1. EXECUTIVE SUMMARY

NLC India Limited (NLCIL), formerly Neyveli Lignite Corporation Limited, operates as a profit making Navratna Government of India (GoI) Enterprise, functioning under the administrative control of Ministry of Coal. NLCIL organises its businesses under Mining (Lignite and Coal), Power Generation (including thermal, solar and wind) and Power Trading. NLCIL serves as an important source of power generation to the states of Tamil Nadu, Andhra Pradesh, Karnataka, Kerala, Telangana, Rajasthan, and Union Territory of Puducherry.

NLCIL currently operates four opencast lignite mines with a combined capacity of 28.1 MTPA and one coal mine of 20.0 MTPA. During FY 2021-22, NLCIL has achieved an aggregate lignite production of 25.11 MT and coal production of 6.36 MT. The details of the existing operational mines are as shown in the table below:

Mines	Location	Total Reserves (MT)	Excavated till 31st Mar 2022	Capacity (MTPA)	Balance Reserves (MT)	Commissioning Year
Lignite						
Mine I	Neyveli, Tamil Nadu	463.92	380.09	8	83.83	1962
Mine II	Neyveli, Tamil Nadu	621.00	338.55	15	282.45	1985
Mine IA	Neyveli, Tamil Nadu	218.74	57.08	3	161.66	2003
Barsingsar	Rajasthan	53.00	15.27	2.1	37.73	2010
Coal						
Talabira II & III OCP	Odisha	553.98	7.41	20	546.57	2021

NLCIL is currently operating five thermal power stations, four at Neyveli, Tamil Nadu and one at Barsingsar, Rajasthan with total capacity of 3,640 MW. NLCIL has 1,421 MW of renewable energy installed capacity, including solar power plants aggregating 1,370 MW and wind power plant of 51 MW. The Installed power generation capacity of NLCIL have been presented in the below table.

Fuel type	Projects	Location	Capacity (MW)	Commissioning Year
Thermal	TPS-I Expansion	Neyveli, Tamil Nadu	420	2003
	TPS-II	Neyveli, Tamil Nadu	1,470	1986-1993
	TPS-II Expansion	Neyveli, Tamil Nadu	500	2015
	Barsingsar TPS	Barsingsar, Rajasthan	250	2011-2012
	Neyveli New Thermal Power Project (NNTPP)	Neyveli, Tamil Nadu	1,000	2021
Total thermal			**3,640**	
Renewable	Wind	Tirunelveli, Tamil Nadu	51	2017
	Solar	Tamil Nadu	10	2015
	Solar	Tamil Nadu	130	2017
	Solar Rooftop	Tamil Nadu	1.06	2018

	Solar	Andaman and Nicobar	20	2020
	Solar	Tamil Nadu	500	2019
	Solar	Tamil Nadu	709	2019
Total renewable			**1,421**	
Total			**5,061***	

* Standalone NLCIL capacity as of March 2022.

Apart from lignite-based power plants, NLCIL also operates one coal based thermal power plant of 1,000 MW (2 X 500 MW) capacity through its joint venture with TANGEDCO, NLC Tamil Nadu Power Limited. On consolidated basis, the installed capacity of NLCIL stood at **6,061 MW** as on 31st March 2022.

NLCIL has lined up various projects including expansion/augmentation of its existing mines and power plants, setting up of Greenfield mines & power plants, setting up of wind and solar power plants across the country.

On account of the new growth plan and intended diversification, NLCIL had awarded the work to IMaCS1 (hereafter referred as "ICRA Analytics Limited" or "ICRA Analytics") to update its existing Corporate Plan 2025 of NLCIL till the end of 2030 covering the proposed projects envisaged at that point of time. This report has been prepared by ICRA Analytics based on SBICAP's report, information provided by NLCIL, discussions with company executives, data from secondary sources considered reliable and ICRA Analytics' internal analysis and assessment

Proposed Projects in Corporate Plan 2030

Mining

In addition to the operational mines, NLCIL has a fair pipeline of projects under ongoing / planning stage, the details of which are presented in the below exhibits.

Details of lignite mining projects under development

Fuel type	Projects	Capacity (MTPA)	Estimated cost Rs. Crore	Status	Expected Commencement Year*
Lignite	Expansion of Mine IA from 3 MTPA to 7 MTPA	7	709	Ongoing	**2022**
	Mine III	11.5	2812	Planning	**2026**
Total		**18.5**	**3521**		

*Commencement Year refers to the Calendar Year

Details of coal mining projects

Fuel type	Projects	Capacity (MTPA)	Estimated cost Rs. Crore	Status	Expected Commencement Year*
Coal	Pachwara South Coal Block	9	1,795	Ongoing	**2023**
	Commercial Coal Block	15	1,922	Planning	**2026**
Total		**24**	**3,717**		

*Commencement Year refers to the Calendar Year

Mining Projects Year wise capacity addition (MTPA) has been presented in the below table.

Category	2022	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Mining - Lignite	-	4.0	-	-	-	11.5	(3.5)	-	-
Mining – Coal	-	-	9.0	-	15.0	-	-	-	-
Total	**-**	**4.0**	**9.0**	**-**	**15.0**	**11.5**	**(3.5)**	**-**	**-**

Mining Projects cumulative capacity addition (MTPA) has been presented in the below table.

Category	2022	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Mining - Lignite	28.1	32.1	32.1	32.1	32.1	43.6	40.1	40.1	40.1
Mining – Coal	20	20	29	29	44	44	44	44	44
Total	**48.1**	**52.1**	**61.1**	**61.1**	**76.1**	**87.6**	**84.1**	**84.1**	**84.1**

Based on the capacity addition envisaged, the below table represents lignite and coal production (Million Tonnes).

