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Renewables

Adani Green Energy Limited
Investor Presentation

June 2019

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1.Adani Group

A. About Adani Group

Leading Infrastructure Conglomerate in India

Founded in 1988 by Mr Gautam Adani, Adani group has interests in power generation, coal mining, trading, ports operations, logistics

Sh Gautam Adani
Chairman, Adani Group

4,560 MW Among Largest Renewable players in India

13,464 ckm Largest Private Transmission Player

208 MMT Largest Ports Player in India

	74.97%*	74.92%*	74.92%*	62.30%*	80.90%*	74.80%*
	Adani Power	Adani Transmission	Adani Enterprises	Adani Ports	Adani Green Energy	Adani Gas
	– #1 private IPP in India – Total installed capacity - 10,440 MW – Large assets include Mundra – 4,620 MW, Udupi Power (1,200 MW) & Tiroda (3,300 MW)	– #1 private power transmission & distribution company in India – Owns and operates portfolio of 13,464 ckms of transmission assets in India – ~ 2.9 mn consumers – Investment Grade – rated internationally	– #1 coal trader, MDO, solar manufacturing[2] player in India – #1 edible oil player in India, 50:50 JV with Wilmar International Limited – Owns coal assets in Australia	– #1 private port player in India – Operates 10 large ports in India including the Mundra Port – largest non major port in India – Handled 180 MMT (15% of India's cargo) in FY18	– Total renewable capacity of ~4.6 GW – Solar – 2.9 GW – Wind – 1.7 GW – Developed and operates then largest solar power plant in the world – 648 MWAC in Tamil Nadu	– Largest Private Player in gas distribution, ~ 17% market share in City Gas Distribution – Customer Profile – 1,300+ industrial – 0.33 mn residential – 2.3K+ commercial – 70+ CNG stations
Revenue[1]	26,362	7,561	40,951	12,287	2,131	1,823
EBITDA[1]	7,431	2,857	2,541	7,067	1,710	455
Mkt Cap	18,301	24,471	16,717	88,015	6,733	18,619

Infrastructure conglomerate with combined mkt cap of INR 172,800Cr, with 2 IG rated companies

*Shareholding as on 7th June 2019, Balance held by public;
Market Cap data as on 7th Jun 2019; All nos in INR Cr
1. FY19 performance for group cos 2. AEL holds the cell and module manufacturing facility located in Mundra

Case Study : AEL Value Creation ~ 30% CAGR over 25 Yrs

IPO in Nov 1994	In 10 yrs from IPO	In 20 yrs from IPO	After 2015 group restructuring	As on Date
Adani Enterprises – 1 share worth Rs.150/-	Adani Enterprises – 40 shares (supported by Bonus & Splits)	Adani Enterprises – 80 shares (supported by Bonus & Splits)	Adani Enterprises – 80 shares APSEZ – 113 shares APL – 149 shares ATL – 80 shares	Adani Enterprises – 80 shares APSEZ – 113 shares APL – 149 shares ATL – 80 shares AGEL – 61 shares AGL – 80 shares

Rs.150/- in Nov 1994 → 30.0% CAGR → Rs.102,063/- in Jun 2019

BSE Sensex @4124 in Nov 1994 → 9.6% CAGR → BSE Sensex @39,615 in Jun 2019

Adani Enterprises Limited (the first listed group company) has delivered exceptional returns over the years unlocking great value and returns for its shareholders

The above analysis has excluded all annual dividend pay-outs by AEL and APSEZ

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Track Record of Delivering World Class Assets

Leveraging Core Strengths

- ✓ Large scale businesses delivering consistent growth
- ✓ Unmatched execution capabilities – timely and cost effective
- ✓ Three decades of regulator and stakeholder relationship across the energy sector
- ✓ Diverse financing sources – only Indian infrastructure conglomerate with two Investment Grade (IG) issuers

Delivering World Class Assets

648 MW Ultra Mega Solar Power Plant

- Mega project developed, constructed and commissioned in 9 months
- Location: Kamuthi, Tamilnadu
- Solar Irradiation: 1,900 kWh / m^2 / year
- Capacity: 1.25 BU / year

India's Largest Commercial Port

- Largest commercial port of India
- Location: Gulf of Kutch with access to northern and western parts of India
- Capacity: 100 MMT cargo / year

Largest Private Thermal Power Station in India

- Fastest implementation ever by any power developer in India - record completion of inception to synchronization within 36 months
- Location: Mundra, Gujarat
- Capacity: 4,620 MW

Longest Private HDVC Line in India

- Only HDVC line in India to be executed by a private player
- Location: Mundra-Mohindergarh
- Capacity: 1,980 Ckt Kms

Our execution capabilities are exemplified by the world class infrastructure assets constructed by the group

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Largest Integrated Energy Player in India

End to End Integration in the Energy Value Chain

Coal Business

- Largest importer & trader of Coal in India
- Coal MDO Business

Largest coal trader/contract miner in India

Panel Manufacturing

- **1.2 GW production capacity** of Solar PV cells & modules

Largest Solar cell & module manufacturer in India

Thermal Power

- Installed capacity - 10,440 MW
- Developed 4,620 MW Mundra – largest single location project in Asia

Largest private sector thermal power producer in India

Renewables

- ~2 GW operational ,~2.6 GW UC
- Associated transmission lines - 245 ckms operational, 827 ckms UC

Largest Solar power developer in India

Solar Park

- ~2GW 50:50 JV with Rajasthan State Government

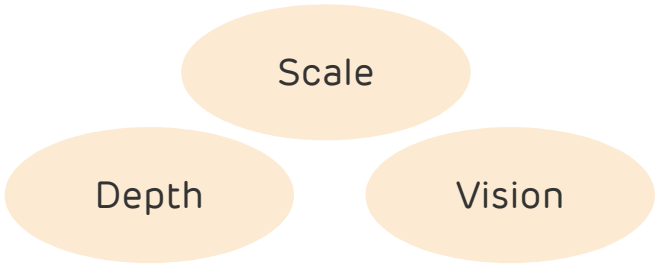
Large Scale Solar Park

Trans. & Distribution

- Owns & operates **13,464 ckms**
- License for Mumbai distribution **– 2.9 mn consumers**
- Gas retail and distribution

Largest private sector T&D business in India

INPUT RESOURCE/EQUIPMENT | GENERATION | DISTRIBUTION, TRANSMISSION, UTILITIES



- Track record of developing large scale projects
- Integrated energy business
- Hold to Maturity investor, build to own for life approach
- Returns focused approach

Integration across energy value chain equips Adani Group with understanding of regulatory framework & focus on growth and returns

UC – Under Construction, PV – Photo Voltaic, MDO – Mine Development cum Operator, ckm – Circuit Kilometers, T&D – Transmission and Distribution, JV – Joint Venture

2.Adani Green Energy

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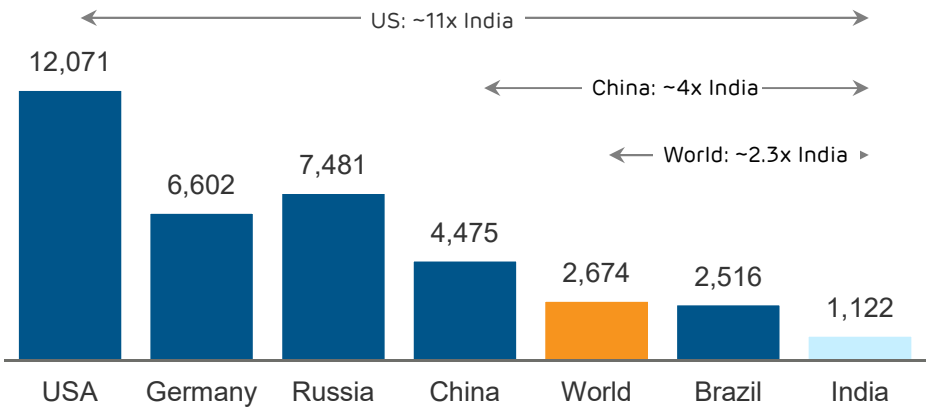
A. Industry Overview & Growth Drivers

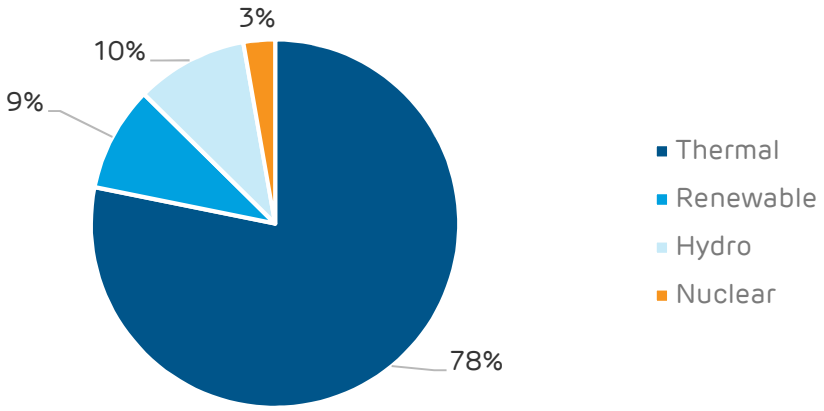
Industry Overview (1/2)

India has significant headroom for power consumption growth

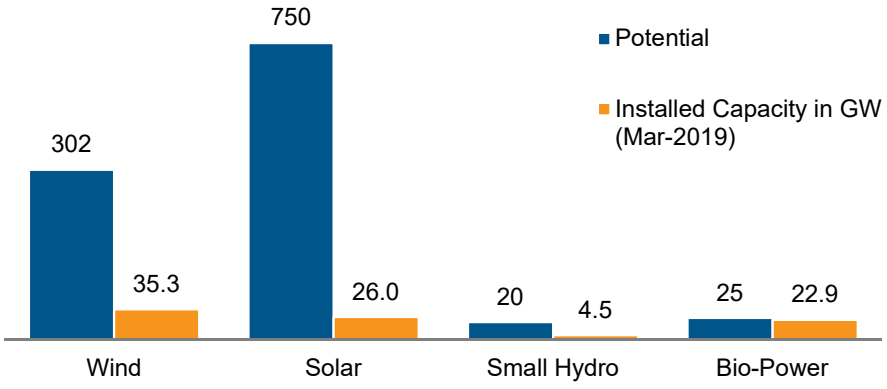
Per capita power consumption 2016 (KWh)[1]



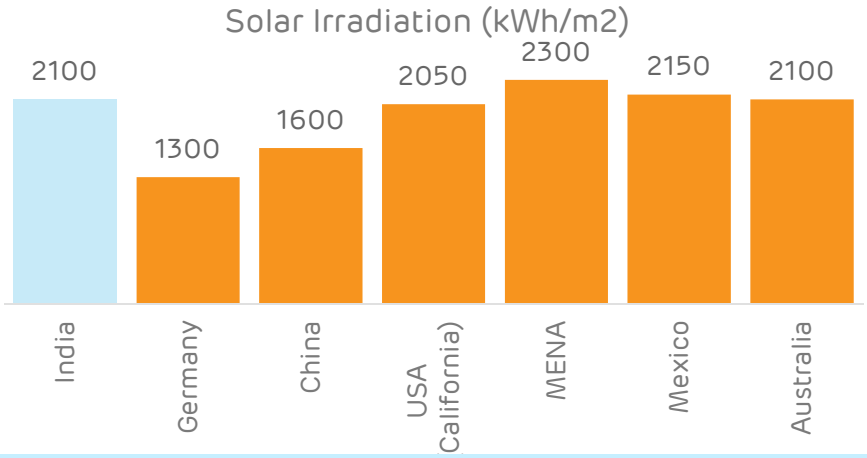
Renewables' overall share in power generation remains low[2]



Solar and wind resources remain untapped



India – Solar Advantage[3]

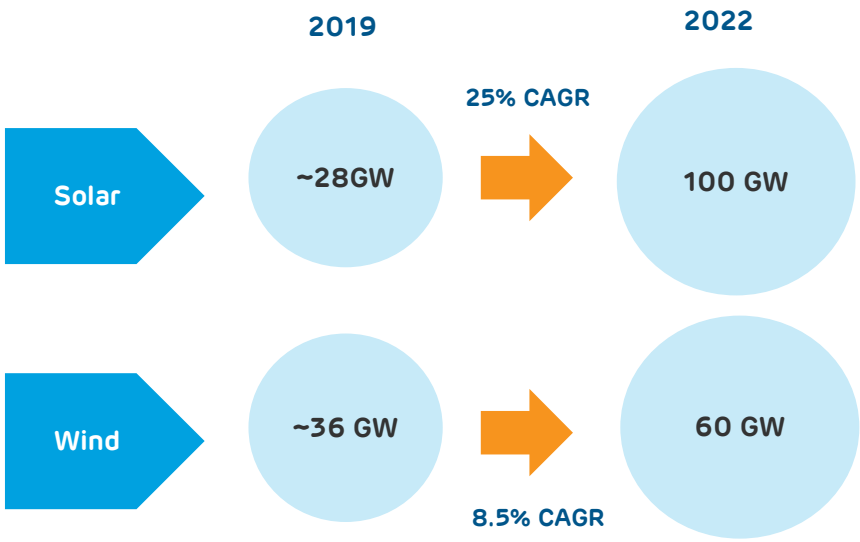


Lower share of renewable energy and higher potential provide opportunities for growth in the renewable sector

