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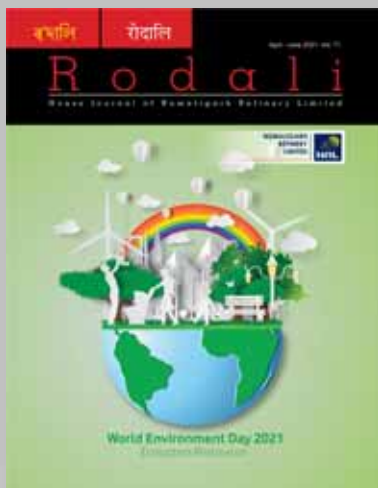
April - June 2021, Vol. 71

R o d a l i

House Journal of Numaligarh Refinery Limited



World Environment Day 2021
Ecosystem Restoration



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Rodali : April - June 2021

Published by Corporate Communications Department
for Numaligarh Refinery Limited

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Design & Production: Exclusive Advertising Pvt. Ltd.



From the Desk of the Editor

'Look on every exit as being an entrance to somewhere else' - Tom Stoppard

NRL's transition with OIL as holding Company through a Sale Purchase Agreement signed on 25th March 2021 was formalised with the first Board Meeting of NRL held under the chairmanship of CMD OIL and Chairman NRL Shri Sushil Chandra Mishra at NRL Corporate Office on 13th of April. A joint Press Meet followed to make an official announcement of this historic development. As part of the ongoing changeover, the Govt. of Assam handed over a cheque of Rs. 500 crore to OIL on 27th May, another step nearer in enhancing its equity stake to 26 per cent in NRL; formally announced by the Hon'ble CM of Assam, Dr. Himanta Biswa Sarma through yet another Press Meet.

This quarter was also marked by the visit of Hon'ble Secretary, Ministry of Petroleum and Natural Gas, Shri Tarun Kapoor, IAS to Numaligarh Refinery in order to review progress of major projects being undertaken by our Company including the Refinery Expansion Project and the Bio Refinery Project.

NRL's 29th Foundation Day on 22nd April gave us all an opportunity to recall and celebrate in spirit, the eventful saga of our company spanning 28 years, while bracing ourselves for an exciting journey ahead with ambitious plans and projects on the anvil. The celebrations however were low-key due to COVID protocols.

'Ecosystem Restoration' is the theme of this year's World Environment Day (WED) celebrated on 5th June, apt at a time when the world is introspecting on ways for redemption from the wrath unleashed by Mother Nature in the form of a raging pandemic; sparked off by human indiscretions and reckless actions. Various activities and programs were undertaken by NRL following Govt. guidelines to spread the message of preservation & protection of the environment. The theme for this year's International Day of Yoga celebrated on 21st June was 'Yoga for wellness', a motto that is also aligned to the current state of humankind; observed in a meaningful way in NRL.

As part of 'Azadi ka Amrut Mahotsav- Celebrating 75 years of India's independence' spearheaded by the Govt. of India, our Company organized a Webinar on '2G Ethanol Plants - Challenges and Opportunities'; a topic chosen to bring forth all facets of our upcoming Bio Refinery being implemented through the JV- Assam Bio Refinery Pvt. Ltd.

Many more developments marking the first quarter of the financial year 2021-22 fill up the pages of this issue of Rodali, which I am sure will keep you engaged for a while.

Our resilience defines us, our nimbleness enables us and our wisdom will guide us in these tough times. Let us hope that the road ahead will be brighter than the one we leave behind.

Adieu till the next issue,

Warm regards,

Madhuchanda Adhikari

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NumaligarhRefineryLimitedAssam

Highlights of NRL's Performance during Q1 of FY 2021-22

Physical Performance

NRL's Crude throughput during the first quarter of the year was 640 TMT against target of 705 TMT. Throughput was lower than target due to low demand during 2nd wave of COVID-19 lockdown. Crude Oil processed during the corresponding period of previous year was 625 TMT.

Product Sale during the quarter was 587 TMT compared to 599 TMT recorded in the corresponding period of previous year.

Financial Performance of FY 2021-22

The financial figures shared in the last issue of Rodali were provisional. Post finalization of accounts for the FY 2021-22, the final figures are given below :

- Sales Turnover of Rs. 18,544 Crore
- Highest ever PBT at Rs. 4,083 Crore and highest ever PAT at Rs. 3,036 Crore.
- Gross Refining Margin during the year was \$ 4.09 per bbl.
- Highest ever contribution to the Central and State exchequer at Rs. 6,468 Crore.

Production Efficiency

- Distillate Yield during Apr-Jun'21 was 82.43% which was lower due to restricted throughput during 2nd wave of COVID-19 lockdown. Distillate Yield during corresponding period of previous year was 86.68%.
- Specific Energy Consumption (SEC) during the quarter was 64.51 MBN vis-à-vis draft MoU target of 64.05 MBN. SEC during corresponding period of previous year was 67.93 MBN.
- Energy Intensity Index (EII) recorded during the quarter was 86.55 vis-à-vis internal target of 86.0. EII during corresponding period of previous year was 94.0.
- The reasons for higher SEC and EII was mainly due to lower capacity utilization on account of 2nd wave of COVID-lockdown.

Capital expenditure

Capital expenditure during Apr-Jun'21 was Rs. 281 Crore against annual draft MoU target of Rs. 2,000 Crore.