Category	2022	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E
Mining - Lignite	25.11	25.85	26.34	26.32	26.30	29.23	30.38	32.68	33.83
Mining – Coal	6.36	8.00	13.68	18.00	24.11	29.50	35.00	38.00	41.00
Total	**31.47**	**33.85**	**40.02**	**44.32**	**50.41**	**58.73**	**65.38**	**70.68**	**74.83**

The proposed mines plan till FY 2030 has been tabulated below.

Category	Mine Project	Capacity (MTPA)	Expected COD
Lignite Mine	Area Expn. Of Mine I & IA	4	2022
	Bithnok	-	On hold
	Hadla	-	On hold
	Mine III	11.5	2026
	Palyamkottai & South of Vellar*	-	On hold*
	Barsingsar Expn.	-	On hold
	Mine I Cap Reduction	(-) 3.5	2027
Lignite Mine	**Sub-Total (A)**	**12**	-
Coal Mine	Pachwara South	9	2023
	Commercial Coal Block	15	2026
Coal Mine	**Sub-Total(B)**	**24**	-
Mines (Existing)	**Sub-Total (C)**	**48.1**	-
Mining Sector	**Total (A+B+C)**	**84.1**	-

* NLCIL has plans to further expand the lignite mining capacity by implementing South Vellar Project of 11.50 MTPA capacity with an estimated project cost of Rs. 2,130 Cr. This Project will be the Fuel linkage for establishing TPS-II 2nd Expansion (2 X 660 MW). This project is not considered in Capacity addition, Capex and Financials submitted by ICRA.

Total capital expenditure (Rs. Crore) from FY 2021-22 to FY 2029-30 has been projected as follows.

Category	2022	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	Total
Mining-Lignite	38	10	95	104	1,406	844	562	-	-	3,059
Mining – Coal	133	260	1,333	948	1,105	1,013	500	-	-	5,292
Total Mining	**171**	**270**	**1,428**	**1,052**	**2,511**	**1,857**	**1,062**	**-**	**-**	**8,351**

Power Generation

On account of NLCIL's expertise in the field of generation and mining for the past 60 years and to cope up with the changing domestic scenario on fuel mix, it has been suggested that NLCIL focusses on generation through a diversified mix of power generation sources including coal, wind and solar in addition to lignite. NLCIL's major focus in the near future is proposed to be on coal- based power generation and hence NLCIL will be actively considering the core opportunities in setting up coal based TPP along with capacity addition in renewable space (wind and solar) in addition to the plans to set up lignite based TPS. The details of Ongoing and planned power projects of NLCIL has been projected in below table.

Fuel type	Projects	Capacity (MW)	Estimated cost (Rs. Cr.)	Status	Expected Commencement Year
Coal based	NUPPL, Uttar Pradesh	1,980	17,238	Ongoing	2022
TPS	Odisha Pit head TPS	3,200	25,896	Planning	2026-28
Total coal		**5,180**	**43,134**		

Renewable	Wind Project unit – 2	100	525	Planning	2024
	Solar – Ground Mounted, Neyveli	10	43	Planning	2022
	150 MW Wind - Solar Hybrid	150	922	Planning	2023
	250 MW Solar	250	1,213	Planning	2023
	500 MW Under CPSU Scheme	500	2,700	Planning	2024
	500 MW Under CPSU Scheme	500	2,500	Planning	2024
	600 MW Under CPSU Scheme	600	3,000	Planning	2025
	500 MW RE Power	500	2,500	Planning	2026
	500 MW RE Power	500	2,500	Planning	2027
	500 MW RE Power	500	2,500	Planning	2028
	500 MW RE Power	500	2,500	Planning	2029
	500 MW RE Power	500	2,500	Planning	2030
Total renewable		**4610**	**23,403**		

With the implementation of above projects, including ongoing and planned ones, NLCIL's power generation capacity would reach **15,851 MW**, including its subsidiaries, the phasing of which has been presented in the below exhibit.

Power Projects Year wise capacity addition (MW) has been presented in the below table.

Category	**2022**	**2023E**	**2024E**	**2025E**	**2026E**	**2027E**	**2028E**	**2029E**	**2030E**
Power – Lignite	-	-	-	-	-	-	-	-	-
Power – Coal	1,980	-	-	-	1,600	800	800	-	-
Power – Solar	410	1,000	600	500	500	500	500	500	-
Power – Wind	-	100	-	-	-	-	-	-	-
Total	**2,390**	**1,100**	**600**	**500**	**2,100**	**1,300**	**1,300**	**500**	**-**

Power Projects cumulative capacity addition (MW) has been presented in the below table.

Category	**2022**	**2023E**	**2024E**	**2025E**	**2026E**	**2027E**	**2028E**	**2029E**	**2030E**
Power – Lignite	3,640	3,640	3,640	3,640	3,640	3,640	3,640	3,640	3,640
Power – Coal	1,000	2,980	2,980	2,980	2,980	4,580	5,380	6,180	6,180
Power – Solar	1,370	1,780	2,780	3,380	3,880	4,380	4,880	5,380	5,880
Power – Wind	51	51	151	151	151	151	151	151	151
Total	**6,061**	**8,451**	**9,551**	**10,151**	**10,651**	**12,751**	**14,051**	**15,351**	**15,851**

*The capacity of 150 MW Solar-wind hybrid project has been considered under solar power.

The proposed power projects plan till FY 2030 has been tabulated below.