[1] CIA World Fact Book; 2: CEA Generation report FY19 3:www.solargis.com

Industry Overview (2/2)

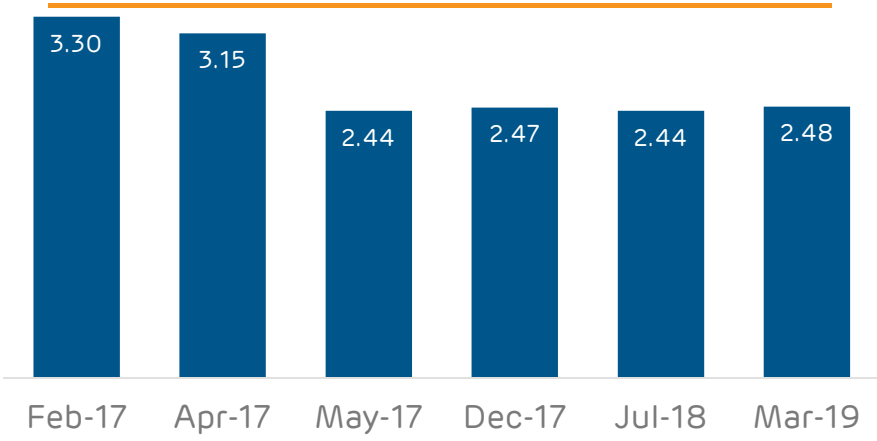
India's Renewable Road Map[1]



To achieve the target as mentioned above, it is estimated that ~USD 100 billion would be invested in the renewable sector

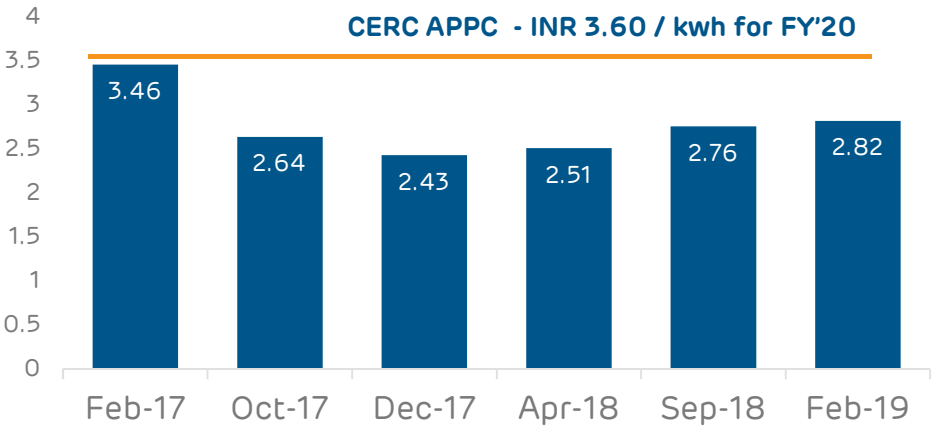
Growth Drivers – India achieves Grid Parity – Solar Bids

CERC APPC - INR 3.60 / kwh for FY'20



Growth Drivers – India achieves Grid Parity – Wind Bids

CERC APPC - INR 3.60 / kwh for FY'20



With tariffs in renewable sector below CERC APPC, incentives for discoms to purchase renewable power increases

[1] Targets as per roadmap of MNRE; APPC: Average Power Purchase Cost

Solar Sector – Paradigm Shift and Our Response

	Past Dynamics of the sector	What has changed today
Project Setup / Technology	– Solar penetration was only driven by **RPO obligations… Solar was "Good to Have"** – Higher plant setup costs, O&M costs, technology in evolvement stage	– Technology and efficiency improvement, led to **decrease in module prices by > 60%** – Improvement in plant design & equipment leading to higher generation & reducing tariff
Project Size / Investors	– Project sizes used to be small – **Small players only.** No major infrastructure players involved	– Decreasing costs promoted states to invite **larger size bids, providing economies of scale** – **Strategic players** entered the sector leading to **efficient & cost effective capex and opex**
Project Locations	– Projects were being set up only **in States** which supported **RPO compliance even at higher power cost** – These States were **not necessarily best locations for Solar resources**	– Bids based on ISTS substations leading to **unlocking of best resource areas of country** – **Development of solar parks** with ready land and evacuation made sector attractive for foreign players (lower cost of capital)
Power Purchase Cost	– Higher Capital Cost led to higher tariffs and resulted in **lower purchase by DISCOMs as purchase of solar power increased APPC**	– **Tariffs lower than APPC** due to incentivizing DISCOMs to buy more solar power – **Non inflationary nature of tariff** will provide incremental benefit over PPA life

Our Response

- AGEL participated in exponential growth of Solar Sector in India, while retaining focus on returns
- **Complete value chain capture** - In house design and engineering, procurement through strategic partners, project management, land acquisition as well as O&M through cutting edge technology
- Sites identified & developed based on parameters like resource, land cost, policy, evacuation and potential upcoming bids

RPO: Renewable Purchase Obligation

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Wind Sector – Paradigm Shift and Our Response

	Past Dynamics of the sector	What has changed today
FIT Tariff Basis	– FIT was largely based on data provided by OEMS for their explored sites and existing WTG models – So, **no incentives with OEMs to introduce new and better machines instead exploit the fleet**	– From 2017, all new PPAs moved to bids, largely based on ISTS substations pushing Tariff down – The **lower tariff pushed the OEMs to introduce new and more efficient WTGs**
Type of Investors	– Due to the small size of projects, majority of them were sold as **financial investments** – Hence, no major focus on performance parameters like CUF, O&M costs, etc.	– Due to increase in size of bid, new energy players entered sector as **strategic investors** leading to more focus efficient capex, opex and on performance parameters
Project Locations	– Initially, projects were in areas where Grid Infrastructure was present, so most projects were not at best places resource wise – **No inclination to discover new and better sites**	– Unexplored Good wind resource areas having ISTS network are being tapped into – **ISTS looking to develop more transmission infrastructure to tap "New Wind Zones"**
Power Purchase Cost	– No opportunity to purchase lower cost wind power from ISTS due to lack of framework – **Higher PPC led to power purchase in small capacities**	– Power bought from best wind states at ISTS network, enabling **lower APPC for States and boosting sustainable demand.**
Margins	– OEMs were doing shadow price based on returns to financial investor and their WTG costs and margins were fully opaque	– **OEMs not becoming equipment suppliers, leading to transparent Capex and Opex.**

Our Response

- Developing sites by identifying resource rich areas through wind campaigns run with ~50 Wind Masts, more in pipeline
- Sites identified based on parameters like resource, land cost, policy, evacuation and potential upcoming bids
- Developed in **house O&M capability**
- Developed capabilities for **in-house EPC of Wind projects** and only source WTGs from OEM, leading to optimized LCOE

ISTS: Inter-State Transmission System

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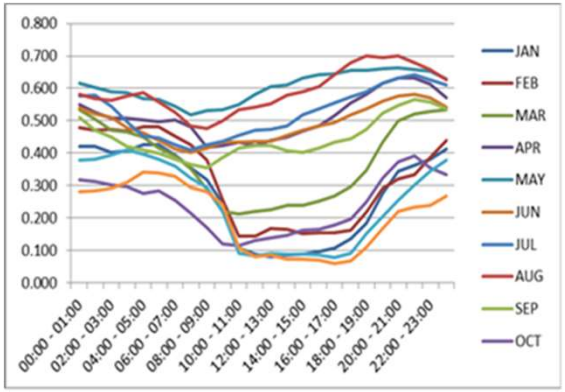
Hybrid technology driving Round the Clock Solution

- In Dec 2018, SECI conducted the first successful wind solar hybrid auction for 1,200 MW in the country
- AGEL and Softbank backed SB Energy were the only 2 bidders in the auction and won 840 MW of the 1,200 MW
- **AGEL won 390 MW at INR 2.69 / unit in auction**

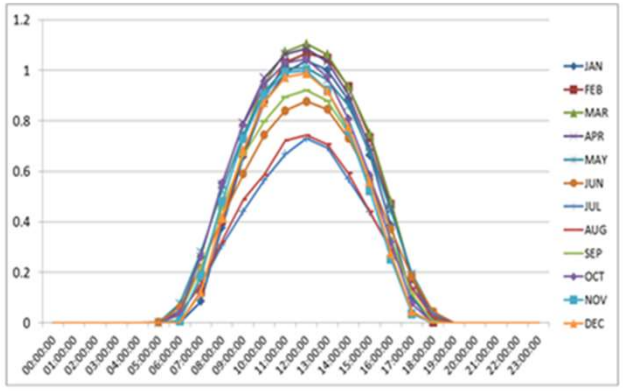
Key Considerations for Hybrid

- Solar and Wind Power Plants characteristically generate power at different intervals and during complementary seasons
  - This helps to ensure that the level of energy being fed into the grid is steadier than that of Wind or Solar PV power plants alone
  - The probability of Peak Solar and Wind resource occurring simultaneously at a particular location is very small, thus reducing the possibility of undesirable power peaks
- Key Advantages include
  - Better utilization of grid and infrastructure
  - Lower generation variability due to hybridization
  - Better utilization of land
- Certain sites like Kutch (Gujarat) are endowed with both solar and wind resources making them suitable for hybrid projects

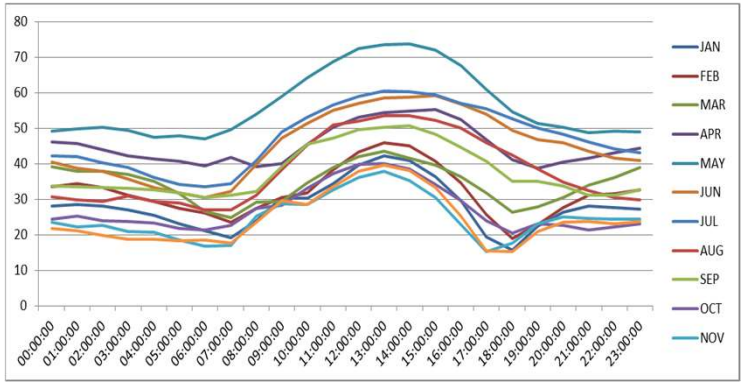
Pattern of Solar and Wind Resource across day



WIND RESOURCE



SOLAR RESOURCE



Wind solar hybrid generation at typical hybrid plant *

Due to characteristic nature of the solar and wind energy, hybrid technology ensure round the clock availability

