Detailed Study of the Financial Health, Challenges & Scope for expanding business of POSOCO

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About the Company:

Power System Operation Corporation Limited (POSOCO) is a wholly-owned Government of India Enterprise under the Ministry of Power. It was earlier a wholly-owned subsidiary of Power Grid Corporation of India Limited (PGCIL). It was formed in March 2009 to handle the power management functions of PGCIL. It is responsible to ensure the integrated operation of the Grid in a reliable, efficient, and secure manner. It consists of 5 Regional Load Despatch Centres and a National Load Despatch Centre (NLDC).

The subsidiary was eventually made a separate company in January 2017, leaving the parent firm with only the task of setting up transmission links. The load despatch functions, earlier handled by PGCIL, have now come up to POSOCO.

POSOCO operates the Power System of the country through National Load Despatch Centre (NLDC) located at New Delhi and Regional Load Despatch Centre (RLDCs) located at New Delhi, Kolkata, Mumbai, Bangalore and Shillong. POSOCO is required to maintain the grid security, reliability and ensure the integrated operation of Indian Power System. The NLDC / RLDCs discharge their function in a fair and non-discriminatory manner.

NLDC, POSOCO inter - alia is the Nodal Agency for many responsibilities, like Point of Connection mechanism for sharing of interstate transmission charges and losses (PoC), Power System Development Fund (PSDF), implementation of the Renewable Energy Certificate Mechanism and Registry of Energy Saving Certificates (ESCerts) under Perform, Achieve & Trade Scheme for energy efficiency. NLDC has also been designated as Control Room for disaster management in the Power Sector. POSOCO aspires to be a catalyst for a successful energy transition and consequently to achieve a reliable, sustainable and affordable energy system. By policy advocacy and regulatory support, POSOCO promotes both the grid integration of renewables and further expansion of the Indian energy market appropriately designed to accommodate distributed generation and new technologies such as Electric Vehicles and Storage.

Parent/Group Support Parent:

100% GoI enterprise (under to Ministry of Power)

Chairman & Managing Director: KVS BABA

Financial Highlights:

Details	2017-18	2018-19
Total Income (Increased)	25,638.50	32,720.57
Gross Margin (Decreased)	9,281.28	8,389.39
Profit before Interest and Taxes (PBIT) (Decreased)	7,327.21	6,347.17
Profit Before Tax (PBT) (Decreased)	7,198.19	6,340.50
Profit After Tax (PAT)* (Decreased)	4,799.69	4,309.87
Gross Fixed Assets (Increased)	18,238.50	19,814.64
Net Worth (Increased)	35,254.37	38,550.74

Realization of about 90% was achieved against billed revenue of ₹15182 lakh during the year.

Interim Dividend @12.40% amounting to ₹379.94 lakh was paid by the Company to Ministry of Power on 28.03.2019

Key Performance Indicators:

Financial Ratio Analysis				Interpretations
	UNIT	2017-18	2018-19	
Assets Management				
Current Ratio (Decreased)	times	1.24	1.12	Company's ability to pay its bill, a higher ratio indicates greater financial strength
Quick Ratio (Decreased)	times	1.24	1.12	Company's ability to deal with its liability quickly without liquidating its inventory (Since this company has **no inventory**)
Fixed Assets Turnover (Increased)	times	2.17	2.93	Higher the number, better the company is at employing the assets to generate revenue
Days sales outstanding (Increased)	days	12.68	20.72	Tells how long it takes a company to collect what it is owed
Capital Productivity				
Resource Input (Decreased)	times	0.18	0.11	Tells the characteristics of the industry, how efficiently **capital** is used to generate output
Profitability				
Net Profit Margin (Decreased)	%	18.57	13.53	Tells how much a company earns as a percentage of every sales rupee
Operating Profit Margin (Decreased)	%	35.79	23.58	Tells how profitable a company's operating activities are
RoE (Decreased)	%	13.01	11.09	Profit company is generating as a percentage of the owner's investment
Return on Asset (Decreased)	%	3.35	1.48	The efficiency of a company for using its assets to generate profit
Return on Capital Employed (Decreased)	%	9.64	4.70	Higher ROCE implies a more economical use of capital