Category	**Power Project**	**Capacity (MW)**	**Year**
Power - Lignite	NNTPP	-	Commissioned
	Bithnok TPS	-	On hold
	Barsingsar TPS Expn.	-	On hold

	TPS II 2nd Expn. (P-I)	-	On hold*
	TPS II 2nd Expn. (P-II)	-	On hold
Power – Lignite	**Sub-Total (A)**	**-**	**-**
Power – Coal	NUPPL, Uttar Pradesh	1,980	2022
	Odisha Pit head TPS - Phase I & Phase II	3,200	2026-28
	Power Assets acquisitions	-	On hold
Power – Coal	**Sub-Total(B)**	**5,180**	**-**
Power – Solar	Solar Project - 1 (TN)	-	-
	Solar Project - 2 (TN)	-	-
	Solar Project – 3 (AP, MP, UP)	-	-
	Solar Ground Mounted, Neyveli	10	2022
	150 MW Wind-Solar Hybrid	150	2023
	250 MW Solar	250	2023
	500 MW Under CPSU Scheme	500	2024
	500 MW Under CPSU Scheme	500	2024
	600 MW Under CPSU Scheme	600	2025
	500 MW RE Power	500	2026
	500 MW RE Power	500	2027
	500 MW RE Power	500	2028
	500 MW RE Power	500	2029
	500 MW RE Power	500	2030
Power – Solar	**Sub-Total(C)**	**4,510**	**-**
Power – Wind	Wind Projects	100	2024
Power - Wind	**Sub-Total(D)**	**100**	-
Power – Existing	**Sub-Total(E)**	**6,061**	-
Power Sector	**Total (A to E)**	**15,851**	-

* NLCIL has plans to further expand the lignite based Power generation by implementing TPS-II 2nd Expansion Phase-I of capacity – 1320 MW (2 X 660) at Neyveli. Project is under Project development initiative taking into account the technology tie-up for lignite fired supercritical boilers with an estimated project cost of Rs. 11,189 Cr. With this addition Lignite based power generation capacity would reach 4960 MW from 3640 MW by 2030 there by cumulative capacity would be **17171 MW**. This project is not considered in Capacity addition, Capex and Financials submitted by ICRA.

Based on the capacity addition envisaged, the below table represents million units of power to be produced during the Corporate Plan period.

Category	**2022**	**2023E**	**2024E**	**2025E**	**2026E**	**2027E**	**2028E**	**2029E**	**2030E**
Power - Lignite	22,839	24,366	25,970	25,899	25,899	25,899	25,970	25,899	25,899
Power – Coal	4183	15,659	22,250	22,189	22,189	30,121	39,680	45,527	46,016
Power – Solar	2098	2,333	3,633	5,850	7,239	8,416	9,589	10,749	11,904
Power - Wind	85.2	94	156	397	397	397	397	397	397
Total	**29205**	**42,452**	**52,008**	**54,335**	**55,724**	**64,833**	**75,636**	**82,571**	**84,216**

Total capital expenditure (Rs. Crore) from FY 2021-22 to FY 2029-30 has been projected as follows.

Category	2022	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	Total
Power - Lignite	51	165	867	918	607	-	-	-	-	2,608
Power – Coal	1,998	2,110	4,445	6,777	6,000	3,900	2,900	2,313	1,783	32,226
Power – Solar	-	695	3,038	6,885	5,260	2,500	2,500	1,500	500	22,878
Power - Wind	-	-	-	525	-	-	-	-	-	525
Total	**2,049**	**2,970**	**8,350**	**15,105**	**11,867**	**6,400**	**5,400**	**3,813**	**2,283**	**58,237**

Diversification

NLCIL has adopted the diversification strategy and has earmarked capital expenditure of Rs. 4,397 Crore for OB to Sand and Lignite to Methanol projects.

The total capital expenditure for mining, power generation, and diversification businesses has been projected to be Rs. 70,985 Crore during FY 2022-30.

Lignite to Methanol/Diesel

Because of their high oxygen content in the form of moisture, direct liquefaction of lignite by various hydrogenation processes requires more hydrogen than required to liquefy bituminous and subbituminous coal. Lignite might be considered, therefore, as a more suitable feedstock for gasification and indirect liquefaction.

NLCIL is in the process of establishing lignite to methanol and Gasification projects. Methanol plant of 0.4 MTPA/1200 MTPD capacity is proposed at Neyveli. 1200 MTPD Methanol will replace 1.5 MMSCMD Natural Gas and will annually save Rs. 1000 Cr. of LNG import with indigenous source. This initiative of NLCIL will support Prime Minister's vision to achieve a target of 100 MT Coal Gasification by 2030. As per the study by M/s LEMAR USA, lignite is good for gasification and process into diesel fuel.

Overburden to Sand

NLCIL currently operates three opencast lignite mines of total capacity of 28.1 MTPA at Neyveli, Tamil Nadu and keen on converting the OB waste to valuable products. In view of this, NLCIL is in the process of issuing notice inviting EOI from the eligible participants for setting up three pilot plants one each at Mine-I, Mine I-A, and Mine-II with a capacity of processing 100 tonnes per hour OB material for extraction of sand and clay in Neyveli township in an environment friendly manner.

Business Plan and Strategic Direction

NLCIL is amongst few large firms which are both vertically integrated as well as successfully diversified into an optimal mix of thermal and renewable energy generation. To be able to retain this competitive advantage together with maintaining profitability at controlled risks, the following are imperatives that NLCIL should prioritise:

Timely completion of planned projects: For NLCIL to maintain its competitive advantage of being an integrated player, it is important that the company focusses on prioritising timely completion of its proposed projects. Timely completion of mining projects will not only keep the inputs costs under control, but also decrease fuel supply uncertainties and risks for its power generation projects. Similarly, timely completion of generation projects will ensure that revenues are realised as planned.