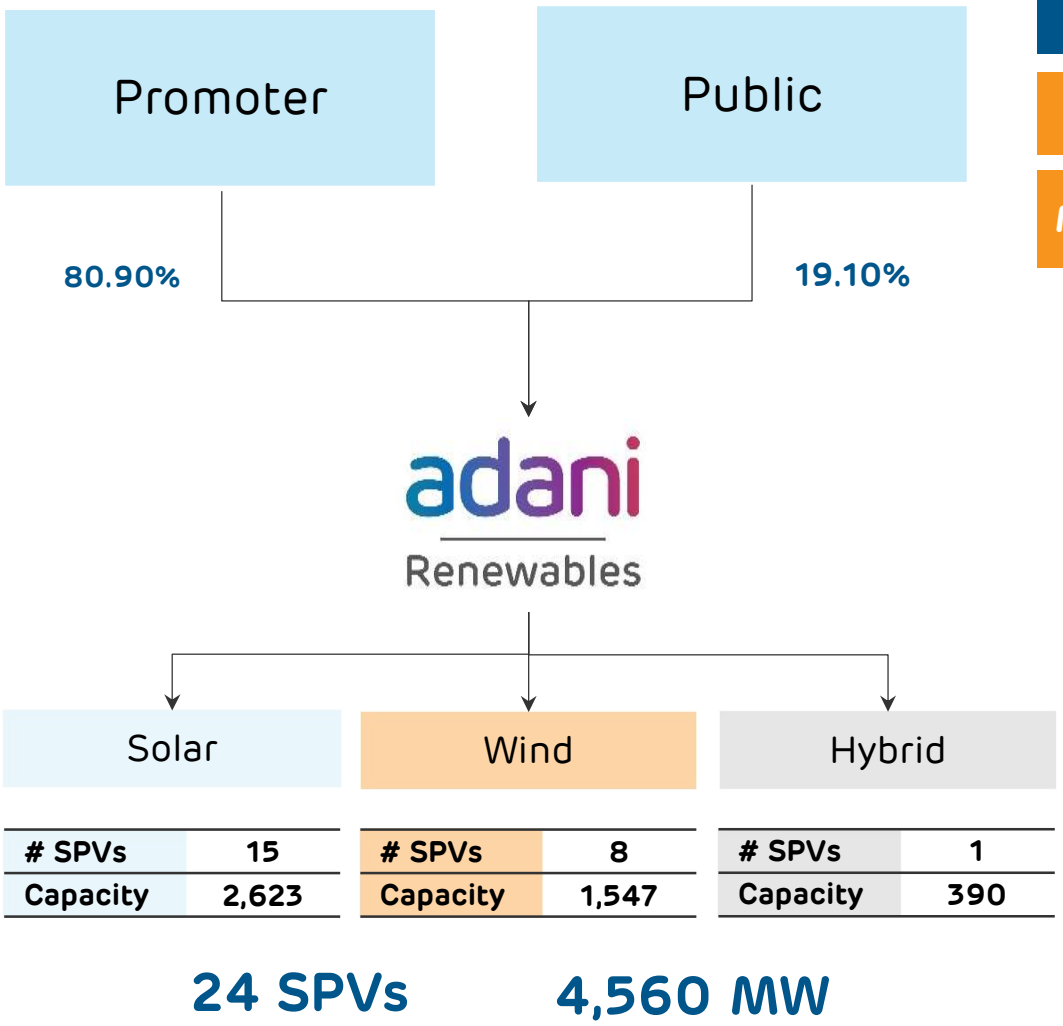
* AGEL internal simulation based on 1.6:1 solar wind ratio

2.Adani Green Energy

B. Portfolio and Operational Details

Adani Green – Holding Structure

Holding Structure



Details

Demerged from AEL on	1st April 2018
Listed on	18th June 2018
Market Capitalization[1]	INR 6,733 Cr

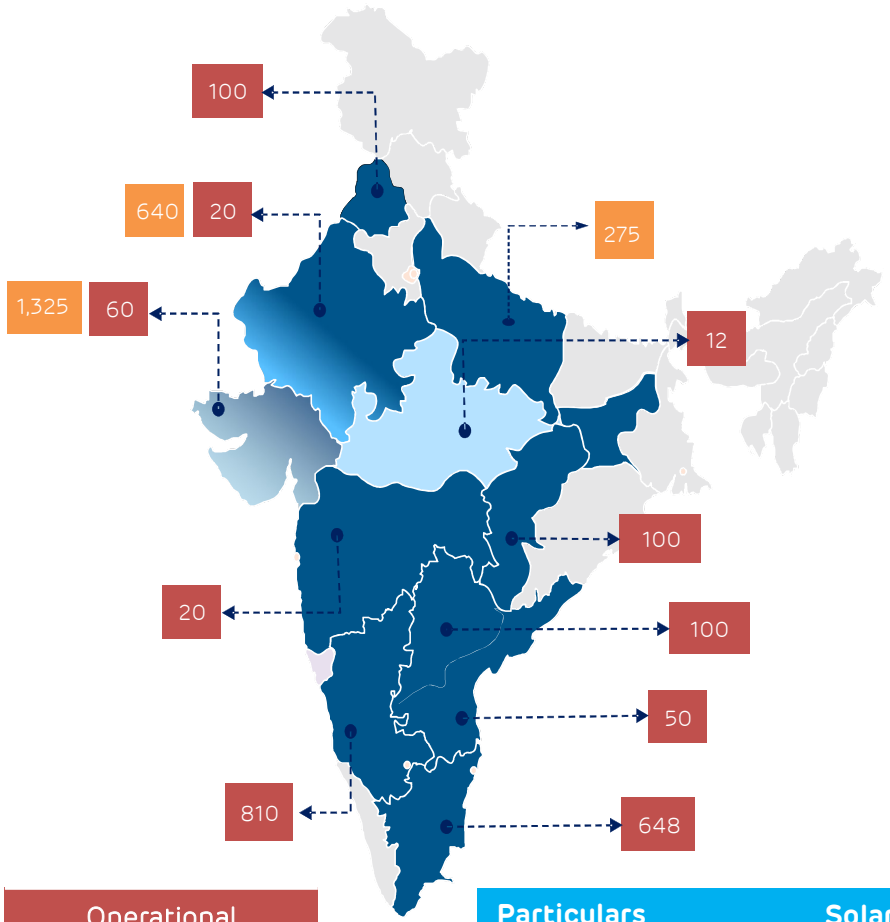
FY'19

- Revenue[2] – INR 2,131 cr
- EBITDA – INR 1,710 cr
- Assets – INR 14,658 cr
- Credit Rating – IND A/Stable

1. Market Cap as on 7th Jun, 2019,

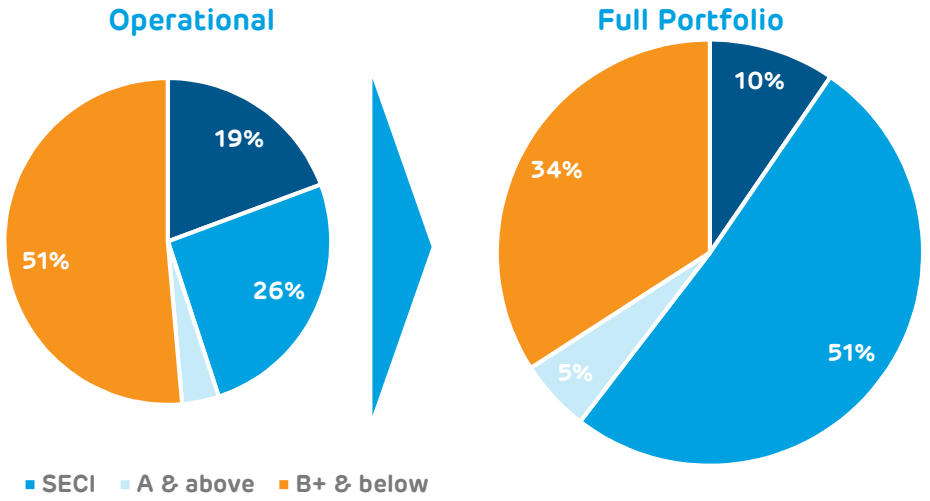
2 – includes other income

Pan India Portfolio



Operational
Under Implementation
Wind
Solar

Revenue Split by Counterparties



Particulars	Solar	Wind	Hybrid	Total
Operational	1, 948*	72	-	2,020
UC	675	1,475	390	2,540
Total	**2,623**	**1,547**	**390**	**4,560**

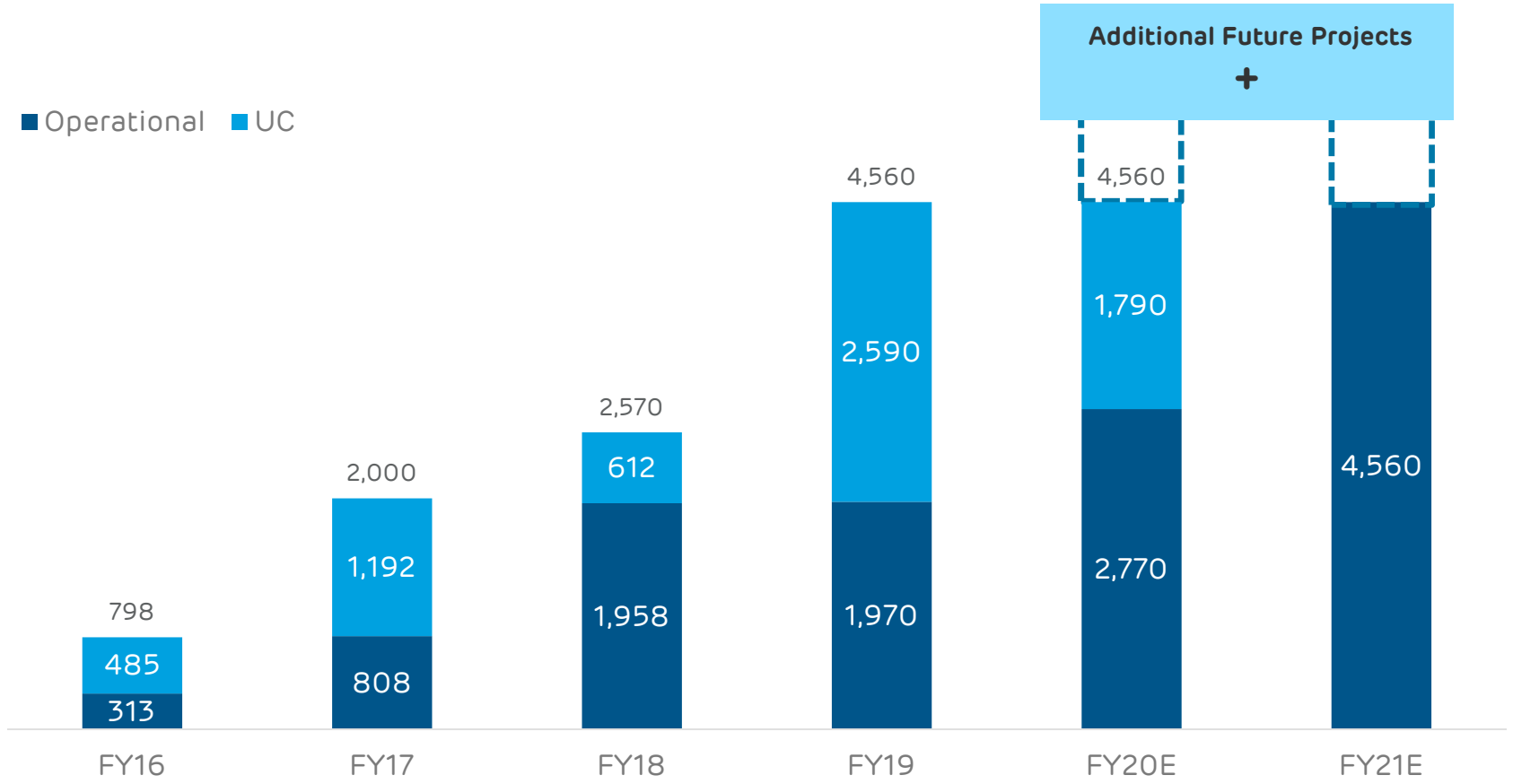
57 Locations

11 States

100% of the portfolio tied-up with sovereign counterparties for 25 years at fixed tariff

* Includes 50 MW Jhansi Project commissioned in May-19

Development Risk Profile improving



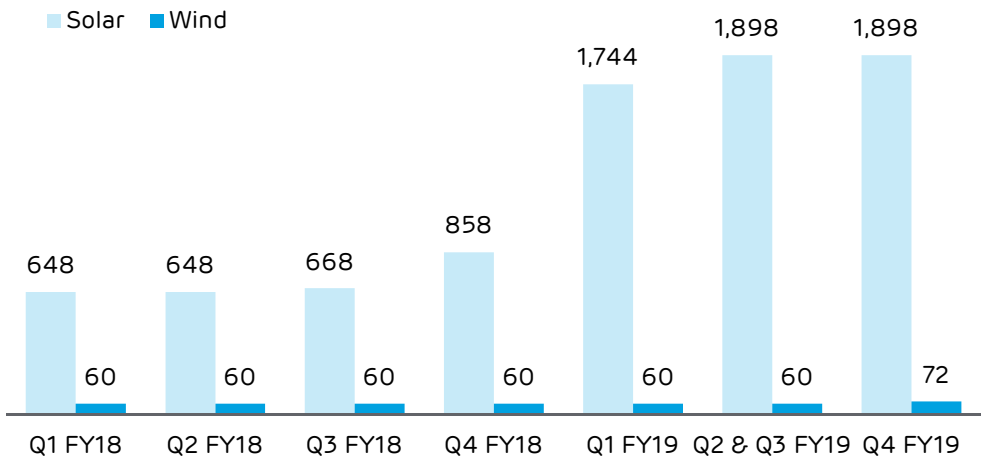
In the forecast period given above, AGEL is also planning investments in international markets, primarily in the US, with approx. INR 100 Cr equity investment per year.