Financial Leverage				
D-E Ratio & DSCR (Zero Debt Company)	times	0.00	0.00	Company's borrowings compared to equity, higher D/E ratio shows high leverage to raise capital.
Company Valuation				
Revenue	%	14.97	27.62	**(Increased)**
Net Worth	Rs	35,254.3	38,550.7	**(Increased)**
EPS	Rs	15.35	14.13	**(Decreased)**
Fixed Cost	Rs	18,440.3	26,380.0	**(Increased)** Basically showing that structural cost is increasing
Variable Cost	Rs	0.00	0.00	**0**
Contribution		20,112.7	26,892.9	**(Increased)** it is increasing due to an increase in sales
EBIT	Rs	7,327.21	6,347.17	**(Decreased)**
Leverage & Break-Even Revenue				
Operating Leverage (Increased)	times	2.74	4.24	How much the **operating income** of a company will change in response to a change in sales (Since **Fixed Charges are increasing**, therefore, OL is also increasing)
Financial Leverage (Increased)	times	1.02	1.00	Measures the sensitivity of a company's earnings per share (EPS) to fluctuations in its operating income
Combined Leverage (Increased)	times	2.79	4.24	(This is all due to the increase in the Structural Cost of the Company)
BER (Increased)	%	64.21	76.42	The measure of revenue used to recover the fixed costs

Most of the ratios are showing a decreasing trend especially the one which takes Expenses into consideration for calculation. Since Revenues has been increasing but the increase in Expense of the company is much more than that of the increase in Revenue. Hence overall profit has been also decreasing.

Strength

- **Financial flexibility owing to 100% GoI enterprise and Monopoly**
  Since this company being a 100% GoI enterprise, and can enjoy financial flexibility in terms of availing bank facilities at finer rates.

Weakness

- **Moderate financial risk profile characterised by decreasing profitability.**

Revenue from Operations

Gross Revenue for the Current Year is ₹20,018.07 Lakh as compared to revenue ₹14,265.13 lakhs for F.Y. 2017-18. The increase in revenue is due to Additional O & M Expense of ₹1,822.45, Pay Revision of ₹2306.52 lakh and Certificate Linked Incentive of ₹707.10 lakh as per CERC order dated 10.06.2019. Truing - up liability also decreased to ₹38.42 lakh in the current F.Y.2018- 19 as compared to ₹398.52 lakh for the F.Y.2017-18

Profit after Tax

Company's Profit after Tax in F.Y. 2018-19 was ₹4,309.87 lakh, as against ₹4,799.69 lakh in F.Y. 2017-18, including REC Net Surplus of ₹(-) 5.82 lakh (previous year ₹35.83 lakh) and ESCerts Net Surplus of ₹(-) 13.71 lakh (previous year ₹61. 51 lakh).

Company's ability to pay its bill is quite good but it has a huge amount of receivables outstanding which is causing liquidity crunch. Its profitability ratios are not showing good signs as its RoE and other ratios are very less. It's the ability to pay its principal repayments and interest payment is very bad.

Trade Receivables

Trade Receivables as on 31st March 2019 were ₹1,526.56 lakh against ₹698.93 lakh as on 31st March 2018. The realization of billed RLDC Fees & Charges is about 95.10%.

Challenges faced by the Company and Measures taken by it to overcome:

- **Grid disturbances due to natural calamities and unintended operation of protective systems**

In the past year, the company has faced situations in real-time grid operation where multiple line outages due to strong winds, cyclones, earthquake, floods, protective system mis-operations and tripping of bulk power transfer corridors (HVDCs) have threatened grid security and reliability. These multiple outages are generally not considered in the planning horizon, placing enormous challenges to the real-time grid operator. POSOCO has regularly apprised the system planners (CEA and CTU) and the Central regulator through operational feedback and in some cases have also filed a petition.