Lignite blending and increasing capacity utilisation of mines: Together with new projects, it is also important for NLCIL to market lignite to coal based thermal power plants which are in the vicinity of 500 km of its mines and are currently using imported coal. It is suggested that up to 10% of lignite blending is feasible and such an option can be exploited by NLCIL. Doing so will also enable NLCIL to operate its mines at higher capacity utilisation. However, caution will need to be observed to ensure that NLCIL retains sufficient fuel for its own use and the balance be utilised for sale to third parties for lignite blending.

Commercial coal mining and MDO: NLCIL needs to structure the operations in its proposed entry into commercial coal sector to enhance its ownership traits by increasing its in-house contribution in the value chain. With the entry of new players in mining who have no experience in coal mining, outsourcing of the mining operations to Mine Developer and Operator (MDO) has become a popular business model. NLCIL should bid for coal blocks in India reserved for PSUs as it has relevant mining expertise and local experience. NLCIL is also familiar with the regulatory environment. NLCIL should carefully construct its MDO contracts such that they exclude activities where the company has in-house strengths. NLCIL should gradually increase the in-house offering till it becomes qualified as an MDO by itself and is able to offer such services to other mine- owners. Apart from this, on the international front NLCIL may explore acquiring minority stake of other coal mines with the objective of upgrading technology and controlling cost. NLCIL is planning a capacity addition of 15 MT of Commercial Coal Block during FY 2026.

Growth of conventional portfolio: Given that development of greenfield projects in the thermal power generation sector is marred with several issues including lack of new PPA opportunities, increasing land acquisition issues as well as availability of brownfield projects at attractive valuation, it is recommended that NLCIL continues to lookout for opportunities for acquiring power projects, especially those that are stranded near NLCIL's mines due to lack of fuel availability. Acquiring such projects will naturally benefit NLCIL since it will be able to utilise its fuel for generating power from such projects at affordable rates. Given that the timelines available for evaluating such opportunities is short, NLCIL may undertake a further study to create a database of projects that are likely to be available for acquisition in the future. It is also suggested that NLCIL can become a nodal agency for undertaking development and operations of stranded projects.

It has been learned that India's power demand is likely to grow substantially on the back of strong industrial growth, urbanisation, and Government's push for 'Power for All'. NLCIL being one of the key players in the power generation space would certainly get benefitted from this. Gauging the expected power demand, NLCIL has already built up a healthy pipeline of power projects which will take its generation capacity to 15,851 MW by 2030.

Development of renewable projects: It is important for NLCIL to continue its foray into setting up of large-scale renewable energy projects. This will ensure risk diversification from thermal sector. Ultra-Mega solar projects as well as setting up of solar projects on de-coaledmines are the areas that need to be prioritised. For ultra-mega solar projects, NLCIL may explore the option of scheduling of renewable power with thermal power to take care of intermittency issues and realise consistent tariffs. Total renewable capacity of NLCIL would reach 6,031 MW by 2030 with the implementation of proposed projects. NLCIL would also reap geographical benefit since most of the projects are planned in Tamil Nadu only, which is now witnessing strong industrial growth.

Green Hydrogen: Hydrogen is emerging as one of the leading options for storing energy from renewables with hydrogen-based fuels potentially transporting energy from renewables over long distances – from regions with abundant energy resources, to energy-hungry areas thousands of kilometers away.

To utilise the power generated from RE projects and considering the demand & growth of H2 requirement in future, NLCIL planned to produce Green Hydrogen by using the RE power generated.

Battery Energy storage system: Energy storage provides the power system with flexibility and is very useful in increasing the volume of renewable power that can be safely and securely connected to the grid. Designed to stabilize the electrical grid frequency, the BESS, will contribute to increasing the use of green energy in line with the Government's RE policy, it will also help to reduce the share of fossil fuels on the national energy grid, and to curb greenhouse gas emissions. Batteries are technically better suited to frequency regulation than the traditional spinning reserve from power plants, provide a cost effective alternative to network expansion for reducing curtailment of wind and solar power generation, and enable consumer peak charge avoidance by supplying off-grid energy during on-grid peak consumption hours. Surplus power can be stored in batteries for consumption later when renewable power generation is low and electricity demand increases. The financial viability of a BESS project for renewable integration will depend on the cost–benefit analysis of the intended application.

Power export to Sri Lanka and Bangladesh: NLCIL has good opportunity to trade power with Sri Lanka, if the transmission link /sub-marine cable with Sri Lanka is established. NLCIL should initiate dialogue for sale of power with Sri Lanka for 500-1000 MW electricity on long term basis. Similarly, NLCIL should review the interconnection link between Bangladesh and India and apply for initiating trading process once additional capacity is made available between the two countries.

Artificial Intelligence: There are several opportunities that revolve around data generation, analytics and machine learning and these together form part of Artificial Intelligence. However, given the expanse of opportunities, it is important for NLCIL to focus on low hanging fruits in the short term. For support business functions, NLCIL should evaluate data analytics in finance, accounts and procurement to improve productivity and enable heuristics. For power generation, asset performance management and digital field workers are some use cases which should be explored, whereas for mining, automation of data collection and usage of drones can be enabled in the short term. To help senior management and operations executive understand full potential of Artificial Intelligence, NLCIL can conduct capacity building workshops as well.

Electric Vehicle fleet: Usage of electric vehicles is increasing at a rapid pace and central government along with several other PSUs are leading the initiatives for deployment of such vehicles for their daily uses. NLCIL should also exploit this opportunity and initiate a dialog with EESL for procurement of electric vehicles. Doing so will not only reduce its dependence on fossil fuels and increase its sustainability quotient, but also help NLCIL save on fuel costs currently being incurred for diesel taxis. NLCIL, with its established market presence in power sector, has an opportunity to leverage on its experience in the sector and foray into Electric Vehicle space. As development of adequate charging infrastructure is a major pre-requirement for mass rollout of Electric Vehicles in India, NLCIL can plan to venture into this space as a developer of charging infrastructure.

