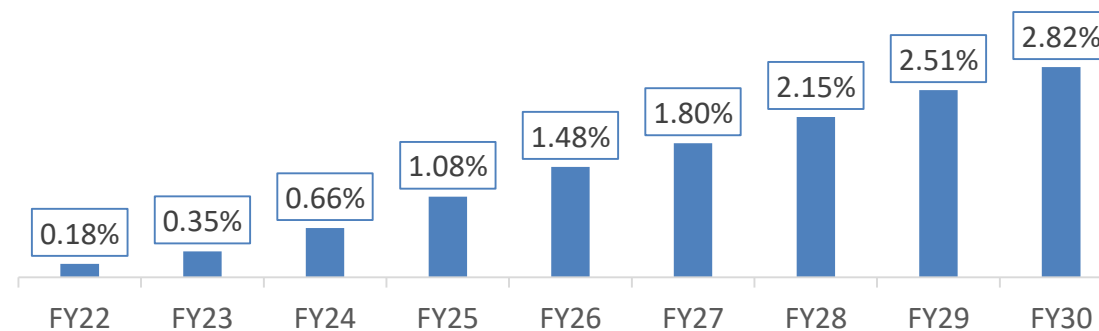
Must-Run Status

'Must Run' status accorded to Hydro projects to prioritize off-take of Hydro power
Discoms are required to thus offtake Hydro power before Conventional sources

Hydro power Purchase Obligation

In Jan'21 – Govt. of India released the trajectory of Hydro power Purchase Obligation (HPO) for Discoms under Renewable Purchase Obligation (RPO)

HPO - Trajectory



Regulated Returns

CERC Tariff Regulations¹ allow 16.5% post-tax Return on Equity for Hydro Projects (for Run-of-the-river type)
Two- Part Tariff leads to Availability based income and incentives

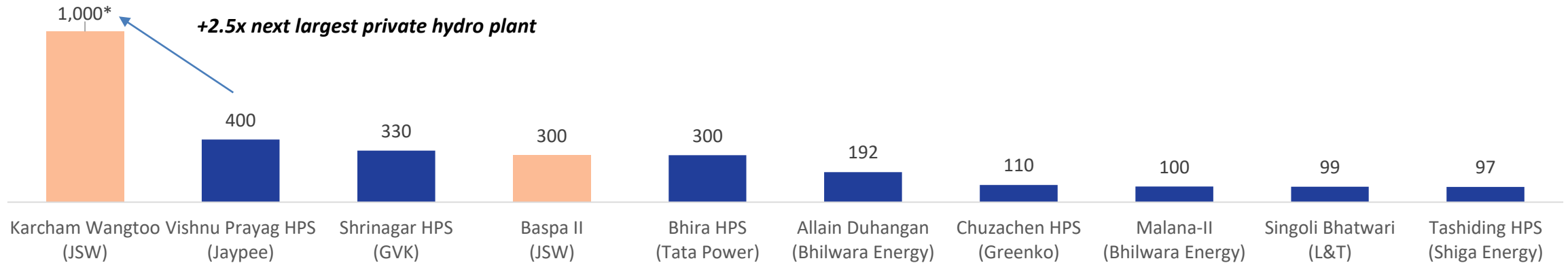
(1) Central Electricity Regulatory Commission – Tariff Regulations for 2019-24

(2) Press Information Bureau release on March 9, 2019

Largest private sector Hydro assets with demonstrated operating track record

1

Overview of Top 10 private sector hydro power plants in India by capacity (MW)



Run-of the river projects with state-of-the-art infrastructure



Karcham Wangtoo and Baspa II have been operating for 10 years and 18 years respectively demonstrating a long track record of operations