Project implementation

a) Indo- Bangla Friendship Pipeline

Overall physical progress as on 30.06.2021 is 73.8%. NRL's cumulative expenditure in this project up to 30.06.2021 was Rs. 158 Crore. The project is targeted to be commissioned by December, 2021.

b) Refinery Expansion from 3 to 9 MMT

Licensor selection process for SRU, DHDT, GDS, MSU, PFCC and RPTU have been completed. For balance 01 unit (LPGTU), Licensor Selection is under evaluation.

c) Investment in new JVs

i) Assam Bio Refinery Pvt. Limited (ABRPL):

NRL has entered into a new JV to set up a Bio-refinery for production of ethanol from bamboo bio-mass. The JV Company was incorporated as 'Assam Bio-Refinery Pvt. Limited' on 04.06.2018 with equity participation of NRL (50%), Chempolis Oy, Finland (22%) and Fortum 3 B.V., Netherland (28%). The estimated cost of setting up the Bio-Refinery is Rs. 1,750 Crore and is targeted to be completed by September, 2021. At present on June, 2021, the overall physical progress achieved is 37.7%, while the financial progress is 38.86%.

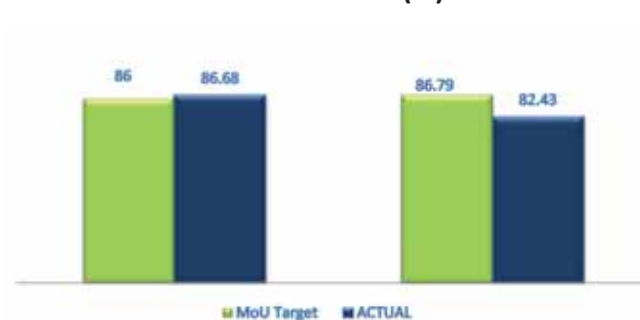
ii) Indradhanush Gas Grid Limited (IGGL):

NRL is a partner with 20% stake in Indradhanush Gas Grid Limited (IGGL) which is executing Natural Gas Pipeline of 4.75 MMSCMD capacity. Estimated project cost is Rs. 9,265 Crore. An amount of Rs. 5,559 Crore which constitutes 60% of the total project cost of Rs. 9265 Crore has been sanctioned by the Government as Viability Gap Funding in January, 2020 to make the project viable. The gas pipeline will connect the all the eight North-eastern states i.e. Assam, Meghalaya, Tripura, Mizoram, Manipur, Nagaland, Arunachal Pradesh and Sikkim. Once implemented the project is expected to ensure smooth supply of NG to help in ushering the states into Gas based economy and will help in rapid industrial development of the states. The project is expected to be completed by March, 2024. Physical process as on June'21 is 18.79%.

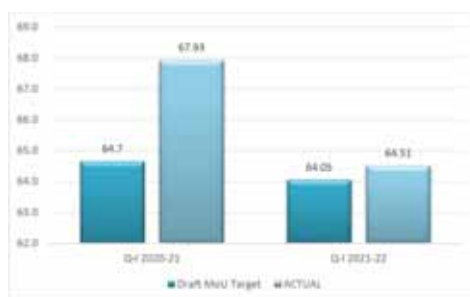
Crude Throughput (TMT)



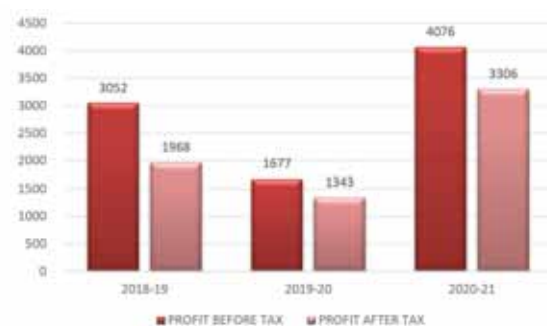
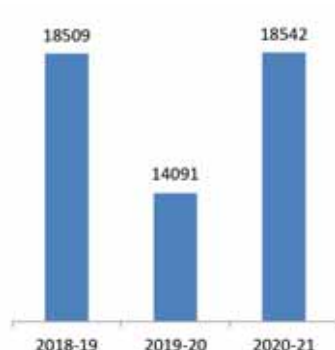
Distillate Yield (%)



**Specific Energy Consumption
(in MBN)**



Sales Turnover (Rs. Crore)



NRL News

Union Petroleum Secretary Reviews NRL Projects

Hon'ble Secretary, Ministry of Petroleum and Natural Gas, Shri Tarun Kapoor, IAS was on a 2-day visit to Numaligarh Refinery from 22nd June 2021 to review progress of major projects being undertaken by NRL including the Refinery Expansion Project and the Bio Refinery Project.

Shri Kapoor commenced his Refinery visit by formally inaugurating **Pragati Dwar**, the doorway to the upcoming Refinery Expansion Project Site. He was accompanied by Chairman NRL Shri S C Mishra, MD NRL Shri S K Barua, Director Technical NRL Shri B J Phukan, Director Finance NRL Shri I Mittra and senior officials of the company. Incidentally, it was also the first visit of our new Chairman Shri S C Mishra to the Refinery.