Capital Expenditure

The total capital expenditure over the period from FY 2021-22 to FY 2029-30 has been projected to be Rs. 70,985 Crore and the same is proposed to be funded by debt of Rs. 51,974 Crore, internal accruals of Rs. 17,902 Crore, and equity of Rs. 1,109 Crore from new JV partners. The capex from FY 2022 to FY 2030 and means of finance are as shown in the table below.

Particulars (Rs. Crore)	**2022**	**2023E**	**2024E**	**2025E**	**2026E**	**2027E**	**2028E**	**2029E**	**2030E**	**Total**
Borrowings	1,554	2,345	7,394	12,508	11,659	6,730	5,317	2,818	1,649	**51,974**
Internal Accruals	385	672	2,391	4,168	4,209	2,527	1,921	995	634	**17,902**
Equity from JV Partners	281	238	345	209	36	0	0	0	0	**1,109**
Total Capex	**2,220**	**3,255**	**10,130**	**16,885**	**15,904**	**9,257**	**7,238**	**3,813**	**2,283**	**70,985**

The fresh infusion of equity by JV partners has been arrived at by considering the internal accruals that the company is able to generate from its proposed capacity additions and its existing operations. The same is subject to the actual implementation of the proposed plans of NLCIL and the cash generation from the existing and additional projects. Any deviation from the above may necessitate NLCIL to have a relook at the funding mix.

Apart from this, NLCIL has also issued unsecured, redeemable, non-cumulative, non-convertible & taxable Bonds in FY 2020-21 for an amount of Rs.500 Crore for a tenure of around 4 years at a coupon rate of 5.34% p.a.

Business Plan Projections

The business plan projections for the years from FY 2022 till FY 2030 are as below:

Profit & LossStatement (Rs. Crore)	**2022**	**2023E**	**2024E**	**2025E**	**2026E**	**2027E**	**2028E**	**2029E**	**2030E**
Total Income	10662	16992	21264	22333	23822	26898	31526	34472	36043
Total Expenditure	8719	13389	16936	17809	18773	22300	25779	27761	29386
EBITDA	4508	6645	9023	9780	10316	11158	13792	14954	15093
PBT	2606	3603	4328	4524	5049	4599	5748	6711	6656
PAT	1236	2314	2780	2898	3231	2932	3679	4300	4258
Dividend	208	812	885	961	1049	1118	1220	1346	1464

Balance Sheet (Rs. Crore)	**2022**	**2023E**	**2024E**	**2025E**	**2026E**	**2027E**	**2028E**	**2029E**	**2030E**
Liabilities									
Net Worth	17233	18973	21372	23371	25554	27368	29827	32781	35575
Non-Current Liabilities	24446	27950	36395	43274	50005	52637	51430	47670	43355
Current Liabilities	8265	8799	8991	9136	9533	10074	12246	10601	10271
Regulatory Deferral Account Credit Balances	1612	1525	1446	1370	1300	1236	1176	1121	1068
Total Liabilities	**51556**	**57247**	**68204**	**77151**	**86392**	**91315**	**94679**	**92173**	**90269**
Assets									
Net Fixed Assets	25934	42890	54304	61168	62160	79136	81698	78156	72772
Other Non-CurrentAssets	13794	1180	1165	5214	14186	1979	1106	1091	1076
Current Assets	10591	12027	11665	9774	9121	9339	11075	12181	15729
Regulatory Deferral Account Debit Balances	1237	1150	1070	995	925	861	800	745	692
Total Assets	**51556**	**57247**	**68204**	**77151**	**86392**	**91315**	**94679**	**92173**	**90269**

Cash Flow Statement (Rs. Crore)	**2022**	**2023E**	**2024E**	**2025E**	**2026E**	**2027E**	**2028E**	**2029E**	**2030E**
A. Cash Flowfrom Operations	8,536	4,939	8,752	10,108	8,859	9,670	11,647	13,239	13,324
B. Cash Flowfrom Investments	(2,321)	(6,719)	(14,740)	(14,554)	(13,834)	(9,235)	(6,874)	(2,088)	(500)
C. Cash Flow from Financing	(4,206)	2,093	6,250	4,051	4,138	(750)	(3,971)	(10,554)	(9,679)
Net increase/decrease	2,009	314	262	(395)	(837)	(316)	801	597	3,145
Cash at beginning of the year	157	2,166	2,480	2,741	2,347	1,509	1,193	1,995	2,592
Cash at the end of the year	2,166	2,480	2,741	2,347	1,509	1,193	1,995	2,592	5,737

Financial Ratios	**2022**	**2023E**	**2024E**	**2025E**	**2026E**	**2027E**	**2028E**	**2029E**	**2030E**
Net Profit Margin (NPM)	12.5%	13.60%	13.10%	13.00%	13.60%	10.90%	11.70%	12.50%	11.80%
EBITDA Margin	35.0%	39.10%	42.40%	43.80%	43.30%	41.50%	43.70%	43.40%	41.90%
Return on Net Worth (RONW)	7.93%	12.80%	13.80%	13.00%	13.20%	11.10%	12.90%	13.70%	12.50%
Debt Equity Ratio (x)	1.57	1.32	1.61	1.83	1.92	1.92	1.79	1.49	1.23
Current Ratio (x)	1.28	1.37	1.30	1.07	0.96	0.93	0.90	1.15	1.53
Quick Ratio (x)	1.17	1.27	1.22	1.01	0.91	0.88	0.86	1.08	1.45
Interest Coverage ratio (x)	2.46	2.98	2.41	2.63	2.98	2.25	2.23	2.37	2.51