High replacement cost of hydro power



Efficient operating mechanisms and systems for optimal use of water resources



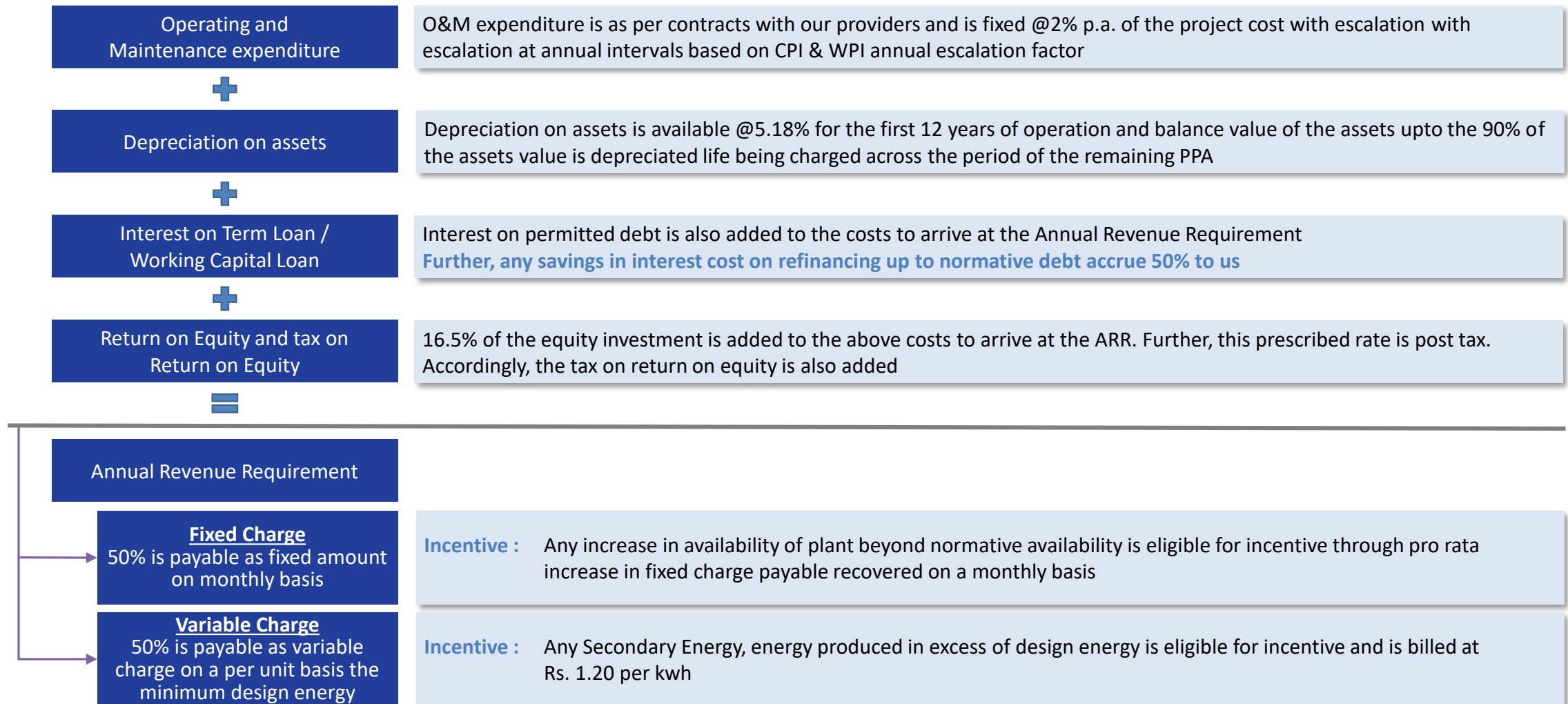
Karcham Wangtoo eligible for carbon credits under Clean Development Mechanism (CDM) by United Nations Framework Convention on Climate Change (UNFCCC)
Both plants registered as Verified Carbon Standard (VCS) projects generating CO₂ emission offsets

Source: National Power Portal – Government of India

*Current approved operational capacity at 1,000 MW. Awaiting CEA approval for uprating to 1,091 MW