Over the years, the development risk of the portfolio is decreasing due to faster execution of projects and more projects getting commissioned in near future

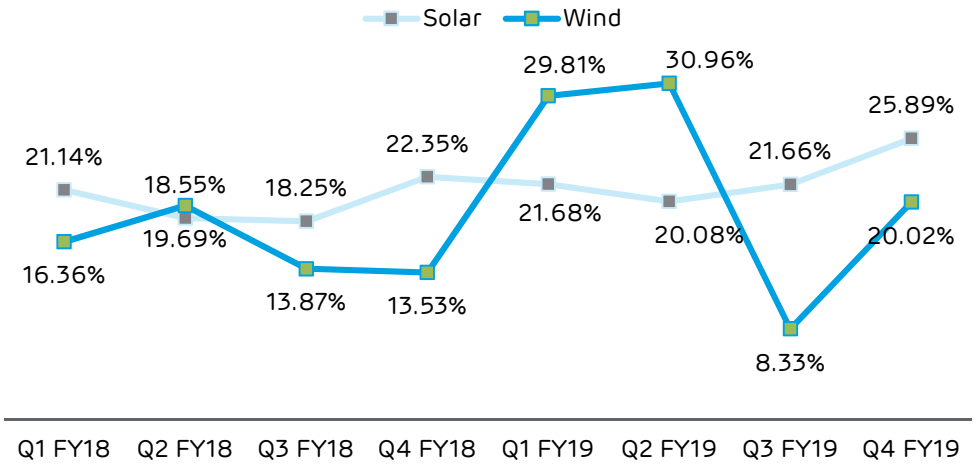
- Further 50 MW (Jhansi) project commissioned during May-19

Operational Performance

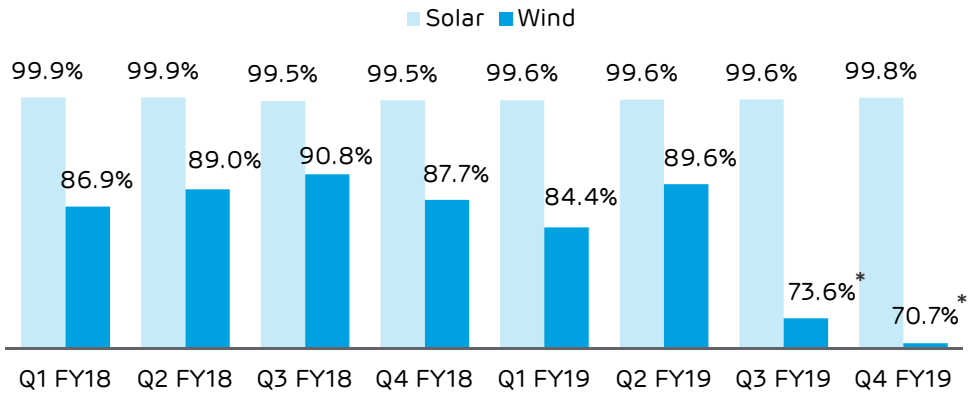
Average Capacity (MW AC)



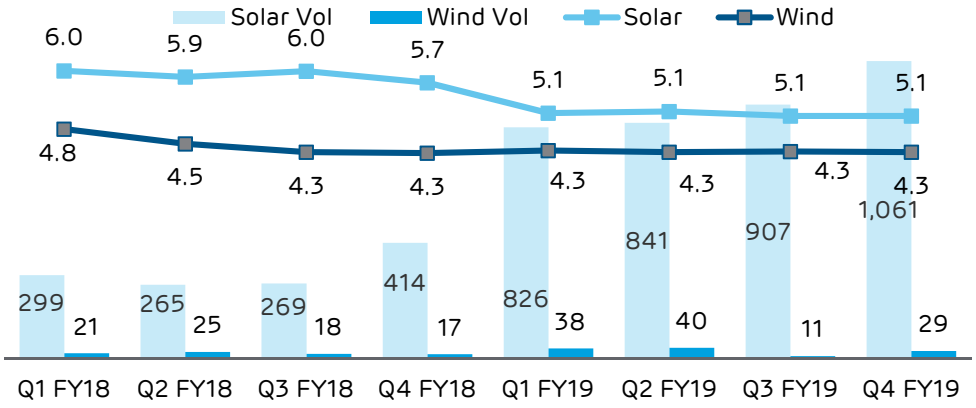
PLF % (AC)



Plant Availability



Volume (MUs) & Average Realization (Rs/kwh)



Target Solar generation for 4,130 MUs @CUF of ~25% (annualized) with Avg. Realization per unit of INR 5.20 for 1,898 MW_{AC} capacity

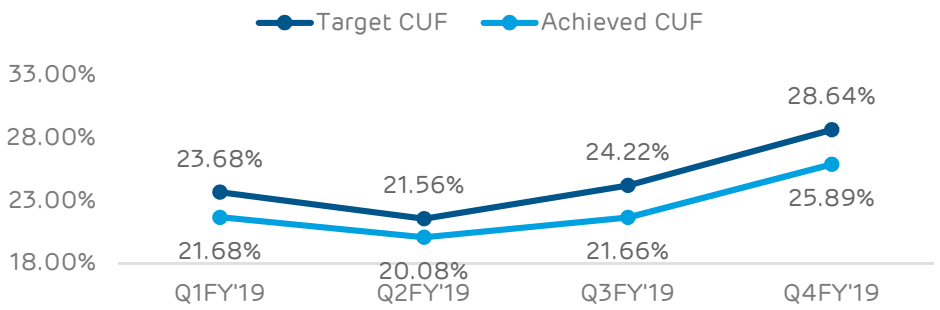
Target Wind generation for 135 MUs @CUF of ~25% (annualized) with Avg. Realization per unit of INR 4.20 for 60 MW_{AC} capacity

* Note: FY 19 saw low plant availability due to certain issues at the end of equipment supplier which are now resolved

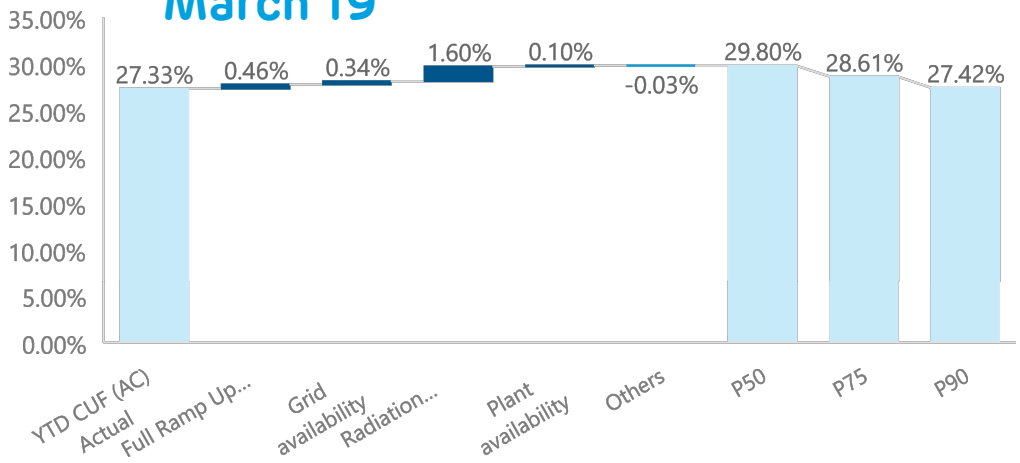
1.9 GW Solar Portfolio Operational Bridge

Actual to Technical Estimates*

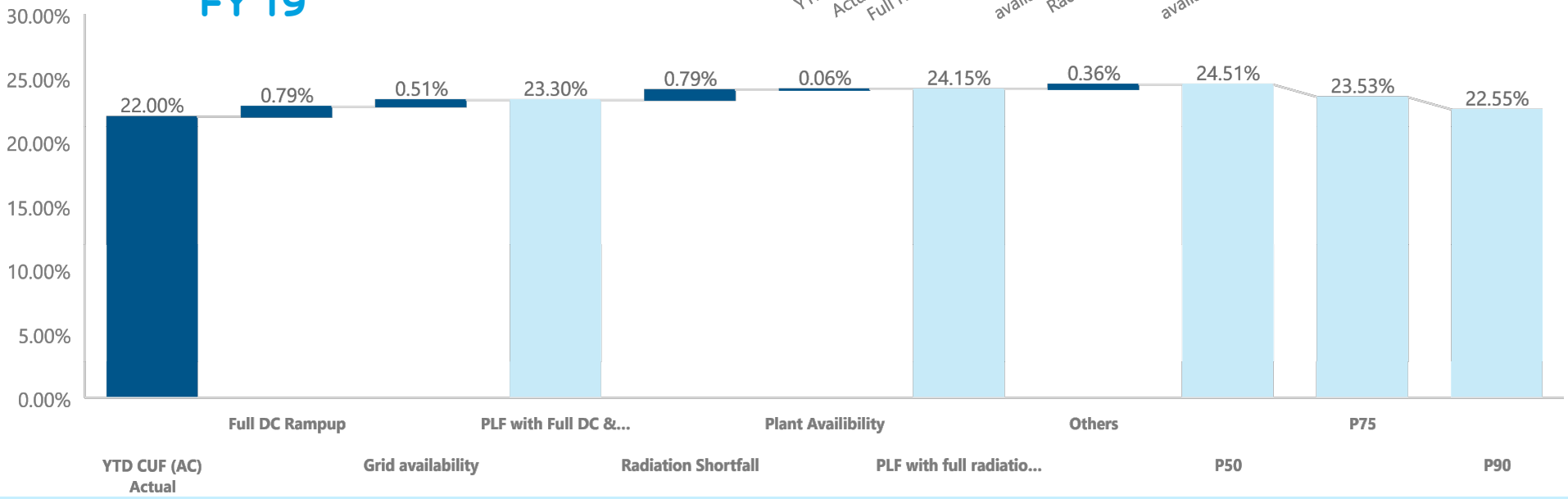
Estimated Quarterly CUF for 1.9 GW_{AC} Portfolio



March'19



FY'19



AGEL has almost achieved its PLF P75 targets ensuring optimum plant utilization and steadily marching towards P50

Annual Target CUF for Solar capacity of 1898 MW is ~25%

* - Generation target for Kamuthi Solar plant has been adjusted to P75 level, whereas all other plants are at P50

2.Adani Green Energy

C. Strategic Priorities

AGEL's Strategic Priorities

Growth and Returns Focus	✓ Vision to be one of the leading Global renewable players ✓ Disciplined investment decisions framework to add incremental shareholder value
Optimal Capital Management	✓ Leverage internal accruals to drive RoE with accretive growth ✓ Established pedigree to outperform WACC and commitment to maintain a strong credit profile
Project Execution	✓ Build on infrastructure expertise with consistent track record of creating industry leading infrastructure ✓ Leverage on vendor partnerships and relationships to support volumes, quality and cost
Operational Excellence	✓ Drive high and predictable generation (Solar – P50, Wind – P75) ✓ Lower cost through preventive maintenance focus ✓ Institutionalized O&M organization and practices
Stable Cash Flows	✓ Predictable cash flow with 100% contracted business with Long term PPA's (~25 years) ✓ Over 65% (on fully completed basis) with Govt. of India Owned Counterparties

Notes: O&M – Operations & Maintenance; RoE – Return on Equity; WACC – Weighted Average Cost of Capital; PPA – Power Purchase Agreement

Profitable growth leading to superior returns

	Capacity (in MW)	Average Tariff (in Rs/kWh)	Completed / Expected Project Cost# (in Rs Cr)	Revenue^ (in Rs Cr)	EBITDA$ (in Rs Cr)	Capex / EBITDA
Operational *						
Solar	1,948	5.07	12,844	2,184	2,092	6.14
Wind	72	4.06	455.00	79	72.56	6.27
Total	2,020	5.04	13,299	2,263	2,164	6.15
Under Construction						
Solar	675	2.75	2,710	458	426	6.35
Wind	1,475	2.73	8,626	1,399	1,324	6.52
Hybrid	390	2.69	2,086	351	329	6.34
Total	2,540	2.73	13,422	2,208	2,079	6.46
Portfolio Total	4,560	3.75	26,721	4,471	4,243	6.30

– Completed Project Cost net of GST refunds to further reduce by ~300Cr, further reducing Capex/EBITDA number
^ - Solar plants Revenue @ P50 & Wind plants Revenue @ P75
$ - Estimated operational EBITDA at plant level; Does not include HO overheads
* Includes 50 MW Jhansi Project commissioned in May-19

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Solar bids won FY 2019: Cautious approach