SWOT Analysis of NLCIL

The four dimensions of SWOT, viz. Strengths, Weaknesses, Opportunities and Threats of NLCIL have been discussed as follows:

Strengths

- A Navratna Government of India Enterprise with a successful track record of over 60 years of operations in lignite mining and power generation
- Long standing commissioning and operating experience in thermal, mining and now large- scale solar power plants
- Nodal agency for lignite mining in India supported by its sizeable reserves
- Integrated power and mining company with low fuel supply risks – NLCIL's thermal stations are pithead power plants and hence the fuel supply risks are very low considering the captive nature of the mines and large reserves
- Mining and thermal power generation follow cost-plus structure which ensure sustained profitability for these business verticals
- Specialized research and development for lignite mining sector
- Smooth IR relations
- Diversified risk – by already venturing into coal mining, coal power projects and renewable power projects
- Healthy financial profile characterized by healthy profitability over the years driven by operational efficiency and highest credit rating of AAA[3] with stable outlook.

Weaknesses

- Risk of time and cost overrun due to delay in execution of the new projects
- Technical issues with regards to implementation of CFBC technology in TPS-II expansion and Barsingsar are yielding low PLFs
- Aging of power plants of TPS-II
- Risks specific to lignite mining such as
    - Limited portion and area of the available lignite reserves being mineable in an economically viable manner
    - Increased cost of mining as mines moves towards higher stripping ratio
    - Limited use of lignite beyond lignite-based power projects

Opportunities

- **Coal mining:** Coal mining opportunity as GoI has started the process of auctioning coal mines. Large reserves followed by opening-up of the sector in the recent past offers better prospects
- **RE opportunity**
    - Vast untapped renewable energy potential backed by government thrust and favorable policy measures offer good opportunities
    - Floating solar, conceptualized to overcome land acquisition issue, is an exciting application of solar PV technology which is gaining traction globally
    - Rooftop solar is another area where NLCIL can focus on as it is less penetrated currently
    - Proximity to offshore wind sites around coast of India that have a high potential for development
    - Opportunity for setting up ultra-mega solar power projects
    - Solar-natural gas hybrid power
    - Solar wafer manufacturing

- **Contemporary areas related to lignite:**
  - Lignite to Diesel / Methanol
  - Briquetting of Lignite
  - Overburden removal to Sand sales
- **Power value chain:** Besides augmenting power generation capacities, NLCIL can evaluate opportunities in power distribution and transmission segments given the rise in industrial activities in the state of Tamil Nadu
- **Power trading:** NLCIL has already ventured into power trading business and procured Category I licence. A more penetrated approach can be pursued by NLCIL to gain market share and fully exploit the license.
- **Power export:** NLCIL should explore market opportunities for exporting power to neighbouring countries. Proximity to Sri Lanka for exporting power via underground power cables is an important opportunity along with power export to Bangladesh, which has power deficit.
- **EV Charging Infrastructure:** As the nation is gearing up for electric vehicles, NLCIL can focus on EV charging infrastructure space to tap this opportunity, taking onboard the relevant and experienced players. Tamil Nadu, having several large and growing cities and being a hub for manufacturing of automobiles, will be apt territory for putting up EV charging infrastructure
- **Inorganic growth path:** The Country is facing rising cases of stressed power assets. NLCIL can evaluate these stressed assets as these would be cheaper to buy. However, proper due diligence must be undertaken to understand the risk profile and the strategic fit.
- **Digital opportunities:** NLCIL should pursue digital initiatives in order to achieve cost savings and increased efficiency, besides augmenting the capacity and revenue stream. NLCIL should evaluate and implement appropriate AI based solutions in this regard in the respective fields to achieve the same.

Threats

- NLCIL may expect delayed commissioning and cost overrun of its projects due to land acquisition issues, higher cost for rehabilitation and resettlement measures for land evictees etc.
- NLCIL may face highly competitive tariffs as a result of increased competition from renewables
- Delay in realisation of dues from Discoms may dent cash accruals, increase receivables and working capital loan for NLCIL
- Sluggish growth expected in thermal power generation
- Stringent environmental norms
- Stringent regulations in power scheduling
- Power surrender in thermal sector due to low power demand and increased RE penetration
- Obtaining various clearances for speedy execution of project viz. both statutory and non-statutory

Risk Analysis and Mitigation Measures for NLCIL

The mitigation plans proposed by the Company for High Impact and High Frequency risks are as follows.

Risk	Risk Grade	Remarks/Mitigation
Land availability risk	High	The proposed expansion plan of NLCIL involves implementing large scalesolar projects, thermal power plants and mines, which involve considerable land acquisition requirement and the associated R&R activities. NLCIL could consider the following mitigation plan. • Constant follow-up actions are taken up with the District Administration for the Projects concerned. • Persuading and convincing the landowners to hand over lands voluntarily in strategic locations. The "Right to Fair Compensation and Transparency in Land Acquisition Rehabilitation and Resettlement Act – 2013" (RFCTLARR) is applicable since 01.01.2014. However, the Govt. of Tamil Nadu had passed an amendment act – "Right to Fair Compensation and Transparency in Land Acquisition Rehabilitation and Resettlement (Tamil Nadu Amendment)Act – 2014, to exclude the Tamil Nadu Acquisition of Land for Industrial purposes Act, 1997 (Tamil Nadu Act No.10/99)" from other provisions of the Central Act, except the provisions relating to the determination of the compensation and rehabilitation & resettlement and land acquisition for NLCIL is continued under "Tamil Nadu Acquisition of Land for Industrial purposes Act, 1997 (Tamil Nadu Act No.10/99)". In the case of solar projects, the Company proposed to bid for Projects in states wherein land has been identified by the Government at the time of bidding. In 2018, Government of Odisha introduced Land Acquisition, Rehabilitation and Resettlement Authority Rules, 2018. As per the new rules, the Government will establish, by notification in the Odisha Gazette, at least one Authority to be known as "The Land Acquisition, Rehabilitation and Resettlement Authority for each revenue division for speedy disposal of disputes relating to land acquisition, compensation, rehabilitation and resettlement. This is a welcome move by the State Government to mitigate the land acquisition issues in the State. Further, NLCIL is planning for the following mitigation measures for the affected families ▪ Providing skill development facilities ▪ MDO to recruit people from the affected families based on the requirement and fitment