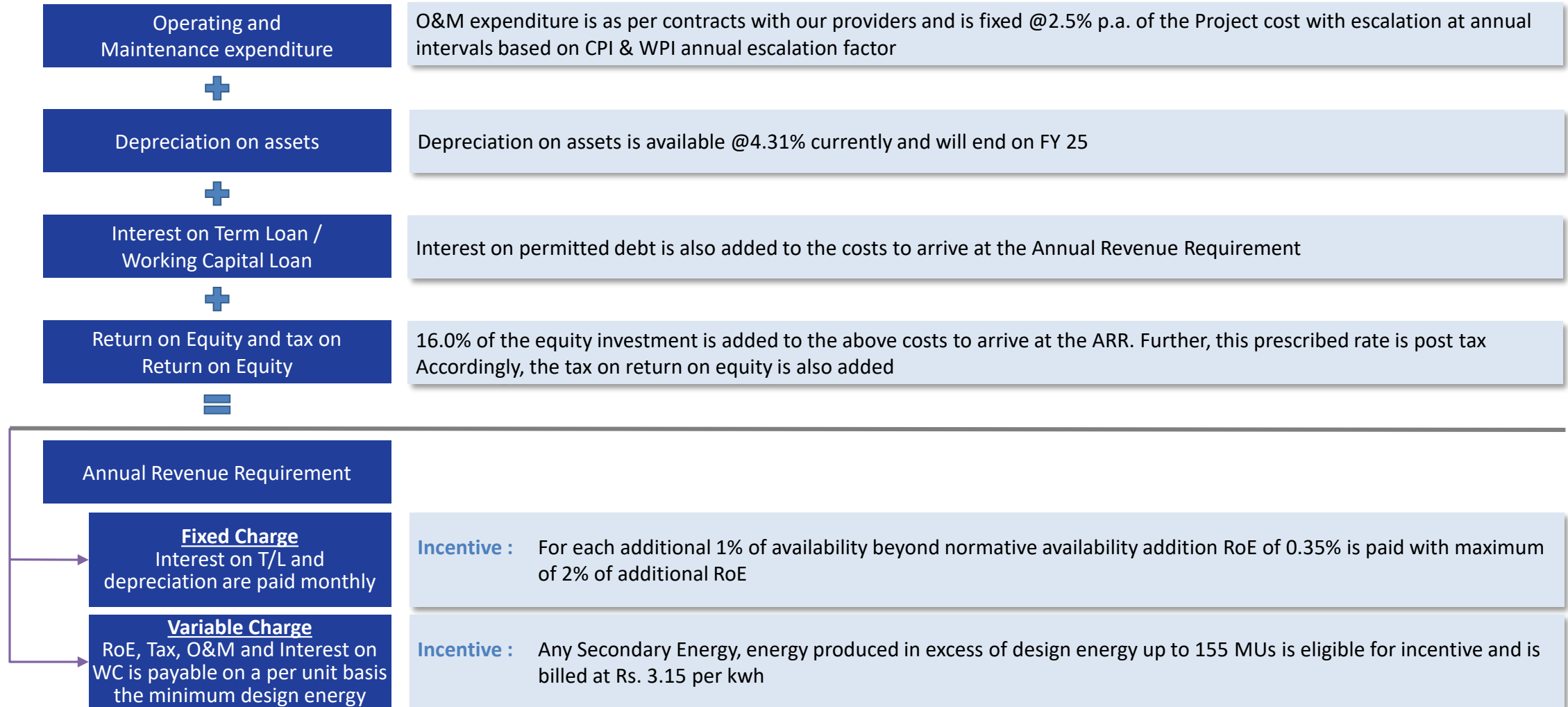
Reg Return Assets – Tariff Determination (Karcham Wangtoo)

2



Reg Return Assets – Tariff Determination (Baspa II)

2



Revenue visibility through long term PPAs

3

Project	Capacity under PPA (MW)	Fixed RoE	Off-taker	PPA period	Evacuation
Baspa II	300 MW*	16.0%	Himachal Pradesh (HPSEB)	40 Years (till 2043) (provision to extend for further 20 years)	400 kV D/C Baspa II-Naptha Jhakhri dedicated transmission line
Karcham Wangtoo	1000 MW*	16.5%	PTC India (Haryana, Punjab, UP and Rajasthan Discoms)	35 Years (till 2046) (provision to extend for mutually agreed upon period)	400 KV D/C Karcham Wangtoo – Abdullapur Transmission Line



Levelized tariff after the new trajectory of HPO for Discoms under RPO is ~Rs. 4.5/kWh for any newly constructed hydro projects **



Both assets have long-term PPAs in place (20-25 years remaining)



Long term PPAs on cost-pass through basis, allowing fixed return on equity



Project cost has already been approved by respective regulator for both projects, leaving less room for any tariff dispute



Low scheduling risk as hydro plants are under 'Must-run status' and in top 2 quartiles of Merit Order Dispatch for all state Discoms

* Includes 12% Free power to Himachal Pradesh Govt.