Tender	Location	Capacity offered by AGEL (MW)	Tariff offered by AGEL (Rs/KWh)	Successful	L1 Bid Tariff (Rs/KWh)	Difference in tariff offered & L1 (in paise/unit)	Capacity Won by AGEL (MW)
500MW-Solar Projects Phase-IV - GUVNL	GJ	150	2.67	Yes	2.55	12	150
2000MW - ISTS- Tranche I - SECI	Across India	500	2.54	Yes	2.44	10	50
550MW - Retender - UPNEDA	UP	250	3.08	Yes	3.02	6	75
500MW-A- Retender - UPNEDA	UP	100	3.21	Yes	3.17	4	100
2000MW Solar Projects – ISTS - NTPC	Across India	500	2.62	No	2.59	3	0
1000 MW Solar - Phase-2 - MSEDCL	Across India	500	2.76	No	2.74	2	0
1000 MW Solar ISTS - MSEDCL	Across India	200	2.71	Yes	2.71	0	200
500MW-Solar Projects Re-tender-Sep-18 – GUVNL	GJ	200	2.44	Yes	2.44	0	100
Total		**2,400**					**675**
					Bid Conversion Ratio		**28.0%**

AGEL has adopted a conservative approach in bidding for new Solar Projects

2.Adani Green Energy

D. Management & Project Execution Capabilities

Strong sponsor & professional management with strong execution track-record

Professional Management Team

Jayant Parimal
CEO

- Mr. Jayant Parimal has been associated with the group since 2015
- Prior to this, he was with Reliance Industries as President (Special Projects) in Mumbai
- An IAS officer (1989 batch), has done B.E. in electrical engineering in 1988 from MNIT, Allahabad, CFA in 2002 from ICFAI, Hyderabad; Masters of International Law & Economics in 2004 from World Trade Institute, Bern and L.L.B. in 2007 from Gujarat University
- Worked in various capacities with Government of Gujarat and Government of India till 2006

Ashish Garg
CFO

- Mr. Ashish Garg has been with AGEL since June 2017
- He is a Chartered Accountant with ~ 20 years of experience in renewables, metals & mining and oil & gas
- He has exposure in areas of fund raising, bond markets, budgeting, commercial negotiations and private equity
- Prior to this, he has worked with Essar Oil, Vedanta Resources, and Skeiron Renewables

Rajesh Shrivatsava
COO - Projects

- Mr. Rajesh recently joined the group in Jan 2019
- Mr. Rajesh has rich experience in Project management, engineering, planning and resource management in thermal, solar and gas based
- M. tech from IIT Bombay, he started his career with NTPC, then Toshiba, Lanco

Raj Kumar Jain
Head, Business Development

- Mr. Raj has rich experience in business development, M&A, corporate strategy, financing, risk management, PPA management and revenue realization
- Prior to this, he has worked with Vedanta group

Rakesh Shah
Head Regulatory

- Mr. Rakesh has ~ 27 years of experience in regulatory affairs and policy advocacy,
- Prior experience includes Sun Edison

Sunil Modi
Head O&M

- Mr. Sunil has ~ 25 years of experience in tech innovation, engineering
- Prior experience includes Essar Power, Regen Power

AGEL's Management team comprises of industry experts with rich experience in business, finance, regulatory domains

B.E. – Bachelor of Engineering, CFA – Chartered Financial Analyst, ICFAI - Institute of Chartered Financial Analysts of India, LLB - Bachelor of Legislative Law, MNIT - Malaviya National Institute of Technology, NTPC – National Thermal Power Corporation, PPA – Power Purchase Agreement, IIT – Indian Institute of Technology, M&A – Mergers and Acquisitions

Project Execution – Key Strengths

Land Acquisition

- Leverage experience of dealing land & other statutory permissions from other similar business activities such as Transmission & Real estate
- Identifying strategic land near substation to reduce cost of transmission line

Engineering

- Strong In-house design team with vast experience in Renewable & transmission
- Standardization & optimization achieved for various technologies and designs adopted for quick turnaround in engineering activities

Procurement

- Leverage on group strength of large vendor base with long relations
- Influence on Supplier's by virtue of large portfolio across group companies
- Strong procurement office based in China for better control on Chinese Vendors

Construction

- Strong In house team having strong knowledge base
- Centralized Project Controls using in house project management tools (SAP, Agile & pm software)
- Direct Contracts for higher degree of control on resources. No EPC contracts
- High Safety standards. Du Pont engaged in framing Group HSE guidelines

Backed by strong sponsor support, AGEL has expertise at all steps of project execution, from origination to commissioning

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Development Pipeline– Key Differentiating Factor for AGEL

20 GW Development Pipeline in Resource Rich areas

Expected Wind growth is supported by

- ~5 GW of wind sites under self development
- Land applied for 75% of identified area.
- Transmission Connectivity available for 1.8 GW
- 41 wind masts installed across multiple sites in India
- Use of leading turbine technologies to drive down the LCOE

Expected Solar growth is supported by

- ~9 GW of solar sites under self development
- Land applied for 95% of the identified area
- Transmission connectivity approval available for ~ 2.4 GW

- Ready sites to house future projects
- Large scale sites enable large single location project to be developed in multiple phases

Our Position	– Ideally positioned to win a significant portion of live and future bids

LCOE – Levelized Cost of Energy

Source highest quality equipment from reputed OEMs

Solar Modules

- **Best Vendors** : Resilient and reliable supply from Tier-1 vendors, strategic relationship with 6 Super League
- **No Technology Risk :** Procured Solar PV modules from all the available technologies i.e. C-Si, Thin Film (A-Si, CdTe, CIGS), Bifacial
- Stringent quality inspection criteria, fully automatic line selected at manufacturer's plant, online inspection performed by our engineers and renowned third party lab
- **Performance Warranty for 25 year and Product Warranty for 10/12 years**

Inverters and Trackers

Inverters

- Based on technological advancement and economic viability used both central and string inverters in the projects **(1.2 GW capacity with string inverters)**
- In recent projects utilised string Inverters were preferred primarily because of easier and quicker installation, localisation of problems and thus affecting minimum generation and ease in maintenance.
- **Best in class Huawei String Inverters and ABB/Hitachi Central Inverters are being used at various locations, with 5-6 year product warranty**

Trackers

- Based on resource estimation, Tariff and incremental capex, single axis trackers have been installed in some projects
- We have used the market leaders i.e. NEXTracker, USA and Artech, China for our solar projects
- **Warranty for 20 Years for structural components and 5 years for motor and gears**

HITACHI ABB NEXTracker artech

AGEL's relationships with majority of vendors assures best in class equipment procured on favorable terms

C- Si – Crystalline Silicon, A -Si – Amorphous Silicon, CdTe – Cadmium Telluride, CIGS – Copper, Indium Gallium Selenide Solar Cell, ABB – ASEA Brown Boveri, USA – United States of America, RG – Restricted Group

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Our O&M Philosophy

Operational Strategy	– **Cluster based operating model** to ensure adequate support and governance at each site – Optimized module cleaning cycle by comparing revenue loss due to soiling against the cost of module cleaning – **Maintenance and Operational Excellence** based on real time data analytics – Thermal imaging of evacuation system at all sites post commissioning and at an interval of every 6/12 months
New Technology & Innovation	– **Remote Operations and Nerve Center (RONC)** for central monitoring of the plant performance – **Dust Detection System (DDS**) for measuring the soiling loss and optimizing the module cleaning cycle – String monitoring for operational efficiency improvement – Thermal imaging for monitoring module health – Use of **Google Glass and Module Level Power Electronics**
Maintenance Strategy	– All equipment classified on the basis of criticality and maintenance strategy linked clearly to classification – Comprehensive contract management framework for Inverters and Module – Comprehensive AMC of the Switchyard equipment and associated transmission lines
Spares Management	– Inventory classification based on Vital, Essential and Desired depending on criticality – Level set in stringent manner ensuring optimum inventory – Spares development and indigenization and introduced the concept of Spares Pooling – Adopting Annual Rate Contract for consumable items

Technological advances in O&M practices ensure AGEL is at par with global standards of operations

RONC – World Class Monitoring and Analytics

RONC (Remote Operations Nerve Center)

- Centralization of overall management of all Adani sites from a single location
- Data Analytics driven decision making
- Drive world class operational performance as sustainable competitive advantage
- Create potential for new business providing operations as a service to other power companies

RONC Benefits

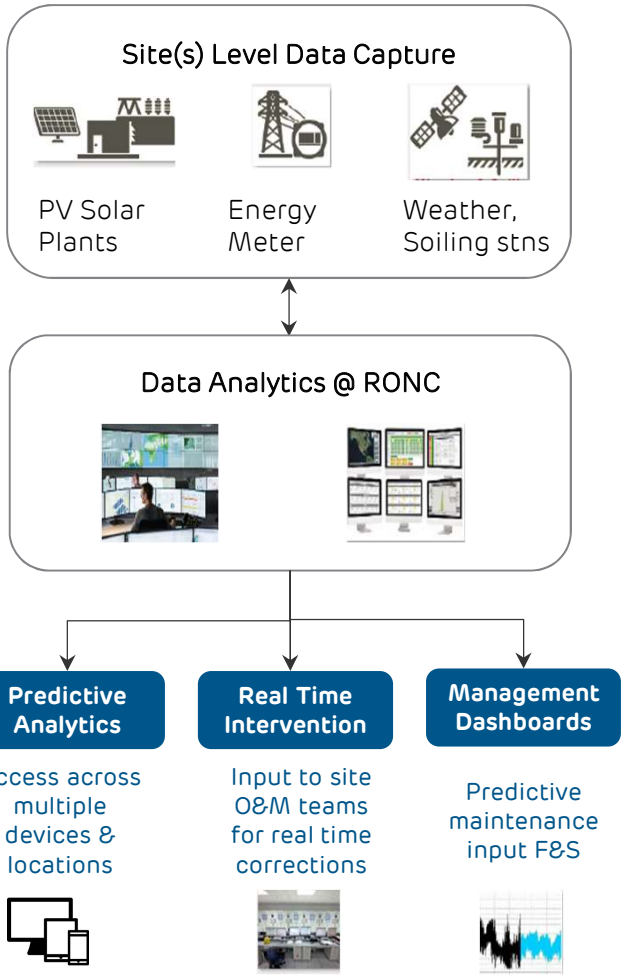
Centralized Management
- Ability to manage large number of sites
- Support increasingly complex operations

Fully Automated Operation
- Minimal manual intervention
- Reduce maintenance cost – increasing margins

Real Time Data Availability
- Access plant performance data anywhere (desktop, mobile) & anytime – both real time and historical data

Business Intelligence
- Leveraging analytics and Machine Learning to improve operational performance to industry leading levels

RONC Operational Flow



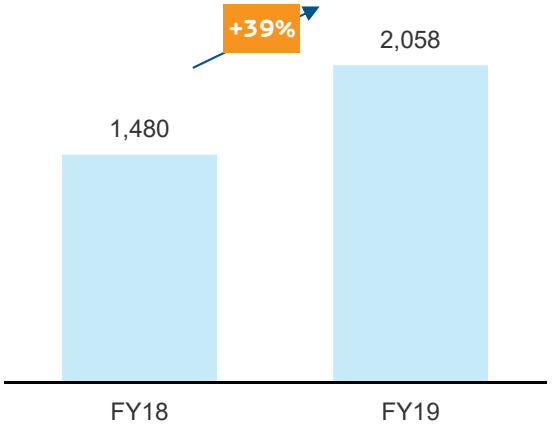
RONC will allow centralisation of all operations and help in delivering world class O&M practices

2.Adani Green Energy

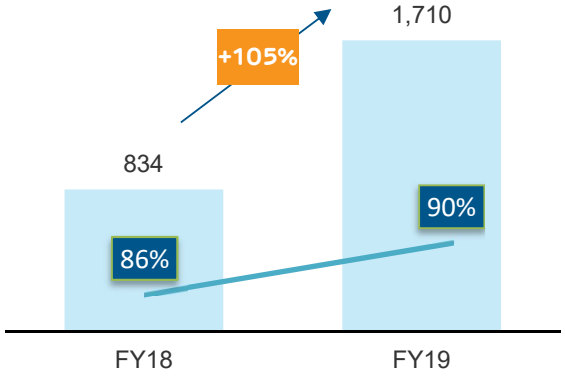
E. Financials & Financing Philosophy

Robust financial performance driven by fully contracted cash flows

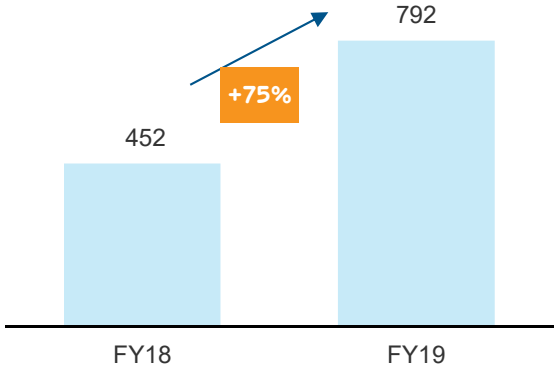
Revenue (Rs Cr.)[1]