Risk	Risk Grade	Remarks/Mitigation
Equity funding risk	Medium	The updated corporate plan 2030 envisages a considerable capital expenditure outlay within a shorter time span of 4 to 5 years. NLCIL despite consistently generating surplus cash accruals in the past and having projected to do the same in the future may face a shortfall when it comes to funding these Projects from its internal accruals. The Company proposes to implement the projects outside Neyveli and Rajasthan. The company proposes to develop the large-scale solar projects across India and the thermal power Project in Odisha. To meet the funding requirement, NLCIL may plan to assess efficient means of financing including raising funds from the equity markets to meet the proposed growth plans in the future. However, raising funds from equity market has its own challenges such as: • Adhering to DIPAM guidelines • EPS Dilution
Debt funding risk	Medium	The implementation of the projects as proposed under the Corporate Plan shall involve raising debt in a short span of time which will considerably impact the leverage levels of the company and will consequently impact the external credit rating and the pricing at which the debt will be raised. NLCIL currently has an external credit rating of AAA and can raise the funds at the lowest possible rates allowed for the banks to fund the corporates. The leverage levels such as D: E ratio is around 1.3x in FY 2021 and historically it had been below 1 which is relatively low for a company in infrastructure sector. With increased borrowing the D:E ratio is also slated to increase, putting additional interest burden on NLCIL. Hence, as a mitigation measure, NLCIL should ensure that the projects generate enough cash flows to repay the debt obligations, which require the following action points: • Projects are commissioned in time • Projects have proper PPAs so that revenue stream is unaffected
Time Overrun and Cost Overrun Risk	Medium	NLCIL in some of the past cases with regards to implementation of Projects such as TPS-II Expansion and the coal based thermal power project of NTPL has been impacted by the delay in commissioning leading to time overrun and cost overrun. The same in the case of proposed new projects could considerably impact the projected revenues over the years.

Risk	Risk Grade	Remarks/Mitigation
		NLCIL has taken considerable effort to reduce the delays and has attributed the delays in previous projects on account of the EPC contractors and equipment suppliers and on account of new technology. NLCIL also in the past has entered such contracts with strict Liquidated Damages clauses which has reduced the quantum of cost overrun in such projects. NLCIL shall utilise the experience gained in the past with regards to implementation of these projects and shall efficiently allocate resources to ensure that the projects are implemented within the time frame and within the costs budgeted.
Safety risks - Mines	Medium	The safety considerations of the operational mines and power plants are of utmost importance for the efficient operations of these units. NLCIL as a company has been following the below mentioned concepts towards ensuring the safe operations of the units. • Self-regulation. • Regular inspection & corrective action. • Following safe code of practices • Effective supervision. • Structured training of personnel. ▪ Safety propaganda through handouts, posters, banners, boards and displays. NLCIL has adopted operating procedures for safety, which have been formulated to improve safety in mines and putting in place risk assessment and safety management plans.
Generation Risk	Low	The proposed thermal power plants under the Corporate Plan have been assumed to operate at 85% PLF (80% in some). Similarly, PLF of Solar and Wind are estimated as 19% (>27% in a few projects) and 30%, respectively. In the event, the same is not achieved; the revenue potential of the company shall be impacted. The company has indicated that new thermal power plants shall be set up only after proper due diligence and taking into consideration all necessary external factors including industry risk before starting works on implementation of thermal power projects.
Fuel Supply Risk	Medium	The existing lignite-based power plants of NLCIL are pit head-based stations and have lignite mines with enough production capacity to meet the requirements of these power plants. The coal based thermal power plant in NTPL has entered long term supply arrangement towards meeting 70% of the coal requirement. The company has been importing coal on ashort-term basis which meets the balance requirement. The proposed lignite-based power plants in Neyveli and Barsingsar are also proposed to be developed as pithead-based power plants and the development of mines shall be synchronised with the COD of these

		Lignite-based power plants. The company has been allotted the Pachwara South coal block and the Talabira coal blocks for the development of thermal power plants in UP and Odisha respectively. The company proposes to develop and operate the same through a Mine Developer and Operator (MDO). NLCIL should ensure that the power projects acquired and proposed to be acquired through a JV route shall have a pre-existing fuel supply arrangement and in cases of shortage in the same shall utilise the surplus coal from these allocated coal blocks.
Power Off-take Risk	Medium	NLCIL sells the power generated from its existing power plants to the state utilities in southern region of the country and Rajasthan. The proposed 1980 MW thermal power project in Ghatampur, Uttar Pradesh has also entered fixed off-take with state utilities for purchase of 75% of the power generated from this unit. The tariffs in these cases as agreed to in the PPA are based on CERC principles of tariff determination and shall hence ensure recovery of costs plus an assured RoE for the equity invested. Being a part of the power sector, NLCIL also faces power surrender risk due to merit order, increased penetration of renewables and low power demand. The remaining proposed thermal power projects which are still in planning stage and have not entered a fixed offtake arrangement so far and have to enter into competitive bidding to sell the power generated from these units. The power industry is getting more competitive on account of competitive tariff being offered in case of renewable energy. The company has indicated that they have sought an exemption from the competitive bidding procedure from the Government. NLCIL has been pursuing strongly to enhance its renewable energy portfolio. However, in India, renewable sector is exposed to offtake risk. The company shall ensure that the new power projects proposed to be commissioned have an already existing long-term power offtake arrangement.
Payment Risk	Medium to High	NLCIL has successfully in the past realized revenues from the state utilities Including TANGEDCO. NLCIL shall be able to leverage their existing relationships with these utilities to efficiently realize these revenues. The new power projects being set up outside Tamil Nadu, NLCIL should ensure that the offtake agreements shall have considerable payment security mechanisms such as revolving LC towards three months payments and other payment guarantees which shall mitigate the risk of delayed payment considerably. Ministry of Power has assured that a mechanism will be put in place to clear the outstanding dues of generators within 12 months. NLCIL may also plan to offer bill discounting to the off takers as an incentive for their prompt payment.