Thereafter, he proceeded on a recce of the Project Site. At the upcoming Bio Refinery Project Site, he reviewed the progress of the Bio Refinery by way of a detailed presentation of the Bio Refinery project with live drone feed from the construction site. More than 1,700 project workers are presently engaged at various construction sites of NRL and ABRPL (Assam Bio Refinery Pvt. Ltd.) following strict COVID-19 protocols.

Earlier, Sri Kapoor along with Sri Barua visited Dhansiri Mukh and took an hour boat ride on the Dhansiri to understand the canal and navigability of Dhansiri river that would be used by NRL for transportation of Over

Dimensional and Over Weight Consignments directly from Vendor workshop for the Expansion Project.

Hon'ble Secretary also paid a visit to the Main Control Room of the Refinery where he took stock of Refinery operations. Thereafter, he was taken to the Wax Slabbing Unit of the Wax Plant, the largest single unit of Paraffin Wax production in the country.

Later, the Secretary interacted with senior officials of NRL and launched the new Corporate film of NRL encompassing the essence of the organisation since its inception and establishment, the different facets of the company that makes it unique, its contribution to the society and the way forward. A brief presentation was made on the future outlook of the company through strategic initiatives. The Secretary expressed his satisfaction on the progress of major projects and assured his full cooperation in resolving issues for seamless execution of the projects.

Prior to reaching Numaligarh, he had a detailed discussion at Dispur with Chief Secretary, Govt. of Assam Shri Jishnu Baruah, IAS and senior officials of Govt. of Assam on 21st June on various issues pertaining to Oil and Gas industry in Assam. He was accompanied by MD NRL Shri S K Barua, Director (Operations) OIL Shri P K Goswami and representatives of Oil Companies including IOCL, ONGC and IGGL.

Glimpses of Hon'ble Petroleum Secretary Shri Tarun Kapoor's visit to NRL



Welcome at Refinery Expansion Project Site



Inspecting the ceremonial guard of honour



Inauguration of Pragati Dwar



Taking stock of Refinery Operations



Inauguration of Seuj Dwar-the Main Gate Building of Assam Bio Refinery



Presentation on progress of the Bio Refinery



At the Wax Slabbing Unit



Taking a recce of the Refinery



Inauguration of new NRL Corporate film



Hon'ble Secretary with Chairman NRL Shi S C Mishra and other senior officials



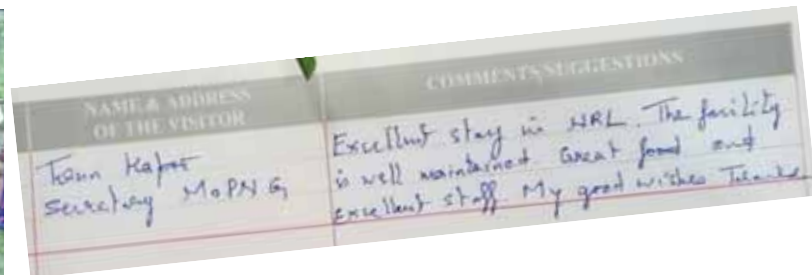
Planting a sapling at Smritibon



Madam Kapoor planting a sapling at Smritibon



Madam Kapoor visits nearby weaving centre supported by NRL under CSR



Picture speak



Glimpse of the first Board Meeting of NRL with Oil India Ltd. (OIL) as the holding company held at NRL Corporate Office Guwahati on 13th April 2021. The meeting was presided over by CMD OIL and Chairman NRL, Shri Sushil Chandra Mishra in presence of NRL Board members.

Joint Press Conference of NRL & OIL held

A joint Press conference of NRL and OIL was held on 13th April 2021 in Guwahati to formally brief the regional media on the historic development of OIL taking over majority stake in NRL and the synergies the two companies bring about into the energy scenario of the North East and the Nation.



The OIL-NRL Synergy

The ownership change of NRL through a Sale Purchase Agreement on 25th March 2021 has been covered in the earlier issue of Rodali. Some more information on what this Synergy brings on board :

- OIL is the primary source of crude oil for NRL. Annually, OIL supplies around 2,000 TMT of crude oil to Numaligarh Refinery, which is 67% of NRL's requirement. Further, the amount of crude oil supplied by OIL is around 60% of indigenous crude produced by the Company in North East. Both the companies can benefit from optimisation/ further improvement of feedstock supply and crude processing at the refinery.
- OIL produces around 7-8 MMSCMD of NG in North East, out of which around 1 MMSCMD is supplied to NRL.
- OIL is currently operating the Naharkatiya-Baraunicrude pipeline as well as Numaligarh-Siliguri Product Pipeline.
- NRL is executing a cross-country crude pipeline of 1630 KM in length which will traverse through 5 states (Odisha, West Bengal, Jharkhand, Bihar and Assam). OIL's expertise in execution and operation of pipelines can be shared in development of the same.
- NRL has already ventured into upstream oil exploration partnering with OIL as operator in two oil blocks (Namrup and West Mechaki). NRL has earmarked investment of around Rs.90 crore in these two blocks.
- NRL has ventured into production of value-added food grade wax, food grade hexane and exploring possibilities for developing other niche chemicals like furfural alcohol, biodegradable plastics etc. NRL can leverage OIL's international presence and explore export markets for such products.
- OIL and NRL are partners in several other joint ventures in related businesses. The synergy will enable further consolidation of OIL-NRL group in such JVs.
- OIL and NRL are also the promoters, 20% shareholding each in Indradhanush Gas Grid Limited (IGGL) where we will be setting cross-country NG Pipeline connecting all the state capitals of North East.
- For OIL, acquisition of majority shares of NRL is not only a strategic business decision but one of the defining moments of OIL's corporate journey as an E&P Company looking for vertical integration in the oil & gas value chain. The acquisition is likely to partially mitigate the effect of volatility of crude price cycle due to diversification of cash flows, reduce earnings volatility and enhance shareholder value. At the same time, NRL also now has become

part of an integrated energy company and together OIL-NRL can create a tremendous synergy that will help both the entities to consolidate their business plans and achieve sustainable growth and success in all their endeavors.