** Kutehr - Levelized tariff of ~Rs. 4.50/kWh

HPO: Hydro power Purchase Obligation; RPO: Renewable Purchase Obligation

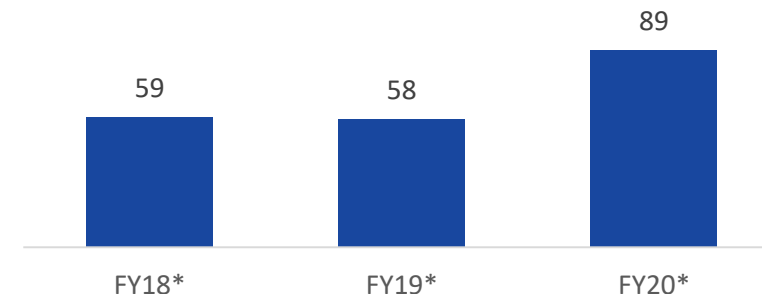
Diversified off-taker profile limits counter-party risk

3

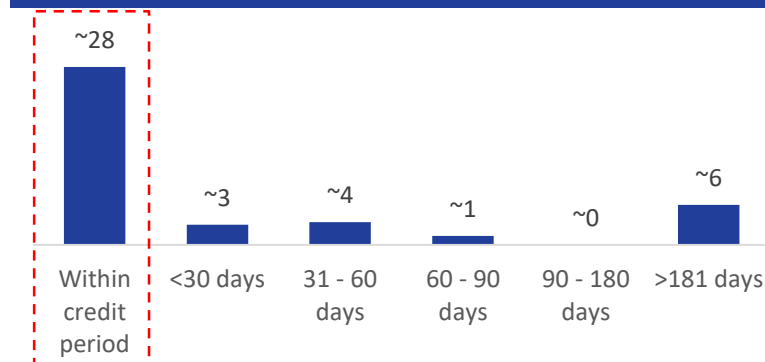
Limited counter-party risk with diversified off-takers

- Karcham Wangtoo: PPA with PTC
 - PTC has in turn entered into PPA with Uttar Pradesh, Punjab, Haryana and Rajasthan State Discoms
- Baspa II: PPA with Himachal Pradesh State Electricity Board
- Credit profile of state discoms consistently improving due to timely receipt of financial support from central and state government
 - Central government announced Rs. 120,000cr Covid relief package for discoms
- 'Must Run' status has been accorded to Hydro projects to prioritize off-take of Hydro power (as per Merit Order Dispatch of all states)
 - This ensures that the generation is not subject to curtailment on account of merit order dispatch or any other commercial consideration
 - Moreover, the tariffs for JSW Hydro plants comes within top 2 quartiles of the Merit Order Dispatch

Receivables days evolution



Receivables ageing profile (USD mn)¹

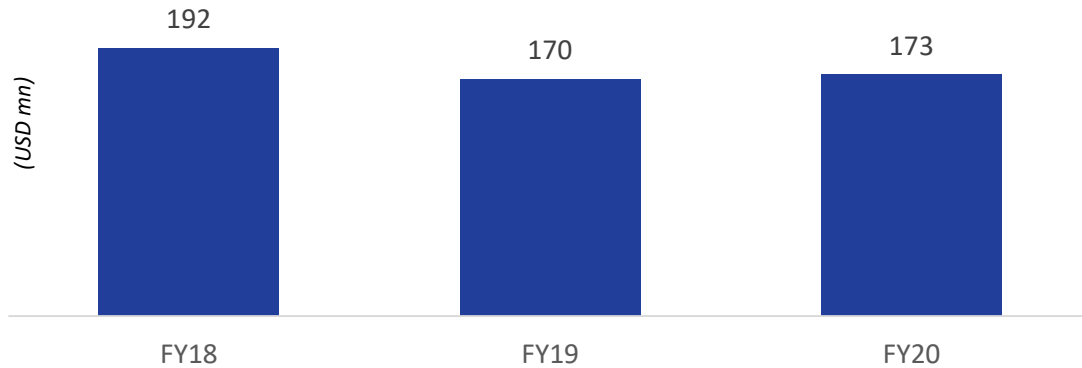


Competitive tariff and large capacity of Karcham Wangtoo and Baspa II provides a reliable source of hydro power for all the existing power offtakers