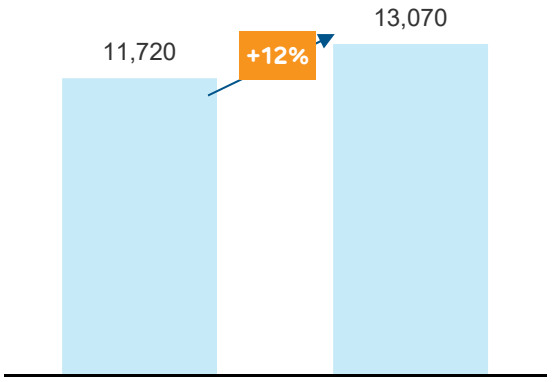
EBITDA[7] (Rs Cr) and margin[5] (%)



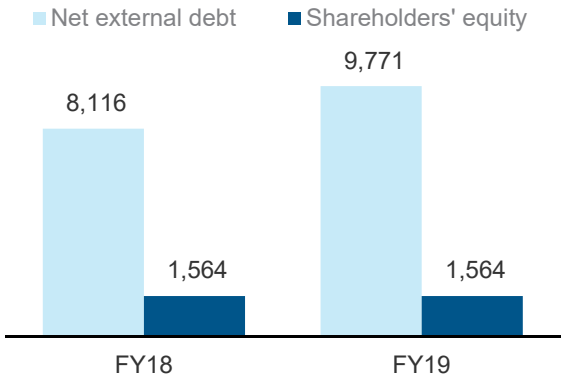
Cash Profit[6] (Rs. Cr)



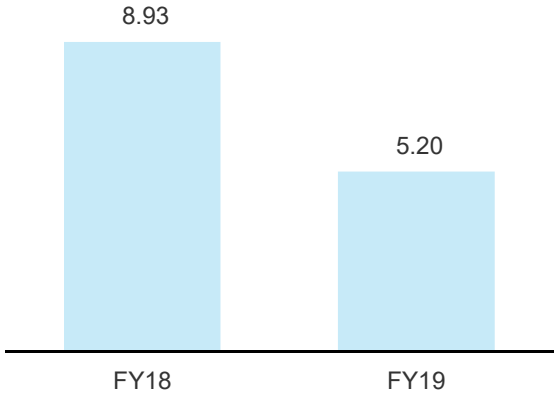
Investment in CAPEX (gross) (Rs Cr)



Net external debt[2] and Shareholders' equity[3] (Rs Cr)



Net External Debt for operating projects[4] / EBITDA



Notes:
[1] Revenue reflects income from Operation
[2] Net external debt = long-term borrowings + short-term borrowings + current maturities of long-term borrowing + Capex Creditors (DA Bills) – Trade Receivables - cash and cash equivalents - bank and other bank balances - current investments- intercorporate deposit taken from related party
[3] Shareholders' equity calculated as equity share capital only (i.e, excludes reserves and surplus and minority interest, inter-alia).
[4] Net External Debt[2] - Debt taken for project under implementation
[5] EBITDA Margin represents EBITDA earned from power sales and exclude other items
[6] Cash profit = EBITDA + Other income – Interest and bank charges – income tax expenses
[7] EBITDA = Revenue from Operation – Cost of Material consumed - Operation and Maintenance Expenses

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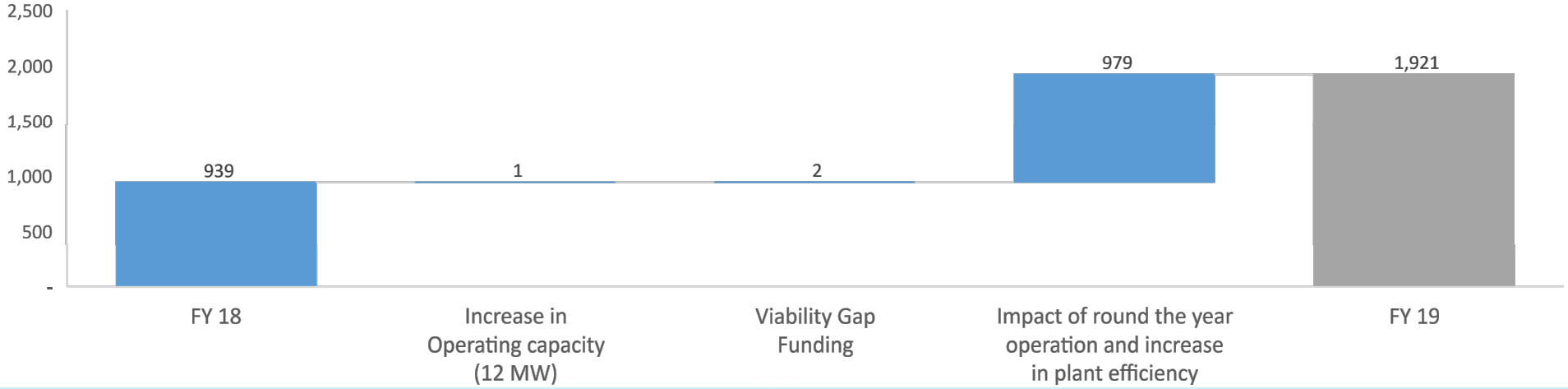
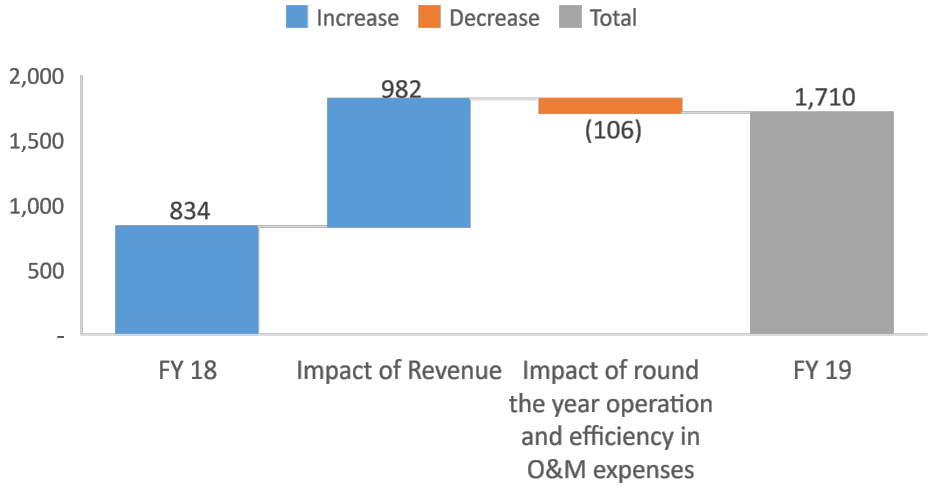
Revenue, EBITDA & Net External Debt bridge Y-o-Y

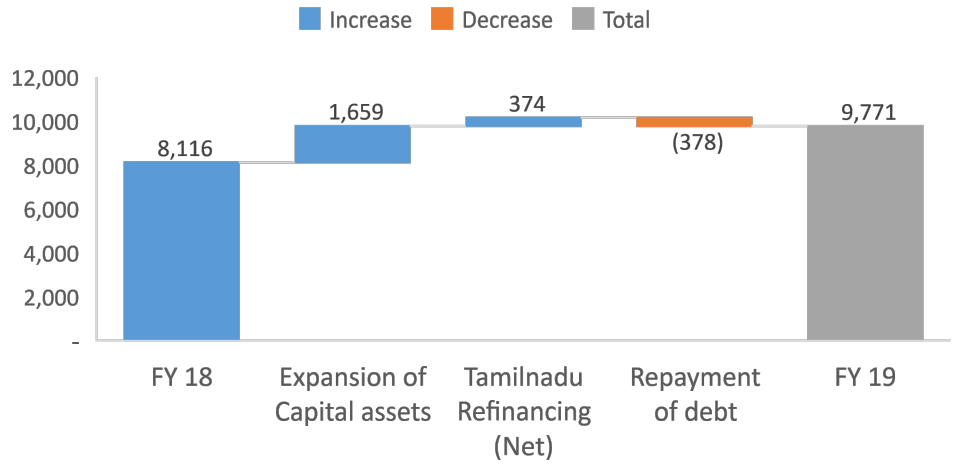
Revenue from Power Supply



EBITDA



Net External Debt



Financial Summary – Income Statement

Particulars (INR Cr)	Q4'19	Q4'18	FY19	FY18
Revenue from Operation	681	406	2058	1480
Other income	38	11	73	39
Total Revenue	**719**	**417**	**2131**	**1519**
Cost of material consumed and others	130	109	130	514
Operational & Maintenance expenses	81	49	218	132
Finance Costs	274	142	985	418
Derivative and Exchange difference	21	22	320	121
Depreciation and amortization expenses	293	166	1062	543
Total Expenses	**799**	**487**	**2716**	**1729**
Profit / (Loss) Before Tax	**-86**	**-71**	**-588**	**-210**
Tax Expense (including deferred tax)	8	-28	-113	-73
Profit / (Loss) After Tax	**-94**	**-43**	**-475**	**-138**
EBITDA[3]	**470**	**248**	**1710**	**834**

Particulars (INR Cr)	FY19	FY18
Cash Profit[1]	**792**	**452**
Cash profit available for equity share holders[2]	**413**	**361**
Cash profit available per share[2]	**2.64**	**2.31**

[1] Cash Profit = Profit / (Loss) after Tax + Deferred Tax + depreciation + Derivative and Exchange difference
[2] Cash profit available for equity shareholders = Cash Profit - Scheduled Repayments
[3] EBITDA = Revenue from Operation – Cost of Material consumed - Operation and Maintenance Expenses

Financial Summary – Balance Sheet

Particulars (INR cr)	FY19	FY18
Assets		
Non Current Assets		
Fixed Assets: Gross Block	12,331	9,996
Less :-Accumulated Depreciation	(1,943)	876
Net Block	10,388	9,120
Capital work-in-progress	743	1,725
Financial Assets	507	453
Deferred Tax Assets	376	246
Other Non Current Assets	570	434
Current Assets		
Inventories	136	1692
Trade Receivables	758	848
Cash and Cash Equivalent	361	457
Other Financial Assets	42	530
Other Current Assets	400	204
Total Assets	**14,658**	**15,709**
Equity and Liabilities		
Total Equity	840	1,341
Unsecured Perpetual Debt[1]	1,093	-
Non Current Liabilities		
Borrowings	9,948	8,373
Other	78	16
Current Liabilities		
Borrowings	742	1,351
Payables	194	119
Other financial liabilities	1,763	4,509
Total Equity + Liabilities	**14,658**	**15,709**

1. Promoter Debt of perpetual nature in form of ICD has been re-categorized as Perpetual Debt

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Capital Structure as enabler for growth

Debt Philosophy

100%

Project debt self-amortizing before end of contracted life

+95%

of FX and interest rate fixed or hedged

1 year

"Tail periods" in all SPV level debt

Highest Rated Indian Renewable Bond Issuer

AGEL has successfully raised USD 500 mn Green Bonds. The issue has been rated BB+ by S&P and BB+ by Fitch and AA (SO) by IndRa & CRISIL

Efficient refinancing to unlock cash flows for growth

Pool with diversified Counterparty Mix

- NTPC – 370 MW (40%)
- SECI – 160 MW (17%)
- State DISCOMs with A rated or more – 160 MW (17%)
- Other State DISCOMs – 240 MW (26%)

Stable & Predictable Cash Flows

- 100% contracted business with **Long term PPA's (~25 years)**
- Over 60% (on fully completed basis) with **Sovereign equivalent counterparties**

Project Finance protections

- Each pool is ring fenced
- Debt size and covenant linked to credit quality
- Generation mix is assured for life of pool

Robust Operational & Financial Performance

- High margins (~90% EBITDA margin), sustained growth and strong credit (conservative with all debt retired within PPA term)
- Comprehensive information and compliance package

Highest Rated Indian Renewable Bond Issuer
Vision to make AGEL IG rated by focusing on cost of capital & accretive returns

Debt Repayment includes the repayment of existing debt + debt to be drawn for the construction of projects in pipeline today. Straight Line repayment for under construction assets debt

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F. Compelling Investment Opportunity

AGEL: A Compelling Investment Opportunity

1. Infrastructure lineage

- Adani group is a leader in infrastructure –ports, T&D, thermal power and renewables
- Proven track record of excellence in development & construction

2. Significant Growth Opportunity

- India plans to grow renewables from 75GW to 175GW in next few years
- Economics of renewable power superior to that of thermal
- AGEL has large land bank, rich in solar and wind resources, located next to green corridor

3. Disciplined Capital Allocation

- Disciplined approach towards new project bidding, strong focus on returns
- Optimal capital management to drive cash available to equity holders

4. World-class O&M practice

- Proven track-record operating ~2GW solar & wind
- Remote Operating Nerve Centre centralises all operations and in delivering world class O&M practices