To conclude, OIL and NRL have a very special place in the hearts of the people of Assam, where both the Companies have grown. The Central Government as well as the State Government has laid huge emphasis on Act East Policy with focus on creating long lasting business relations with the neighbouring countries on the North Eastern frontiers of our country. Together, OIL and NRL

will be able to play a pivotal role in contributing towards fulfilling this vision. With the massive refining capacity enhancement project of NRL and aggressive exploration plans of OIL in existing and new hydrocarbon blocks in North East, OIL-NRL will be able to contribute immensely in ensuring energy security of the nation and achieve the targets set by the Ministry of Petroleum and Natural Gas under North East Hydrocarbon Vision 2030. Presence of EIL in the consortium will further boost the technical expertise, which will become more relevant considering the expansion plan of NRL.

Govt. of Assam hands over Rs. 500 Crore to OIL for enhancing equity stake in NRL

The Assam government handed over a cheque of Rs 500 crore to Oil India Limited (OIL) as a part of its enhanced 26 per cent share in the Numaligarh Refinery Limited (NRL) on 27th May 2021. Hon'ble Chief Minister of Assam Dr. Himanta Biswa Sarma, addressing a press conference at the Assam Administrative Staff College, Khanapara, Guwahati said that the State Government had decided to increase its stake in the NRL from 12.35 per cent to 26 per cent in the budget proposal of 2020-21 at its then assessed value of Rs 1,400 crore which was subsequently increased to Rs 2,187 crore.

'The matter was, however, not simple and it was a tough call for the Union government to segregate NRL from Bharat Petroleum Corporation Limited and hand over the Refinery's stake to OIL', he said. Hon'ble Prime Minister Shri Narendra Modi took a decisive step to ensure that NRL remains a stand-alone refinery with OIL and Assam government as a major stakeholders. 'The decision to enhance the share of Assam government in NRL was taken in March this year but by then the value of the 26 per cent share had increased to Rs 2,187 Crore which we

had to pay by March 31 and we did not have that much money', the Chief Minister said. He said that as the then state Finance Minister, he had approached Petroleum Minister Dharmendra Pradhan with the problem, who had suggested that the State Government pay a token amount while OIL will deposit the remaining amount with the Centre.

'We had paid Rs 500 crore in March and Rs 500 crore today while the remaining Rs 1,187 Crore will be cleared by September 2021 and the State Government will now have 26 per cent share in NRL', he said. Dr. Sarma said that NRL was a very important organisation for the State Government as it was a refinery set up under the provisions of the Assam Accord and has an emotional connect with the people of the state.

'The emotional connect is a factor but financial decisions cannot be taken on this basis alone. The enhancement of the State Government's share is a very prudent business decision as well', Dr. Sarma said. He pointed out that with a share of 12.5 per cent, the state government received a dividend of Rs 335 crore and now with 26 per cent share,



if there is no major upheaval in the market, a dividend of Rs 500 crore was expected. 'We expect to recover the investment made in the share along with the interest it would have earned within the next four to five years', he added.

Besides, NRL has embarked on major capacity building projects with its current refining capacity of three Million Metric Tonnes (MMT) to be increased to nine MMT by 2024. 'This will definitely lead to more earning for the state government as with 3 MMT, the state government is getting Rs 500 crore and with 9 MMT, it will definitely get much more', he said. A pipeline is being set up at Paradip which will transport six MMT of crude oil to NRL, Bongaigaon and Guwahati Refineries where it will be refined and sold in Myanmar, Bangladesh and other states of the country, he said. NRL will also consume five lakh bamboo in its bio-refinery and will produce sustainable fuel by mixing

ethanol and diesel, Dr. Sarma said. 'All these projects will prove to be financially viable and will economically benefit the state government', he said. Referring to OIL as the major stakeholder of the company, the chief minister said that the oil major may be a Central PSU but it is linked inextricably with the economic development of the state and the people of the state consider the company as its own. Besides NRL, OIL and the state government are engaged in several joint projects and these include the Assam Gas Company Limited, Duliajan-Numaligarh pipeline, Assam Petrochemicals and Purbabharati-Indradhanush projects, he said. OIL is also engaged in the Brahmaputra Gas Cracker and Polymer Limited which has earned a profit and the state government will get a dividend while it will also help in re-energising the Brahmaputra Valley Fertilizer Corporation Limited at Namrup.

Rs. 2,600 Crore worth of items procured through GEM

Creating a record of sorts, NRL has successfully procured 26 inches Dia and 1164 KM length 'Carbon Steel Coated Line Pipes' with a cumulative value of Rs. 2,600 crore to be used for the Line Pipe Insertion for 1,800 km (approx) from Odisha to Numaligarh through GeM (Govt. e-Marketplace) in April, 2021.

