



# Diversification Agenda of CPSUs



## DIVERSIFICATION AGENDA OF CPSUs

The Ministry of Coal has two large CPSUs - Coal India Ltd. (CIL) and NLC India Ltd. (NLCIL) under its administrative control. CIL operates in 7 states and NLCIL in 5 states. CIL is a hard-core coal company with 7 subsidiaries - while NLCIL ventures in lignite, power generation and new sectors renewable Energy and coal mining. CIL contributes about 80% of India's domestic coal production and accounts for 65% (approx.) of coal consumption in the country.

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.

Four broad baskets of diversification have been envisaged as below:

- I. New Business Areas (Diversification) to transform CIL/NLCIL from coal companies to energy companies
- II. Clean Coal Technologies (Technology-related) to provide sustainability to coal business
- III. Coal Mining Projects (Core business) to help achieve 1 Billion Tonne coal production by 2025 and create related infrastructure

### Overview of Diversification Plan involving 152 projects:

Nature of projects	Number of projects	Estimated Investment (₹In Crore)
New Business Area [Alumina Smelter and Power Plant -2 Solar PV manufacturing unit and power plant - 2 Greenfield Alumina and Power Plant - 2 Solar Power Projects - 15 On-going Thermal Power Projects- 3 HURL- 1 TFL - 1]	26	141931
Clean Coal Technology [washeries -10, SCG - 6 CBM - 3]	19	34650
FMC	35	10492
Coal Mining	72	73002
<b>Total</b>	<b>152</b>	<b>270075</b>

**Solar Power Projects:**

**A. Coal India Limited -**

**Installed Capacity and Project Pipeline**

Total Installed Solar Project Capacity (both rooftop and ground mounted) at CIL and its subsidiaries is 8.552 MW as on 30.11.21. By March another 5.562 MW of rooftop solar projects will be commissioned. So by March 2022, total capacity of solar projects will be 14.41 MW. Further, Ground Mounted Solar Projects of 455 MW capacity is under pipeline(SECL-140 MW, MCL- 50MW, NCL-50 MW, CIL-100 MW, BCCL-45 MW, CCL-20 MW, ECL-35 MW, WCL- 15 MW)

**Summary for the Solar Projects under pipeline:**

- Solar Projects: Balance capacity of Rooftop Projects of 5.562 MW capacity are scheduled to be completed within March' 22.
- Ground Mounted Projects(Both captive and non-captive projects):
  - a) DPR Prepared for -260 MW (06 Projects)
  - b) Tender Floated in 21-22-265 MW (05 Projects)
  - c) Work Order issued in 2021-22 -150 MW (02 Projects)
  - d) Work order to be issued- 90 MW(02 Projects)
  - e) Tender to be floated- 95 MW(within Jan 22)
- The roadmap to become Net Zero Energy Company for CIL and subsidiary is as under:

Financial Year	2021-2022	2022-2023	2023-2024	Total
Capacity in MWp	291	1500	1215	3005

**Joint Venture and Subsidiaries Companies for the Development of Solar Power Projects:**

- i. CNUPL (Coal India NTPC UrjaPvt. Limited) -A JV with NTPC to develop solar power projects Pan-India. MOU has been signed between NCL and CNLUPL where CNLUPL will work as a coordinator for implementing of 50 MW Solar Project on PMC route through NTPC Ltd. Price has been discovered against the tender floated by NTPC on 17.11.21. The final recommendation by NTPC is awaited.
- ii. CLUVPL (Coal India-Lignite UrjaVikasPvt. Limited) -CIL entered in a joint venture (CLUVPL) on 11.11.20 with NLCIL to develop Solar Power Projects Pan-India by participating in tenders and through PMC route. CLUPL is implementing 40 MW SPV Project at SECL through PMC route. Price bid(e- Reverse auction) has been completed on 3.12.21. LOI was issued by SECL on 11.1.2022 and formal agreement signed on 25.1.2022. Work started from 26.1.2022.
- iii. CIL Solar PV Limited: A subsidiary company namely CIL Solar PV Limited was incorporated on 16.04.2021to develop Solar Power Value Chain (Ingot-Wafer-Cell -Module).
- iv. CIL NavikarniyaUrja Limited: A subsidiary company namely CIL NavikarniyaUrja Limited was incorporated on 16.04.2021for New and Renewable Energy (Non-conventional) Business.
- v. CIL has also entered in MOUs with SECI and EESL separately to develop Solar Power and Energy Efficiency Projects respectively at CIL and subsidiaries.



Ground mounted Solar plant in MCL



Roof top Solar plant in CCL

**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 1421.06 MW as on 31.12.2021.

NLCIL has won 150 MW Hybrid Renewable Energy projects from Solar Energy Corporation of India Limited tender and 510 MW Solar PV Power Project from Indian Renewable Energy Development Agency tender. The projects are expected to be commissioned before 2023 - 24. As per the approved

Corporate Plan for the company, it is envisaged to establish 4251 MW Renewable Energy capacity by 2025. This RE capacity is approximately 23% of the total installed capacity of NLCIL and shows the directional migration of NLCIL towards green energy. On an average 2000 MU are generated from the Renewable projects of NLCIL and thus contributing significantly to the environment through green energy.

Further to augment development of Renewable Energy, NLCIL contemplates venturing into Electric Vehicle Charging Infrastructure and Deployment of Artificial Intelligence. 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.