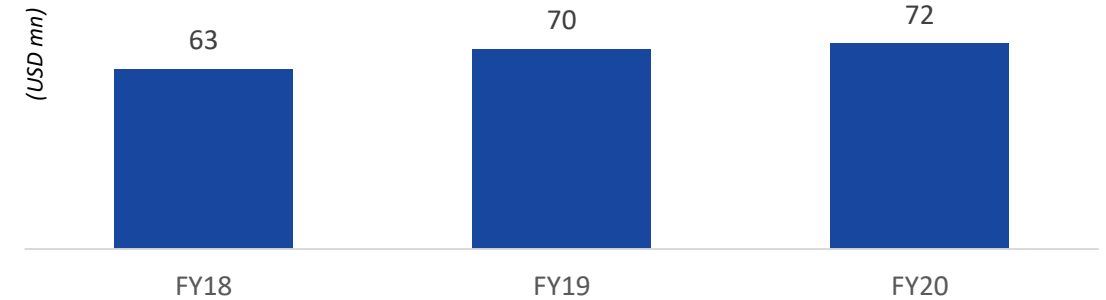
Superior financial profile with stable cashflow generation

6

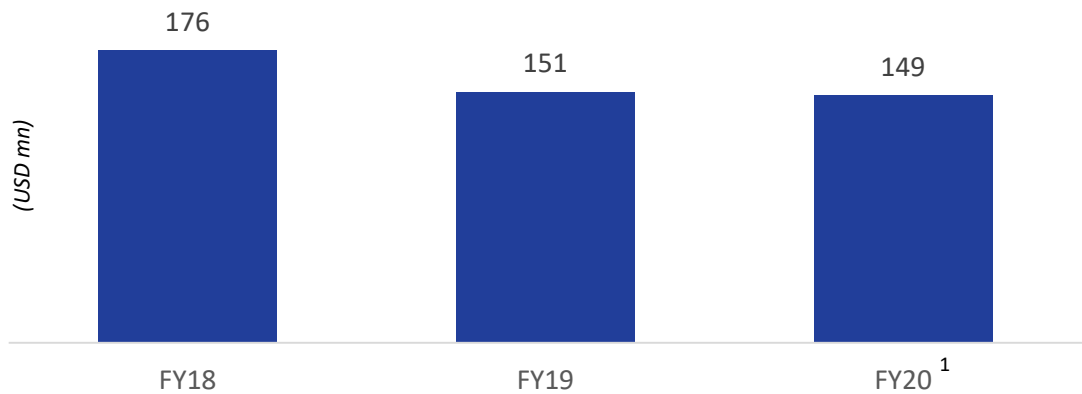
Revenue



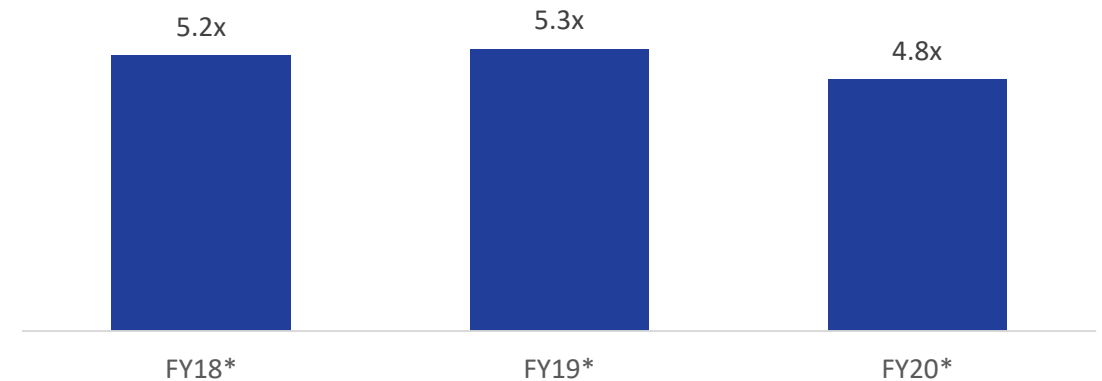
FFO¹



EBITDA



Net debt / EBITDA



Note: Exchange rate: USD1 = Rs.73.0536

* As of 31-Mar

(1) Funds From Operations (FFO) = EBITDA – Interest – Tax



Thank you