NRL has been the biggest driver of GEM (Government e-Marketplace) in the North East with 44 % of total procurement through GeM in the year 2020-21 against NRL's internal target of 25%.



Rs. 32 Crore earmarked to fight Covid-19 Pandemic

In view of the extraordinary situation arising in the country and the state of Assam due to the 2nd Wave of Covid-19 pandemic that has seen a steep surge in infections and fatalities, NRL has earmarked a budget of Rs. 32 Crore to ramp up facilities and provisions to tackle the pandemic.

In the first phase, an amount of Rs. 6.55 Crore was spent for setting up of COVID Hospital in Jorhat Medical College & Hospital with 120 beds and 20 ICU beds having ventilators, cardiac monitor, Oxygen cylinders, etc. *(The hospital was formally inaugurated on 14th June 2021, details of which have been covered in CSR Section).* In addition, 5 bedded ICU Unit is being set-up at Garamur District Hospital, Majuli. Similarly, NRL extended support to different COVID

Care Centres set up in adjacent Sarupathar, Bokakhat, Golaghat, Nagaon and Bajali. The VKNRL School of Nursing at Numaligarh has been converted to a 75 bedded COVID Care Centre manned by Doctors, Nurses and Paramedics of VKNRL Hospital and VKNRL School of Nursing round the clock.

NRL has also handed over medical equipment and provisions including N95 masks, Pulse Oximeters, hand sanitizers, nebulizers, BP measuring instruments to Golaghat Govt. Hospital. Moreover, medical equipment like Oxygen Concentrators are being provided to different Civil Hospitals/Model Hospitals of Golaghat District. Till date, NRL has procured 336 numbers of oxygen cylinders (10

ltrs./47 ltrs) which will be distributed to hospitals and PHEs within the state. NRL had also procured 35 nos. Deep Freezers and handed it over to Health Deptt, Government of Assam Govt. for storage of vaccines.

As a Ministry of Petroleum and Natural Gas initiative, NRL is setting up Oxygen plants of capacity 2000/500 litres per minute to meet the requirement of 4 Bihar Medical Colleges and Hospitals and 2 plants in Assam to be commissioned by July 2021. In addition, NRL has contributed for 700 nos. of Oxygen Cylinder and 100 nos. of Oxygen Concentrator as a part of MoP&NG drive to procure 25,000 Oxygen

Cylinder and 10000 Oxygen Concentrators through all Oil PSUs across the country.

NRL has also ramped up its vaccination drive to cover more and more employees, their families, contractors, stakeholders and people in nearby areas. COVID Care centres, Isolation and Quarantine centres have been set up in Numaligarh and Siliguri for NRL employees and their families and a 500 litres per minute Oxygen plant is being installed in VK NRL Hospital situated within NRL Township within July 2021. Apart from these, ten students of VKNRL School of Nursing are also extending their support in the nearby vaccination units of Bokakhat sub division.

Contribution to Chief Minister's Relief Fund, Assam

NRL as a responsible Corporate has once again come to the fore to strengthen the initiatives of the Government of Assam, by contributing Rs 5 Crore towards the Chief Minister's Relief Fund to support the State's vaccination drive in tackling the COVID-19 pandemic. The contribution was ceremoniously handed over to Hon'ble Chief Minister of Assam Dr. Himanta Biswa Sarma by MD NRL Mr. S. K. Barua at Assam Administrative Staff College on 27th May 2021 in presence of Cabinet Ministers and senior NRL officials.

In addition, NRL employees too donated an amount of Rs. 57.37 lakh to Chief Minister's Relief, Assam contributing at an individual level to help and strengthen the efforts of the Govt. of Assam to combat the 2nd Wave of COVID-19 pandemic. The cheque amounting Rs. 57.37 lakh was handed over to Hon'ble Chief Minister Dr. Himanta Biswa Sarma at his office chamber on 15th June 2021 by a team of NRL Employees led by DGM (Corporate Communications) Ms. Madhuchanda Adhikari.



Rs. 5 Crore to CM's Relief Fund from NRL



Rs. 57.37 lakh to CM's Relief Fund from Employees

OBSERVANCES

29th NRL Foundation Day Celebrated in a solemn manner

The 29th Foundation Day of Numaligarh Refinery Limited was observed in a solemn manner observing all COVID-19 protocols on 22nd April 2020. At Numaligarh, the observance commenced with the hoisting of NRL Day flag at Kunjakanan- NRL Township by MD Mr. S.K. Barua in presence of Director (Technical) Mr. B J Phukan, Director (Finance) Mr. I Mitra and senior officials of the Company. The program started with a rendition of NRL Theme Song followed by NRL Day Pledge taking in Assamese, Hindi and

English, which was also undertaken in other locations of the Company. MD in his address recollected the glorious journey of the Company from its inception in the early nineties through its establishment as a company in the year 1993 and paid rich tributes to the pioneers of the Refinery Project, who traversed through uncertainty to translate a dream to reality. Director (Technical) Mr. B J Phukan exhorted employees to embrace change swiftly in today's dynamic world where the future of energy is



MD Mr. S.K. Barua hoisting the NRL flag at Kunjaban- NRL Township



MD Mr. S.K. Barua, Director (Technical) Mr. B J Phukan and Director (Finance) Mr. I Mitra addressing employees at the NRL Foundation Day program



undergoing a paradigm shift; to remain relevant and sustainable in the long run. Director (Finance) Mr. I Mitra acknowledged the whole hearted efforts of NRL employees during the trying times on account of COVID-19 pandemic and shared major highlights of the Company's performance and the way forward as NRL marches ahead to implement major projects

that promise to change the industrial landscape of the region.