Step taken: Quick detection of such unintended operations, taking up with the concerned utilities through discussion in the Regional Power Committees (RPCs) followed by implementation of remedial measures are the ways in which POSOCO mitigates this risk. Further tripping of bulk power transfer transmission corridors such as HVDCs poses risk to secure and reliable grid operation.

- **Varying objectives of the electricity market players**

  The day to day operation of POSOCO is generally governed by the provisions of Electricity Act 2003, CERC Regulations & Procedures and CEA Regulations & Standards. These statutory documents may still be interpreted differently by different players and since the RLDCs/NLDC need to make decisions in real-time, some parties could feel aggrieved with the RLDC's decision and approach the CERC or higher courts leading to the commitment of resources by POSOCO.

  Step taken: POSOCO is informing the policymakers and regulators upfront in such cases and seeking necessary advice. Further, the decisions are taken in a transparent fashion with due communication to stakeholders. This mitigates the risk to a large extent.

- **Account of business processes which are required to keep pace with the reforms**

  With the growth of electricity markets in India, the day to day business processes has become complex and more data-intensive. New responsibilities are being assigned to POSOCO by the policymakers and regulators. Information Technology (IT) plays a key role. Since off-the-shelf solutions are rarely available in this area, solutions either need to be developed in-house or through vendors in a time-bound fashion. Any delays or failure in the implementation of such software development projects would affect the reform process and attract regulatory scrutiny.

  Such risks are sought to be mitigated through a combination of in house development of software and through vendors.

- **Temporary setbacks as a result of Attracting and Retaining talents**

  POSOCO's areas of responsibility call for a highly motivated and technically skilled workforce. Attracting and retaining talent is key. Attraction at different levels results in temporary setbacks.

  Adequate redundancies for each specialized task is ensured to minimize such setbacks but remain a risk to reckon with.

- **Risk of the company's image network failure**

  The interruption of critical activities in the event of an incident in NLDC or RLDCs would cause inability to guarantee continuity of critical activities in the event of a network failure, whether due to technical fault or external attack. It may have significant operational repercussions for POSOCO and by extension the Indian power system, and entail a risk for the company's image.

- **Collapse of the network in India**

  General electricity network incident (blackout) in one part of the Indian grid could result in the partial or total collapse of the network in India, with consequences that potentially extend beyond national borders. POSOCO systematically maintains its skills and is constantly working to reinforce network safety and improve its responses in the event of

difficulties. POSOCO has procedures that are laid out in detail in network protection, defence and restoration plans, describing the action to be taken depending on the situation arising. It also conducts crisis exercise and mock drills to ensure rapid responses in the case of an incident.

Growth Prospects

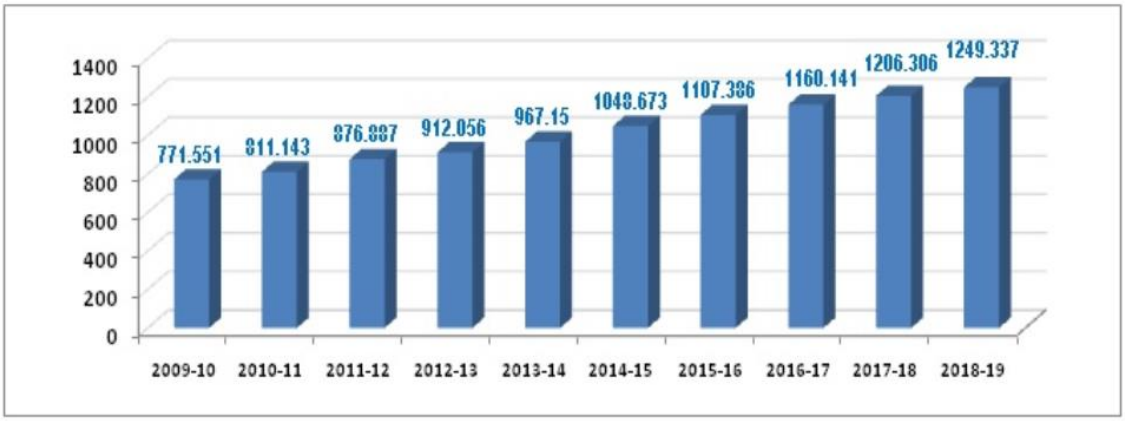
Power Supply Position

The power supply position in the country during 2009-10 to 2019-20 :

