Diversification Agenda of CPSUs

DIVERSIFICATION AGENDA OF CPSUs

Diversification was felt a necessity, especially in the light of climate change narrative, diversifying into non-coal, secure new businesses, productively utilize sizeable reserves/funds in their Balance Sheet, fiduciary responsibility towards long-term future of coal-mine workers, leveraging economic growth, particularly in eastern region, need to invest in coal mines and related infrastructure to eliminate substitutable coal imports and support coal gasification and likely coal exports.

Two broad baskets of diversification have been envisaged as below:

I. New Business Areas (Diversification) to transform CIL/NLCIL/SCCL from coal companies to energy companies;

II. Clean Coal Technologies (Technology-related) to provide sustainability to coal business

Overview of Diversification Plan:

Nature of projects	Details of Projects
New Business Area	Solar Power Projects by CIL/SCCL/NLCIL Three On-going Thermal Power Projects of NLCIL Two Thermal Power Projects by CIL HURL - CIL TFL - CIL
Clean Coal Technology	Four Surface Coal Gasification Projects by CIL One Lignite to Methanol Project by CIL CBM by CIL

Solar Power Projects:

A. Coal India Limited -

The annual average electrical energy consumption of CIL and it's subsidiaries is approximately 4.6 Billion units. To become a Net Zero Company, CIL needs to install total 2947 MW (approximately 3000 MW) of Solar Power Plants. As on 31.03.2024 the installed capacity of Solar Projects in CIL/ Subsidiaries is 82.6 MW The year-wise target, achievement is as follows:

Sl. No.	Com-pany	Commis-sioned Till FY 2023-24	2024-25	2025-26	Total	2026-27	2027-28	2028-29
1	BCCL	1.31	47.43	45	**93.74**	**600 MW**	**500 MW**	**300 MW**
2	CCL	1.25	68.54	53	122.79	(In JV Mode with RRVUNL)	at Bun-delkhand, UP	(Through Participation in PAN-India tenders)

Sl. No.	Com-pany	Commis-sioned Till FY 2023-24	2024-25	2025-26	Total	2026-27	2027-28	2028-29
3	MCL	3.7	72	0	**75.7**			
4	ECL	1.86	48.73	74	**124.59**			
5	WCL	2	50.5	269.5	**322**			
6	SECL	20.58	65.5	404.5	**490.58**		1000 MW (In JV Mode with RRVUNL)	650 MW (In JV Mode with RRVUNL)
7	NCL	50.47	2.5	250	**302.97**			
Sub-Total		81.17	355.2	1096	**1532.37**			
8	CIL + CMPDIL	1.43	100	320	**421.43**			
TOTAL (5003.8 MW)		82.6	455.2	1416	**1953.8**	**600**	**1500**	**950**

(B) NLC India Limited

In line with the Government of India's initiative towards Renewable Energy, NLC India Limited has diversified its Generation portfolio from the basic conventional power generation to Renewable Energy Generation sources. NLCIL was the first Central Public Sector Undertaking to achieve 1000 MW Renewable Energy capacity. The total Renewable Energy installed capacity of NLCIL was 1431.06 MW as on 31.03.2024.

NLCIL has won 150 MW Hybrid Renewable Energy projects from Solar Energy Corporation of India Limited (SECI) tender, for which EPC tender is floated and evaluation is under process. NLC also has won 510 MW Solar PV Power Project from Indian Renewable Energy Development Agency (IREDA) tender against which 10 MW Solar project under Smart City Conversion at Neyveli is under development stage and for balance capacity, two separate EPC tenders are floated for a capacity of 200 MW & 300 MW for which tendering is in process. As per the approved Corporate Plan 2030 of the company, these projects are expected to be commissioned by 2023 and 2024 respectively.

It is proposed to have 4610 MW capacity addition from Renewables by 2030, there by cumulative RE capacity is approximately 35.12 % (6031 MW) of the total installed capacity (17171 MW) by 2030. This shows the directional migration of NLCIL towards green energy. Presently on an average 2000 MUs are being generated from the Renewable projects of NLCIL and thus contributing significantly to the environment through green energy.

To synergize the peer CPSUs, NLCIL has formed a Joint Venture Company with Coal India Limited, the Coal Lignite UrjaVikas Private Limited (CLUVPL) to offer technical & project consultancy services for the mining CPSUs.

NLCIL signed MoU with Assam Power Distribution Corporation ltd., (APDCL) on 09.08.2022 for the development of 1000 MW renewable Projects in Assam State.

MoU has been signed between NLCIL & Grid Corporation of Odisha (GRIDCO) on 01.12.2022 for setting up of Ground mounted / Floating Solar Power projects, Pumped Hydro Projects, green Hydrogen Projects and other renewable projects.