**Fig. Solar Power Panel in Ramanathapuram District**

Summary for the Solar Projects under pipeline:

1. NLCIL proposed to install 1000 MW Solar Power Projects under infrastructure plan.
2. NLCIL has won a capacity of 510 MW under the CPSU Scheme tender floated by Indian Renewable Energy Development Agency (IREDA). Efforts are being undertaken for identifying the potential consumers and on tie-up with consumer; action will be taken for establishment of the project.
3. NLCIL has won a capacity of 150 MW Hybrid Project capacity from Solar Energy Corporation of India (SECI) tender. Activities for floating a tender for identifying the project developer are underway.
4. NLCIL has submitted a bid for establishing 250 MW Solar Power Project under the SECI's

1785 MW Grid connected Solar PV Power project in Rajasthan (Tranche IV). Bids are under evaluation by SECI.

5. NLCIL has submitted a bid for establishing 300 MW Solar Power Project under the SECI's 1200 MW ISTS connected Solar PV Projects in Karnataka (ISTS X) tender. Bids are under processing by SECI.

In addition to the above, in line with directions from MNRE, NLCIL has proposed to set up 2000 MW Ultra Mega Renewable Power Park (UMREPP) by forming a Joint Venture Company (JVC) with TANGEDCO and PFCCL. MoU was signed on November 2019 for formation of a JVC. Draft JVA approved by NLCIL & PFCCL Board and under consideration by TANGEDCO. As an advance action, TANGEDCO has floated a tender for purchase of land for development of UMREPP.



**Fig. Roof Top Solar Power Panels on Residential Building at Neyveli, NLCIL**



**Fig. The flat panel Multi / Poly crystalline silicon PV cell technology in Neyveli Township Block-4**

### Setting up of Coking Coal Washeries:

The Government plans to increase the supply of washed coking coal to the Steel sector from 4.42 MT in 2020-21 to 25.33 MT by 2029-30. This includes proposed 8.00 MT washed coal production from SAIL and TATA STEEL. For achieving the above new coking coal washeries have been envisaged. Details are as under:

Out of a total of 8 coking coal washeries in 1<sup>st</sup> phase:

- I. 2 Coking Coal washeries constructed and operational
- II. 3 under construction
- III. Lol / WO issued for 2 washeries
- IV. 1 tendered and to be opened

4 more coking coal washeries in the 2<sup>nd</sup> Phase

- I. 01 coking coal washery is to be tendered shortly
- II. 03 Coking coal washeries conceptualised, sites being firmed up

### Surface coal gasification:

India has a reserve of 289 Billion tonnes of non-coking coal and about 80% of coal produced is used in thermal power plants. With environment concerns and development of renewable energy, diversification of coal for its sustainable use is inevitable. Coal gasification is considered as cleaner option as compared to burning of coal and utilises the chemical properties of coal. Syn Gas produced from Coal gasification can be utilised in producing Synthetic Natural Gas (SNG), energy fuel (methanol & ethanol), production of urea for fertilisers and production of Chemicals such as Acetic Acid, Methyl Acetate, Acetic Anhydride, DME, Ethylene and

Propylene, Oxo chemicals and Poly Olefins. These products will help in import substitution and help the mission of Government of *Atmanirbhar* Bharat.

In line with the above objective, Ministry of Coal has taken initiatives of utilising coal through coal gasification and as such an action plan has been prepared to achieve 100 MT coal gasification projects by 2030. Three phase strategy has been chalked out to set up coal gasification projects -

### Phase I: Setting up projects on pilot basis

It has been planned to set up two gasification projects on pilot basis one on high ash coal blended with pet coke and the other from low ash coal for the purpose of establishing technology. Details of these 2 projects are as mentioned below:

- **Talcher Fertiliser plant:** Coal Gasification based on high ash coal mixed with pet coke. Investment: ₹13277 cr. CIL, RCF and GAIL are equity partners (28%) and project will be financed through loan (72%) from banks. Construction activities undertaken by TFL for setting up of Coal Gasification Plant, Ammonia- Urea plant and other offsites & utilities.
- **Dankuni Methanol Plant:** Coal Gasification based on low ash coal. Investment: ₹5800 Crs. Project planned through BOO mode and investment will be made by potential investors.

### Phase II Projects: up-scaling the efforts towards coal gasification.

Based on the feasibility studies and establishment of financial viability of Dankuni project, 5 projects have been identified in Phase II for scaling up gasification from low ash coal-

S N	Name	State	Coal feed	Quality
1	Shilpanchal	West Bengal	1.35 MTPA	Low ash
2	Utkarsh	Maharashtra	0.79 MTPA	Highash
3	Mahamaya	Chhattisgarh	1.35 MTPA	Low ash
4	Ashoka	Jharkhand	0.93 MTPA	high ash
5	Neyveli	Tamilnadu	4.0 MTPA	Lignite



**Phase III Projects:**

Initially, it has been planned to set up various gasification projects wherein CIL will take care of mining of coal and marketing of the product and gasification cum product conversion plant will be set up on BOO/BOM/LSTK contract basis. After

successfully establishing the technology with high ash coal in Jharkhand in phase II, more CIL projects will be identified for coal gasification. With 20% rebate on revenue share in case of future commercial coal mine auctions, it is expected to reach the goal of gasifying 100 MT of coal by 2030.