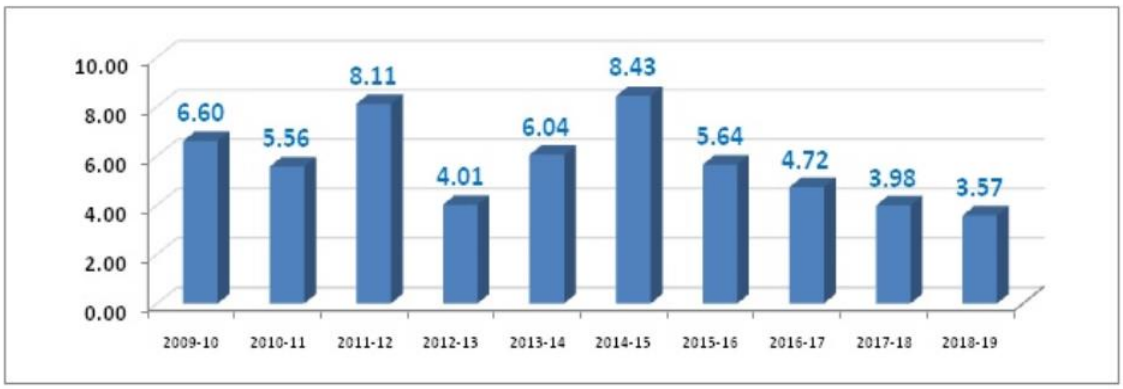
Year	Energy Requirement	Availability	Surplus(+)/Deficts(-)	
	(MU)	(MU)	(MU)	(%)
2009-10	8,30,594	7,46,644	-83,950	-10.1
2010-11	8,61,591	7,88,355	-73,236	-8.5
2011-12	9,37,199	8,57,886	-79,313	-8.5
2012-13	9,95,557	9,08,652	-86,905	-8.7
2013-14	10,02,257	9,59,829	-42,428	-4.2
2014-15	10,68,923	10,30,785	-38,138	-3.6
2015-16	11,14,408	10,90,850	-23,558	-2.1
2016-17	11,42,929	11,35,334	-7,595	-0.7
2017-18	12,13,326	12,04,697	-8,629	-0.7
2018-19	12,74,595	12,67,526	-7,070	-0.6
2019-20*	8,80,359	6,75,671	-4,688	-0.5

Year	Peak Demand	Peak Met	Surplus(+) / Deficts(-)	
	(MW)	(MW)	(MW)	(%)
2009-10	1,19,166	1,04,009	-15,157	-12.7
2010-11	1,22,287	1,10,256	-12,031	-9.8
2011-12	1,30,006	1,16,191	-13,815	-10.6
2012-13	1,35,453	1,23,294	-12,159	-9
2013-14	1,35,918	1,29,815	-6,103	-4.5
2014-15	1,48,166	1,41,160	-7,006	-4.7
2015-16	1,53,366	1,48,463	-4,903	-3.2
2016-17	1,59,542	1,56,934	-2,608	-1.6
2017-18	1,64,066	1,60,752	-3,314	-2
2018-19	1,77,022	1,75,528	-1,494	-0.8
2019-20*	1,83,804	1,82,533	-1,271	-0.7

Generation (Billion Units)



Generation Growth (%)



- As we can interpret from the above data that there has been a constant energy deficit since from past many years, so in order to provide **accessibility, security and sustainability** of electricity there is a tremendous scope for POSOCO to cater in this development.

  The Government of India's focus on attaining **'Power for all'** achieved success through **100 per cent village electrification** and universal household electrification is under progress. At the wholesale level, competition is being encouraged and fostered.

- **Diversification of India's Generation mix and Growth in Generation requires more focus on grid reliability and planning.**

  The continued diversification of India's generation mix continues to change the dynamics of the power system. The total installed capacity of power stations in India stood around 360 GW as on July 2019.