As part of the NRL day function, four mini trucks were handed over to nearby groups engaged in agricultural activities. Awards ceremony of 'Be The Change' Employee suggestion scheme 2020 was held and citations were handed over to prize winners (Refer to box article).

Award ceremony for Be the Change Employee Suggestion Scheme 2020

'Be the Change that you wish to see in the world' are the famous words of wisdom by the Father of the Nation Mahatma Gandhi. With this as a cornerstone, Corporate Communications Department of NRL launched '**BE THE CHANGE Suggestion Scheme**' in the Financial Year 2015-16. The objective of the scheme was to recognize and reward individual ingenuity and creativity and also provide equal opportunity to all employees to participate in the growth and development of the Company. The platform has since emerged as one of the most important mediums of employee engagement and has been on digital platform since the second edition i.e suggestions are necessarily received through the Company's Local Area Network *Eureka*.

After 4 successful editions, the 5th edition of Be the Change Suggestion scheme was launched. Overwhelming response was received from employees

across locations. It may be mentioned that prize money was substantially enhanced from this edition to attract the best ideas and innovations.

A total of 187 suggestions were received out of which 34 were found to be feasible suggestions by the 1st Evaluation and Screening committee.

Thereafter, the 2nd Evaluation Committee shortlisted 13 suggestions out of the 34 suggestions screened by the first evaluation committee and invited them for presentations. 10 suggestions have finally made it to the list of prize winners. The prize winners were awarded at the 29th Foundation Day celebrations held amidst COVID-19 protocols at *Kunjaban* in *Kunjakanan- NRL Township*. MD Mr. S K Barua, DT Mr. B J Phukan and DF Mr. I Mitra gave away the awards to the deserving winners.

Final list of Winners of 5th edition of 'Be the Change' Suggestion Scheme 2020

Sl. No.	Suggestor Name	Title of Suggestion	Position	Certificate
1	Gaurav Joardar Bubul Jyoti Das	Using Heavy Naphtha in Lieu of Reformat for preparing Chloriding Solution in CRU	I	Innovator par Excellence
2	Manas Pratim Chamuah	Testing facility for foam pourer system in fixed roof or fixed cum floating roof tanks.	II	Innovator par Excellence

Sl. No.	Suggestor Name	Title of Suggestion	Position	Certificate
3	Lakhim Gogoi Md. Nayan Ahmed Anil Deka	Alternate MTO road loading line	III	Certificate of Innovation
4	Pranjal Dutta Bedobrat Barhai Pankaj Kumar Roy Nitin Khandelwal	Production of Very Low Sulphur Fuel Oil (IMO2020 Grade) at NRL	IV	Certificate of Innovation

Sl. No.	Suggestor Name	Title of Suggestion	Position	Certificate	Sl. No.	Suggestor Name	Title of Suggestion	Position	Certificate
5	Priyam Sharma Krishna Kt Dutta Abhijit Neog Durga Sarma Gojen Doley	Processing and purification of slop oil for processing with crude oil	V	Certificate of Innovation	8	Saurov Sharma Baruah	Connection of SDV 1901 U/S and D/S LPD end flanges with a 3/4th line having a separate drain valve	VIII	Certificate of Innovation
6	Paras Pratim Sarmah Rituraj Saikia	Separate loading point for Army grade HSD utilizing existing facilities	VI	Certificate of Innovation	9	Javed Mahammed Medini Kumar Bora Raju Chetia Sikha Rani Das	Heat Recovery from Ground Flare	IX	Appreciation letter, no prize money
7	Abhijit Deb Roy	Production of pharmaceutical grade N-HEXANE (De-aromatised hexane solvent) in Isom unit by modifying existing DIH column to a Double wall column	VII	Certificate of Innovation	10	Abhijit Deb Roy Swarupjit Hazarika Manash Pratim Das	Increasing HCU heavy naphtha temperature at the inlet of new sulphur guard (15-VV-21 A/B) in MSP CRU unit	X	Appreciation letter, no prize money

Management has also decided to acknowledge the contribution of Mr. Jayanta Dutta and Mr. Kaustuv M Goswami whose idea on 'Door to door delivery of MS/HSD to NRL customers' presented to CFD during 2018 has been implemented with the launch of MDV (Mobile Dispensing Vehicles) Photonz by Marketing Deptt. on 31-03-21.

SPECIAL PRIZE				
11	Jayanta Dutta Kaustuv M Goswami	Door delivery of MS/HSD to NRL Customers		Appreciation letter

Glimpses of Award Ceremony of 5th Edition of Be the Change Suggestion Scheme





Jury members being felicitated

A few other launches and inaugurations were carried out as part of the celebrations including inauguration of Sewage Treatment plant at NRL Township, flagging off 2 Mobile Dispensing Vehicle branded **Photonz**, inauguration of new elevated flare. Finally, a VC was held in the newly inaugurated Board Room at NRL Admin Building where MD and Directors interacted with senior officials from other locations of the Company.