5. Stable & predictable cash-flows

- 100% contracted business with **long term PPA's (~25 years)**
- Over 60% offtake by **NTPC & SECI** (on fully completed basis)

Thank You

A

APPENDIX
List of Annexures

Wind Projects

Solar

Hybrid

Asset Level Details – Operational*

SPV	Project Name / Location	Type	Capacity (AC)	Tariff	COD	Counterparty		
						Name	Credit Rating	Term
AGETNL	AGETNL	Solar	216	7.01	Mar-16	TANGEDCO	ICRA (B)	25
	RSPL	Solar	72	7.01	Feb-16	TANGEDCO	ICRA (B)	25
	KREL	Solar	72	5.76[1&2]	Mar-16	TANGEDCO	ICRA (B)	25
	KSPL	Solar	216	5.10[1]	Sept-16	TANGEDCO	ICRA (B)	25
	RREL	Solar	72	5.10[1]	Sept-16	TANGEDCO	ICRA (B)	25
AGEUPL	Karnataka	Solar	240	4.57[4]	Sept-17-Mar-18	Karnataka ESCOMS	ICRA (B+ to A)	25
	Jhansi	Solar	50	5.07[5]	May-19	UPPCL	ICRA (C)	25
KSPPL	Karnataka	Solar	20	4.36[4]	Jan-18	BESCOM	ICRA (A)	25
PDPL	Punjab 100	Solar	100	5.88	Jan-17	PSPCL	ICRA (B+)	25
	UP – II	Solar	50	4.78	Jul-17	NTPC	Baa2/BBB-	25
	AP – Ghani	Solar	50	5.13	Oct-17	NTPC	Baa2/BBB-	25
	Rajasthan – 20	Solar	20	4.36	Nov-17	NTPC	Baa2/BBB-	25
PSEPL	T'gana (open)	Solar	50	4.67	Dec-17	NTPC	Baa2/BBB-	25
	T'gana DCR	Solar	50	5.19	Dec-17	NTPC	Baa2/BBB-	25
	Karnataka – 100	Solar	100	4.79	Jan-18	NTPC	Baa2/BBB-	25
	Chattisgarh	Solar	100	4.425[3]	Mar-18	SECI	ICRA (AA+)	25
	Karnataka Pavagada – DCR	Solar	50	4.86	Feb-18	NTPC	Baa2/BBB-	25
	Karnataka – DCR	Solar	40	4.43	May-18	SECI	ICRA (AA+)	25
	Karnataka – 10	Solar	10	5.35	Oct-17	GESCOM	ICRA (B)	25
	Maharashtra	Solar	20	4.16[6]	Mar-18	SECI	ICRA (AA+)	25
Wardha Solar	Karnataka	Solar	350	4.43	Feb-May18	SECI	ICRA (AA+)	25
AGEL – Lahori	MP	Wind	12	5.92	Mar-16	MPPMCL	ICRA (C+ & B+)	25
AWEGPL	Gujarat	Wind	48	3.92	Mar-17	GUVNL	ICRA (A+)	25
Mundra Wind	Gujarat	Wind	12	3.46	Feb-19	MUPL	ICRA AA+	25
Total			**2,020**					

1. Appeal has also been filed by NSEFI before APTEL for extension of control period and restoration of tariff.
2. KREL's 72 MW plant is split for Tariff purpose by TANGEDCO into 25 MW and 47 MW at Tariff of 7.01 Rs./kWh and 5.10 Rs./kWh respectively. The said order has been challenged before the Tamil Nadu High Court.
3. The Company has filed Force Majeure claim on account of stay order issued by the Hon'ble High Court of Chhattisgarh. SECI has not accepted our claim. Petition is being filed before CERC challenging the said reduction in tariff from Rs. 4.43/kwh to Rs. 4.425/kwh and LD deduction.
4. The Company has filled petition with KERC for extension of original PPA tariff instead of regulated tariff (Rs. 4.36/kwh) due to force majeure reasons.
5. As per UPERC order, tariff has been revised from Rs .8.44 to Rs. 5.07. Order has been appealed before APTEL, where currently pleadings are being done.
6. For Kilaj a petition is being filed before CERC.

* Details as of June'19

Asset Level Details – Under Construction

Wind Projects
Solar
Hybrid

SPV	Project Name / Location	Type	Capacity (AC)	Tariff	COD	Counterparty		
						Name	Credit Rating	Term
ARERJL	Rajasthan	Solar	200	2.71	Aug-19	MSEDCL	ICRA (B+)	25
AGEONEL	Gujarat	Solar	150	2.67	Nov-20	GUVNL	ICRA (A+)	25
GSBPL	Gujarat	Solar	100	2.44	Aug-20	GUVNL	ICRA (A+)	25
Kilaj SMPL – SECI	Rajasthan	Solar	50	2.54	July-20	SECI	ICRA (AA+)	25
Kilaj SMPL – UPNEDA	UP	Solar	100	3.21	Sept-20	UPPCL	ICRA (C)	25
UPPCL	UP	Solar	75	3.08	Nov-20	UPPCL	ICRA (C)	25
AGEMPL – SECI 1	Gujarat	Wind	50	3.46	July-19	SECI	ICRA (AA+)	25
AGEMPL - SECI 2	Gujarat	Wind	50	2.65	July-19	SECI	ICRA (AA+)	25
AGEMPL - SECI 3	Gujarat	Wind	250	2.45	Nov-19	SECI	ICRA (AA+)	25
AREGJL	Gujarat	Wind	75	2.85	Jan-20	MSEDCL	ICRA (B+)	25
ARETNL – SECI 4	Gujarat	Wind	300	2.51	Feb-20	SECI	ICRA (AA+)	25
AWEGJL – SECI 5	Gujarat	Wind	300	2.76	Jul-20	SECI	ICRA (AA+)	25
INOX 1 @	Gujarat	Wind	50	3.46	Apr-19	SECI	ICRA (AA+)	25
INOX 2 @	Gujarat	Wind	50	3.46	May-19	SECI	ICRA (AA+)	25
INOX 3 @	Gujarat	Wind	100	2.65	July-19	SECI	ICRA (AA+)	25
AGETHREEL	Gujarat	Wind	250	2.82	Dec-20	SECI	ICRA (AA+)	25
Hybrid	Rajasthan	Hybrid	390	2.69	Sept-20	SECI	ICRA (AA+)	25
Total			2,540					

1. Appeal has also been filed by NSEFI before APTEL for extension of control period and restoration of tariff.
2. KREL's 72 MW plant is split for Tariff purpose by TANGEDCO into 25 MW and 47 MW at Tariff of 7.01 Rs./kWh and 5.10 Rs./kWh respectively. The said order has been challenged before the Tamil Nadu High Court.
3. The Company has filed Force Majeure claim on account of stay order issued by the Hon'ble High Court of Chhattisgarh. SECI has not accepted our claim. Petition is being filed before CERC challenging the said reduction in tariff from Rs. 4.43/kwh to Rs. 4.425/kwh and LD deduction.
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5. As per UPERC order, tariff has been revised from Rs .8.44 to Rs. 5.07. Order has been appealed before APTEL, where currently pleadings are being done.
6. For Kilaj a petition is being filed before CERC.

AGEL: International Opportunities

Project Name	MIDLAND	HARTSEL	HUNTER	SIGURD	US Total	Vietnam Solar	Vietnam Wind
Project Capacity (MWac)	72.1	72	100	80	**324.1**	38.1 MWac	27.2 MW
Location	South Carolina	Colorado	Utah	Utah		Ninh Thuan Province	
Expected Project CoD	Jul-20	Dec-22	Dec-20	Dec-20		Dec-20	Dec-20
Offtaker	South Carolina Electric & Gas Co	Xcel Energy	PacifiCorp	PacifiCorp		Electricity of Vietnam ("EVN")	Electricity of Vietnam ("EVN")
PPA Tariff ($/MWh)	$33.65	$26.84	$31.28	$28.82		$93.5	$85
Total Project Cost (USD Mn)	516.3				**516.3**	113.5	
AGEL's Interest	51%				**51%**	100%	
AGEL's Expected Equity (USD Mn)	43						

In addition to the above, AGEL holds 10% stake in the 65 MW Rugby Run project in Australia for which limited corporate guarantee has been given.

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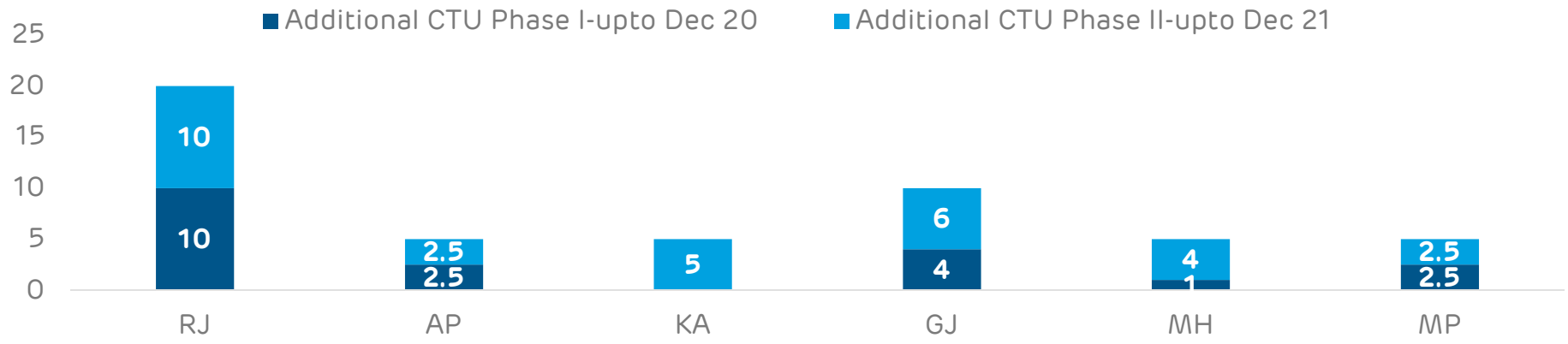
Adani Green Energy

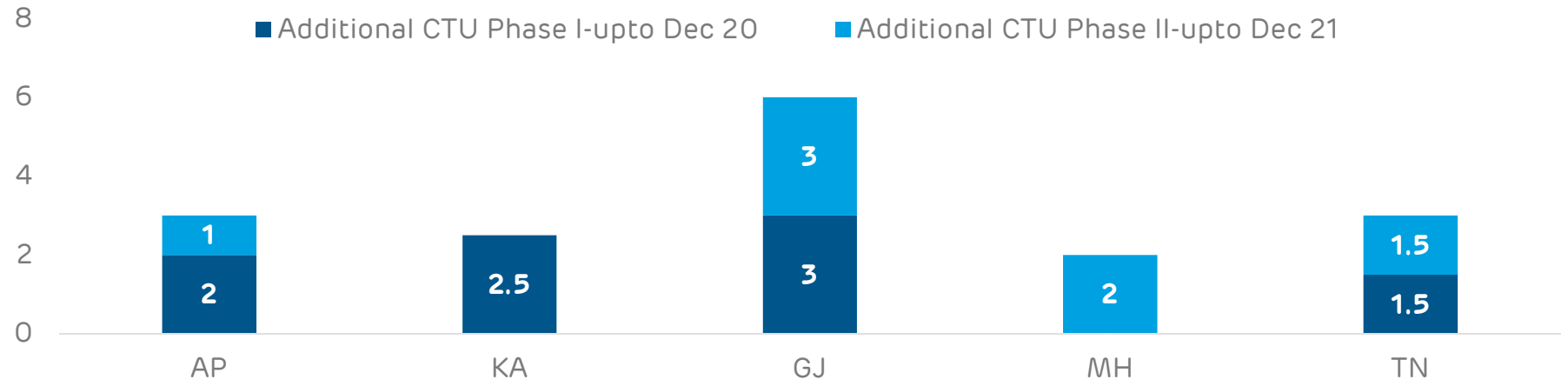
India's Grid Infrastructure will be able to Integrate the Targeted 175GW of Renewable Capacity