  The electricity generation target of conventional sources for the year 2019-20 has been fixed as 1,330 Billion Unit (BU) i.e. growth of around 6.46% over the actual conventional generation of 1249 BU for the previous year (2018-19).

Conventional generation witnessed a 3.57% increase in 2018-19 from 1206 BU generated during 2017-18 to 1249 BU this year.

In the year 2018-19, the aggregate capacity of around 8,619 MW of renewables was added. **Renewable generation witnessed a 25% increase in 2018-19** from 102 BU in 2017-18 to 127 BU in 2018-19. Wind and solar generation contributed close to 8% of the annual electrical energy consumption in 2018-19.

In F.Y. 2018-19, POSOCO continued to respond to challenges in meeting 182 GW demand with a focus on grid reliability and planning.

- **Power System Operation**

  The Indian Power system has witnessed good growth this year too, similar to last year. With the better System Operation and scope of a lot of improvement, India has been able to achieve the following:
  - Total All India Energy Met was 1288 Billion Units (BU) during FY 2018-19 as against 1205 BU during FY 2017-18 **(6.9% increase)**
  - All India Highest Demand Met was 175 GW during FY 2018-19 as against 161 GW during FY 2017-18 **(8.7% increase)**
  - Total All India Hydro Generation was 141 BU during FY 2018-19 as against 134 BU during FY 2017-18 **(5.2% increase)**
  - Total generation from Renewable sources was 127 BU during 2018-19 as against 102 BU during 2017-18 **(24.5% increase)**
  - Inter-regional exchange was 182 BU during FY 2018-19 as against 150 BU during 2016-17 **(21.3% increase)**

- Apart from carrying out a pilot project on 5-minute scheduling, accounting, metering and settlement. There are various scope in
  - Implementation of pilot projects on (Automatic Generation Control) AGC on hydro and solar power plants
  - Implementation of pilot project for FRAS for Central sector hydro generating stations
  - Implementation of Security Constrained economic Despatch (SCeD)
  - Improvement of Frequency Control in the All India Grid and Ancillary Services
  - Improvement in transfer capability between the regions and Grid incidents/Disturbances by monitoring the cases of tripping and reporting them.
  - Improving dynamic modelling and simulation capabilities.
  - To support the transformation to electric mobility and prepare the grid operations to facilitate the integration of electric vehicles into the grid.

Since NLDC has been designated as Nodal Agency and being a stakeholder in the NOAR system, due to the criticality and dependency, a robust solution through NOAR has envisaged. Proposal for Real-Time Market for Electricity in order to create a market platform for the trade of energy closer to the delivery of power in real-time has come into the picture which will ultimately help the NLDC to expand its market.

The salient features of the proposed Real-Time Market (RTM) for Electricity are as under:

- It would be a half-hourly market
- Price discovery mechanism would be a double-sided closed auction with a uniform price.
- The concept of gate closure would also be introduced, with a time line in consonance with half-hourly market
- Buyers/sellers would have the option of placing buy/sell bids for each fifteen-minute time block in the half-hourly real-time market.
- The generators having a long-term contract and participating in this market will be required to share the net gains (after accounting for the energy charge) with the discoms in the ratio of 50:50 as per the stipulation of the Tariff Policy, 2016.
- RTM would be financially and physically binding. If the utilities fail to follow the dispatch instruction post-RTM, it will attract charges under Deviation Settlement Mechanism.

Outlook

Indian power system is the largest national synchronous grid in the world which has evolved over the years and would continue to evolve further. The challenges on account of integrating increasing quantities of Renewable energy (RE) resources into the grid are well known. However, the measures being taken and enumerated above would ensure that the challenges of RE integration and energy transmission would be overcome. At the same time, the electricity sector in India cannot be seen in isolation. Economic growth, developments in other sectors would have an impact on the electricity sector in India too. However, the robust transmission system, diverse fuel mix of generation, diversity of demand etc. would help in overcoming any adversity and ensure reliable operation of the electricity grid in India.

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