World Environment Day-2021



World Environment Day is celebrated across the world on 5th June every year since 1974 evolving into the most remarkable day for environmental action. The UN Environment Program (UNEP) organizes events for World Environment Day every year to encourage worldwide awareness and action for the protection of environment. In 1974, the first World Environment Day was celebrated with the theme 'Only One Earth'. The theme of World Environment Day 2021 is 'Ecosystem Restoration' with Pakistan as the host country. The day calls for urgent action to revive our damaged ecosystems and the timeline to achieve Sustainable Development Goals by 2030. Ecosystem restoration means assisting in the recovery of ecosystems that have been degraded or destroyed, as well as conserving the ecosystems that are still intact. The theme caters to the motion: Reimagine, Recreate and restore!

Numaligarh Refinery Ltd observed 'World Environment Day-2021' on 5th June'21 focusing on the theme i.e. 'Ecosystem Restoration'. Various activities and programs were undertaken by NRL following Govt. guidelines

to spread the message of preservation & protection of environment though this year's WED celebration is restricted due to on going COVID-19 pandemic.

As part of observance of World Environment Day-2021, few awareness programs like Slogan competition among the employees of NRL, VKNRL Hospital, DPS, CISF and their family members and online Green Quiz was conducted among employees of NRL. Due to pandemic situation, awareness programs outside the refinery i.e. in schools, tea gardens, markets etc. could not be organised.

Different environmental related information were circulated to employees on a regular basis by email in the run up to WED 2021.

On 5th June, 2021, in the morning hours World Environment Day Flag was hoisted by Director (Technical) Mr. B.J. Phukan in presence of Director (Finance) Mr. I Mittra amidst a limited gathering comprising of senior officials at Kunjaban, NRL Township. The Environmental pledge was administered in Assamese, Hindi and English that was followed by speeches on importance of Ecosystem Restoration and NRL's contribution towards restoration by senior officials and then plantation activities. The program concluded with formal vote of thanks.

Virtual Pledge taking ceremony and plantation drive also organized at different location of NRL - Guwahati, SMT, Delhi office on the same day.

Around 1000 Neem Tree saplings were distributed to NRL township residents and CISF colony on the occasion.

The valedictory function of World Environment Day-2021 was organized on 7th June, 2021. Due to the prevailing pandemic, the function was arranged in online mode. Prof. K. Mohanty, professor, IIT Ghys was invited as Chief guest for this function. Prof. K. Mohanty in his speech & presentation

shared knowledge and enlightened the gathering on the environment and related issues mainly microplastic that is present in salts and how it impacts human health and environment adversely. The function concluded with a vote of thanks.

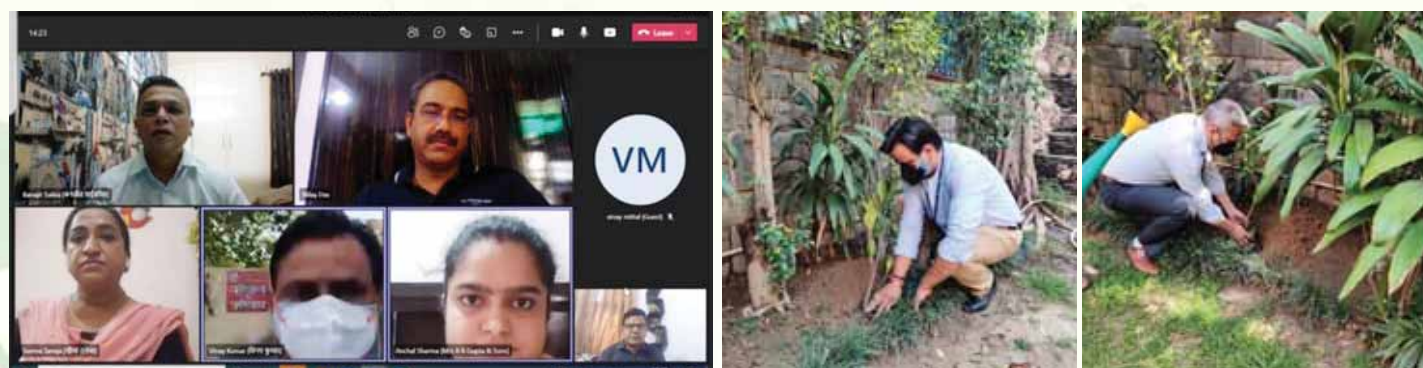
View of Pledge taking ceremony and plantation at Kunjaban



View of virtual Pledge taking ceremony and plantation in Guwahati



View of Virtual Pledge taking ceremony and plantation in Delhi



View of Pledge taking ceremony and plantation at SMT



View of virtual Valedictory function



Prize winners of Competitions

Winners of Green Quiz 2021

- First prize : Deepjyoti Deka
- Second prize : Aditya Sharma
- Third prize : Mansi Motwani
- Fourth prize : Sarfrazullah Nawaz Sayed
- Fifth prize : Dikhita Lahon

Winners of SLOGAN competition:

Assamese Slogan

- First prize : Saurav Sarma Baruah, AM (Operation) H2U
- Second Prize : Neeki Moni Borah. GET, QC Lab
- Third Prize : Prayashi Borthakur, Bhabani 18

English Slogan

- First prize : Dipankar Bonia
- Second prize : Purabi Chakravorti
- Third Prize : Ananya Sonowal (H2U) 9435640187

Hindi Slogan

- First prize : Manjeet Kaur (W/o Vinod Kumar), CISF
- Second Prize : Ranjit Kalita, OM &S
- Third Prize : Junu Rava



International Day of Yoga



The 7th International Day of Yoga (IDY) was celebrated with various activities on 21st June 2021 at NRL. On the theme, 'Yoga for well-being', much relevant for our times in a society still recovering from the impact of the coronavirus disease (Covid-19) pandemic.