Year	Type	Capacity (MW)	Location
2024-25	Solar	300	Rajasthan
2025-26	Solar	900 51	Gujarat, Tamil Nadu,
	Wind	50	Gujarat
2026-27	Solar	810 100 101	Rajasthan Assam Tamil Nadu
2027-28	Solar	792 623 200 101.4	Uttar Pradesh Pan-India Assam JV Tamil Nadu
2028-29	Solar	500 200 500	Rajasthan Assam JV Pan-India
2029-30	Solar	500 500 300	Assam JV Rajasthan JV Pan-India
	Wind	100	Pan-India
TOTAL Capacity yet to be Installed		**6628.4**	

SCCL

SCCL proposed to set up 300 MW capacity solar plants. **So far 219 MW** capacity plants commissioned at various locations in SCCL. Balance capacity is under progress including 15 MW Floating solar Power Plant. Further, SCCL is exploring the possibility of setting up another 250 MW Floating Solar PV Projects on the water surface area of reservoirs of Telangana State.

II. Thermal Power Projects –

CIL - CIL is undertaking 02 TPPs – one in MP and one in Odisha

NLCIL – NLCIL has 6 working TPPs – TPS-1 Expansion, TPS-2, TPS-2 Expansion, NNTPP, NTPL & Birsingsar TPP. NUPPL is under construction. Talabira TPP is under process.

SCCL –One Thermal Power Plant at Telangana - 2x600 MW Power Plants. Dedicated to the Nation on 07.08.2016. Further, 800 MW Thermal Power Plant is planned at the same location.

III. Surface coal gasification:

Background:

- With reforms in the coal sector, private sector is now emerging as a major coal producing contributor. From a production of 63 million tonnes in FY 2021, the captive coal mines have produced 89 MT in 2022 and are likely to produce 130 MTs of coal in FY 2023.
- CIL coal production is poised to grow from 600 MTs in FY 2021 to 1 BT by FY 2025. This huge increase in coal production has opened up possibilities for supply of coal to other end uses after meeting the full requirement of power sector and thermal coal consumers.
- Thermal coal imports for power sector have come down by 50% over pre-Covid year (FY

2021) and may be eliminated in the next one year or so. Coking coal imports for steel sector and high GCV coal imports for specialised end use may continue.

- With comfortable coal availability, the Government has decided to promote gasification of coal in a big way. Coal gasification can yield multiple energy, chemical and petro-chemical products, most of which are presently being imported. For example, methanol can be used as a transport fuel, DME can be mixed with LPG for cooking, and ammonia has use in urea manufacture and ammonium nitrate as an explosive in the mining sector. India is import dependent for all the above products.

Strategy:

- As Indian coal has high ash content, the gasification yield from Indian coal is poor and is economical for these products only when the crude price is nearly at US $ 60 per barrel. There is hesitancy incorporates due to several reasons including issues of coal availability, lack of assured buy-back and no established gasification plant in India so far. Recent attempts have been made to manufacture urea on this technology by TFL and JSPL's DRI based steel plant in Odissa.
- A three-pronged strategy has been put in place. **Firstly,** CIL's four projects (own and through JVs) and NLC India Limited Lignite to Methanol project conceived to establish techno-economic viability, **secondly,** encouraging coal gasification by industry that may acquire coal mines and use their own coal, and **thirdly,** by making coal available to such units that may not want to get into coal mining but restrict themselves to gasification. A target of gasifying 100 MTs per year of coal has been fixed for 2030 which may envisage an investment of over 50-60 billion US $.

1st Phase Strategy:

- As per direction from Government, Coal India Limited and NLC India Limited have conceived 5 different gasification projects with investment of around total 26770 Cr along with 07 MMT Coal Input.
- In case of **2 projects**, tenders have been floated for engagement of Agencies for construction of coal gasification projects by WCL (Coal India) in Maharashtra to produce Ammonium Nitrate on 3.8.2022. The tender is expected to be opened on 1.12.2022. For Second project, tender has also been floated by NLC India Limited on 22.10.2022 to produce methanol from Lignite.
- To set up **three more Gasification projects** and to promote indigenous gasification technology, Coal India Limited has signed MOUs with BHEL, GAIL and IOCL on 12.10.2022 to set up coal gasification projects at MCL **Odisha** to produce ammonium nitrate using high ash coal, Synthetic Natural Gas at ECL **West Bengal** with low ash coal and SNG/ Methanol/ DME at **Jharkhand/Chhattisgarh** respectively.
- Government has launched a scheme with outlay of ₹ 8500 cr. to support Coal/Lignite gasification projects. RFPs have also been floated. Last date of receiving application is 11.11.2024.
- Details of the indigenous Coal Gasification Projects with MOUs among the CPSEs is tabulated below:

	CIL Subsidiary			NLCIL
	ECL	WCL	MCL	
Partnering with	GAIL	-	BHEL	BHEL
Product*	Synthetic Natural Gas	Ammonium Nitrate	Ammonium Nitrate	Methanol
Product Quantity	633.6 Mn Nm3	0.66 MMTPA	Subject to PFR	0.396 MT
Mines	Sonepur Bazari (G4-G5)	Niljai Mines (G9-G10)	Lakhanpur Mines (High ash)	Lignite
Coal (MT)	1.4 MMTPA	0.8 MMTPA	1.3 MMTA	2.26 MMTPA Lignite