Regulatory Risk	Medium	The tariff for the power supplied from Central Generating Stations (CGS) is determined in accordance with the Tariff Regulations notified by Central Electricity Regulatory Commission (CERC), generally once in 5 years specifying the Terms and Conditions and norms of operation for tariff determination. CERC has notified the Tariff Regulations in 2019, for determining tariff for the period from 01.04.2019 to 31.03.2024. This requires NLCIL to become compliant to emerging norms for all of its power plants. Mining in India is subjected multiple regulations and laws such as The Mines Act (1952) (amended in 1983, and further through The Mining bill 2011), The Mines and Minerals (Development & Regulation) Act (MMDR) 1957 (amended in 2016), National Mineral Exploration Trust Rules 2015, Mines & Minerals (Contribution to District Mineral Foundation) Rules 2015, Minerals Rules 2015, National Mineral Policy 2015, Mineral conservation & Development Rules 1988 (As amended up to 2nd August 2011), Approval Policy 2015 (Second Revision 5th May 2016), Forest (Conservation) Act 1980, etc. These regulations lay down specific guidelines, rules, and processes to be handled during mining operations and these are amended from time to time, NLCIL has to comply with all these regulations to sustain operations. PAT norms are set by Bureau of Energy Efficiency under the National Mission for Enhanced Energy Efficiency (NMEEE), as a response to comply with climate change norms. PAT norms set specific energy consumption levels for energy in intensive industries, this requires organization's like NLCIL to optimize its operations through process improvements and capital investments. Solar parks being developed under PTS scheme are to be commissioned to operation within one year of issue of LoA, else they will have to forfeit the agreed tariff and are subjected to revised tariff. The Companies Act 2013, has been amended twice (through the Companies (Amendment) Act 2017, and the ordnance promulgated in November 2018) since it came into force. Compliance to all rules and regulations of the act is essential to ensure seamless conduct of business. Mining and Thermal power generation are subjected to multiple environmental norms. Mines are regulated to control the Suspended Particulate Matter (SPM), Respirable Particulate Matter (RPM), SO2, Oxide of Nitrogen, effluent standards in terms of pH levels, Chemical Oxygen Demand (COD), Oil & Grease (O&G), noise levels etc. Thermal power plants are required to control the water consumption, SO2, NOx, Mercury Emission, PM10, PM2.5, condenser cooling water parameters, boiler blowdown parameters, ash pond effluent parameters, ash usage, cooling tower blow down parameters etc. These regulations require periodic upgradation of power assets, such as installation of Flue Gas Desulphurization (FGD), Selective Catalytic Reducer (SCR) etc. This apart, norms related to green cover management, mines closure, ground water conservation and management etc. need to be

		undertaken. boiler blowdown parameters, ash pond effluent parameters, ash usage, Cooling tower blow down parameters etc. These regulations require periodic upgradation of power assets, such as installation of Flue Gas Desulphurization (FGD), Selective Catalytic Reducer (SCR) etc. This apart, norms related to green cover management, mines closure, ground water conservation and management etc. need to be undertaken.

Conclusion:

ICRA Analytics on studying the existing corporate plan and the information available from NLCIL and various reliable sources, analysed the business environment and suggested the areas NLCIL needs to focus till 2030.

Based on this business plan, ICRA Analytics has prepared the financial projections for the Company on consolidated basis till FY 2030. From the above analysis, it can be assessed that the portfolio of power generation would undergo a shift from majorly lignite based to a mix of lignite, coal, and renewable power by FY 2030. This change has brought in a fresh set of requirements as already mentioned in the subsequent sections with regards to development of coal-based assets to cater to the new thermal coal- based projects.

The production capacity of mines owned by NLCIL is projected to increase from 48.10 MTPA as on 30th November 2021 to 84.10 MTPA by FY 2030 and the power generation capacity is projected to increase from 6,061 MW to 15,851 MW during the same period on account of the proposed addition of projects till FY 2030. The company is expected to diversify its portfolio geographically from lignite- based plants in Tamil Nadu to multi-state based and multi fuel based. NLCIL is also projected to add renewable capacities in the form of new projects in wind (100 MW) and solar (4,510 MW) sector as a part of the capacity addition exercise. As part of Diversification NLCIL has proposed to establish a lignite-based Surface Gasification and Methanol plant of 0.4 MTPA capacity at Neyveli, OB to sand, and Lignite to diesel, Green hydrogen, and energy storage system projects.

The above expansion plans need careful planning in terms of arranging the financial resources to successfully and timely implementation of projects as envisaged. Considering the business plan projection of the Company under the assumptions explained and subject to the weaknesses and threats discussed in the report, NLCIL is expected to exhibit considerable revenue growth from its existing level. NLCIL can establish itself as one of the premier integrated power generating companies in the country with its improved mining and project execution capabilities. However, in order to achieve the above, NLCIL must plan its financial resources and fund the envisaged projects with optimum leverage.