Proposed grid addition to absorb upcoming renewable capacity

Proposed CTU for 50 GW of incremental Solar



Proposed CTU for 16.5 GW incremental Wind



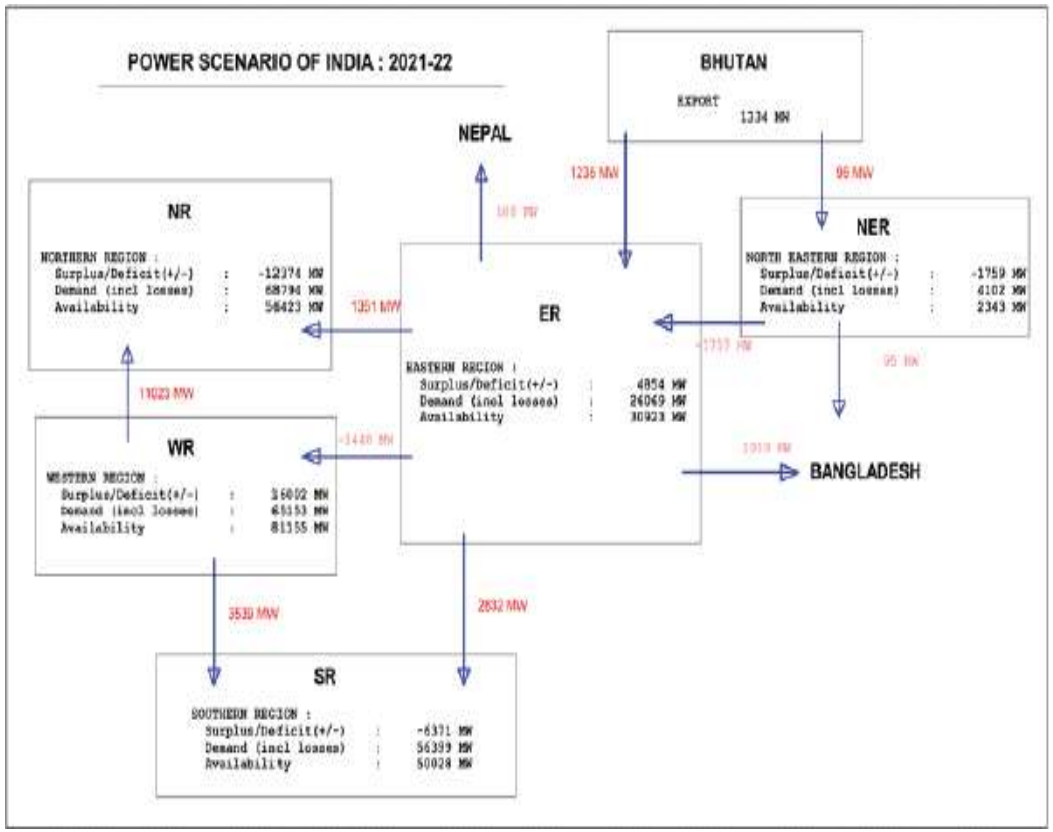
Source : Central Electricity Authority 2nd National Committee on Transmission (NCT) report.

Scenario with Integration of 175 GW Renewable power (by FY 2021-22)

Central Electricity Authority (CEA) recently conducted a study, and demonstrated that it is feasible to integrate the new renewable capacity, with various options

Inter-Regional power flow during Peak demand (FY 2022)

- WR and ER will have surplus of ~16 GW and ~5 GW resp.
- NR and SR will have a deficit of ~12.5 GW and ~6.5 GW, resp.
- ~11 GW power will flow from WR to NR against available capacity of ~36.5 GW
- ~3.5 GW and 3 GW will flow from WR and ER to SR, resp. against available capacity of ~24 GW and 7 GW resp.



Load flow studies for peak as well as off-peak conditions with RE integration shows that there is no congestion in the 400 kV and above system of the National grid

Source : CEA report on Flexible Operation of thermal power plant for integration of renewable generation – Jan'19

NR: Northern Region; ER: Eastern Region; WR: Western Region; SR: Southern Region; NER: North Eastern Region

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Integration of 175 GW Renewable power -
Without any burden on exchequer (Option 1)

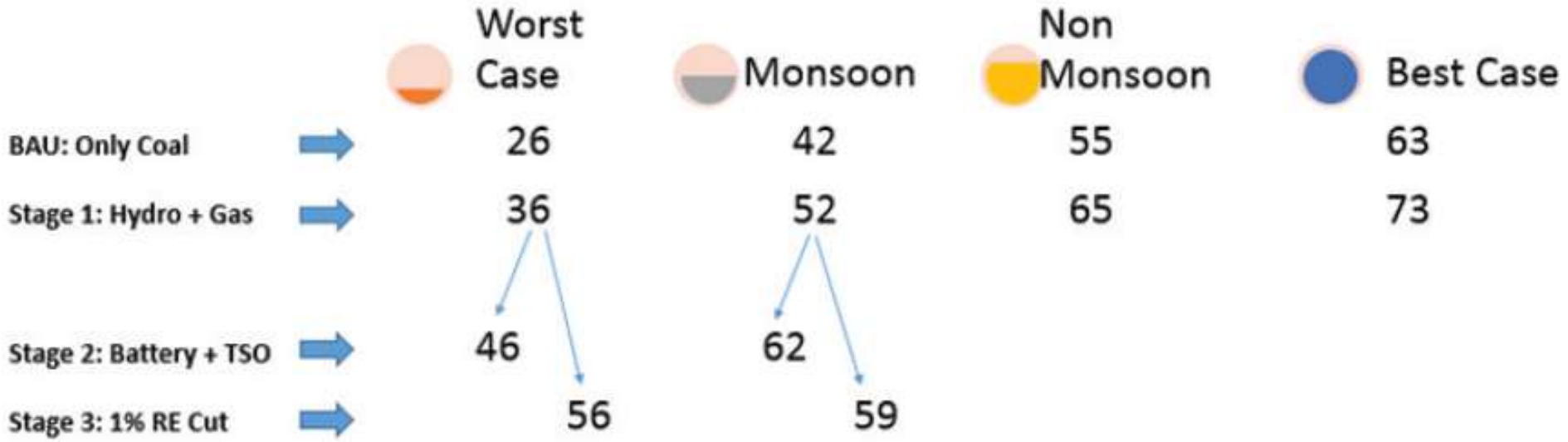
Grid balancing with Flexible Operation

Step 1 - Reallocation of Hydro and Gas plant generation to peak hours

Step 2 - Flexible power from Battery Storage

Step 3 - Curtailment of Renewable Energy Source

Minimum Thermal Load (MTL) under various season/case



With 1% curtailment of RE power, Thermal power plant can operate at Technical Minimum load of 55% without any commercial burden on the System operator/DISCOM.
Alternatively mandatory establishment of battery storage of 2.5% of daily energy generation at solar or wind plants will avoid the curtailment of RE power.

Source : CEA report on Flexible Operation of thermal power plant for integration of renewable generation – Jan'19

BAU: Business as Usual; TSO: Two Shift Operation

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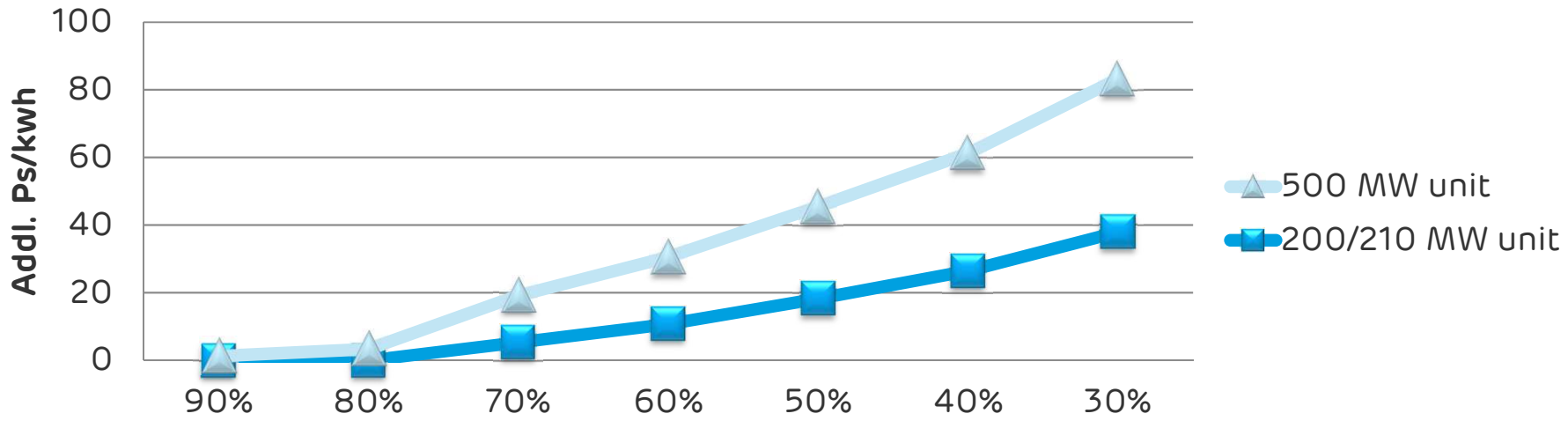
Integration of 175 GW Renewable power -
With additional compensation to Thermal power plants (Option 2)

Grid balancing with Flexible Operation of Thermal Power plant without RE curtailment

Flexible operation of Thermal power plant below technical minimum will lead to following:

1. Increase in Net Heat Rate
2. Life Consumption leading to increased O&M cost
3. Increased Oil consumption due to frequent Start/Stop.

Summary of Additional Operational cost to Thermal power plant



With additional cost upto 50 Paise/kwh to Thermal power plants, large scale integration of RE power is possible without any curtailment.

Source : CEA report on Flexible Operation of thermal power plant for integration of renewable generation – Jan'19

Adani Green Energy

Current Solar PV Technology allows plant life well beyond the PPA life of 25 years

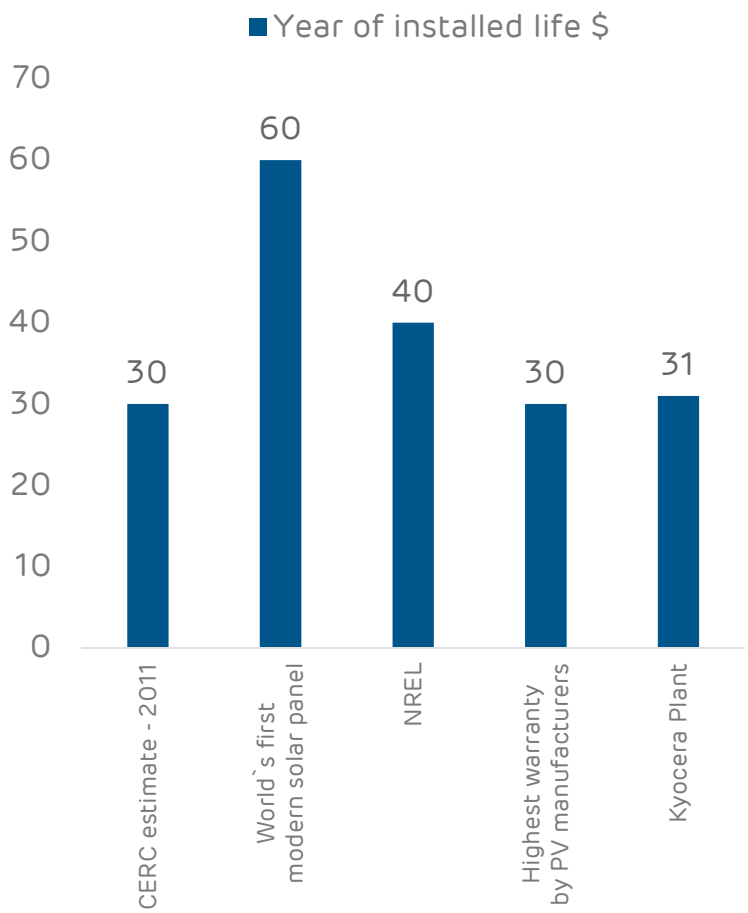
Solar PV modules have a life well beyond the PPA life of 25 years

What is Module Degradation?

- ❑ Light Induced Degradation (LID), permanently degrades modules starting from the first ray of solar radiation and extends further up to six months
- ❑ Annual Degradation – Efficiency of solar modules reduces gradually during the module life due to environmental conditions

AGEL's Experience

- Degradation depends on quality of the cells used, manufacturing process and O&M practices
- We procure our modules from Tier-1 manufacturers
- Better O&M practices aided by string level analytics capability of the string inverters in most of our plants has made us achieve degradation lower than that mentioned by the manufacturer
- Generally, at the end of 25 years (design module life), module manufacturers guarantee 80% of nameplate efficiency



Global Experience

Compendium of photovoltaic degradation rates by Jordan et al:

"**At the time of writing this report, <u>more than 30 studies of systems older than 20 years have been reported, with some 30 years and one even approaching 40 years</u>"[1].**

Solar PV modules have a life well beyond the PPA life of 25 years

[1] Jordan, D, Kurtz, S, VanSant, K and Newmiller, J 2016, *Compendium of photovoltaic degradation rates*, Progress in Photovoltaics

$ NREL, CERC, https://energyinformative.org/lifespan-solar-panels/ https://www.kyocerasolar.com/about/