An audio video message of MD, NRL S.K. Barua was circulated to employees on 21st June 2021 where he emphasized on the importance of Yoga in day-to-day life, the beauty of yogic science and culture and its influence in aiding our physical and mental well-being.

NRL Learning Center organized an online live interactive session on 'Health Awareness and Management' by Dr. Mukundam Borah, Deputy Superintendent, Guwahati Medical College and Hospital who shared valuable tips and guidance to stay fit and healthy during the present pandemic situation. Simple Asanas were also demonstrated and benefits of practicing such Asanas while staying at home was explained. A considerable number of employees of NRL, DPS, VK NRL Hospital, CISF along with their spouses participated the webinar. Essay and Slogan competition was also organized in three categories (English, Assamese and Hindi) and winners of various competition are:



Essay Competition	Category (English)	Category (Assamese)	Category (Hindi)
1 st Prize	Rinku Gogoi	Rintu Hatibaruah	
2 nd Prize	Dipanjali Borah Tamuli W/O Keshawananda Tamuli	Babita Baruah, W/O-Diganta Bordoloi	
3 rd Prize	Anil Deka	1)Mousumi Barman W/O-Histesh Kr. Barman 2)Swarnalata Deka W/O-Anil Deka	
Consolation Prize	1)Deepak kr.kakati 2)Aishwarya Bammidi		1)Rakhi Acharya W/O Ripun Acharya 2)Nilakshi Khargharia, W/O Sanjeev Kr. Saikia

Slogan Competition	Category(English)	Category(Assamese)	Category(Hindi)
1 st Prize	Ananya Sonowal	Bornali Goswami W/O-Sourav Sharma Baruah	Rintu Hatibaruah
2 nd Prize	Sikharani Das	Sourav Sharma Baruah	Pritismita Bhattacharjee, W/O-Mriganka Sharama (Inst.)
3 rd Prize	Rumi Borgohain, W/O-Rinku Gogoi	Tulumoni Gogoi	Aishwarya Bammidi
Consolation Prize	Anil Deka		Ranjit Kalita

Greetings and Felicitations



MD Mr. S K Barua met the newly appointed Hon'ble Chief Minister of Assam Dr. Himanta Biswa Sarma in his office chamber in Dispur on 12th May 2021 and wished him a successful tenure. He also expressed his sincere gratitude to the Govt. of Assam for reposing its trust and confidence in NRL's abilities to perform and achieve.

Atithi Devo Bhava

Visit of officials from US Consulate General, Kolkata



Ms. Sonia Laul, U.S. Consul for Political and Economic Affairs and Mr. Rakeeb Hossain, Assistant Political & Economic Affairs being welcomed in the Refinery on 12th April 2021

Picture speak



COVID-19 Vaccination drive in NRL Township commenced on 30th May 2021

EVENT

Webinar on '2G Ethanol Plants - Challenges and Opportunities'

Marking *Azadi Ka Amrut Mahotsav* - Celebrating 75 years of India's Independence, NRL organized a webinar on '2G Ethanol Plants- Challenges and Opportunities' on 28th May 2021. MD NRL Mr S K Barua delivered the Welcome Address, Mr Tarun Kapoor, Secretary, Ministry of Petroleum and Natural Gas, Government of India delivered the Keynote Address. Nine panelists - experts in their respective fields - deliberated on various aspects of 2G Ethanol Plants and Bio refineries. The webinar was viewed online by a number of attendees, and was streamed live on NRL FB Page.

Webinar
on
2G Ethanol Plants
Challenges and Opportunities

Keynote Address by
Mr. Tarun Kapoor
Secretary, Ministry of Petroleum and Natural Gas,
Government of India

Speakers

Mr. B J Phukan Director (Technical) NRL	Ms. Jaya Rawat DGM(R&D) CRDC BPCL	Mr. M S Patke ED (Biofuels) BPCL
Dr. G N Sastry Director NEIST Jorhat	Ms. Amrita Kashyap Chaliha Partner Chroma Biotech LL Dibrugarh	Mr. Shantanu Gupta CGM I/C (Alternate Energy & Sustainable Development) IOCL
Mr. Prashant Kumar CFO Assam Bio Refinery Pvt. Ltd.	Dr. Vimal Katiyar Dean (R&D) IIT Guwahati	Mr. Rajiv Agarwal Group General Manager EIL



Hon'ble Secretary, Ministry of Petroleum and Natural Gas Shri Tarun Kapoor, IAS delivering his key note address



A glimpse of the Webinar

CSR Snippets

Dedication of 120 Bedded COVID -19 Care Facility with 20 bedded ICU at Jorhat Medical College and Hospital

Our Company has dedicated a full-fledged 120 bedded Covid Care hospital at Jorhat Medical College & Hospital (JMCH) as a part of its continued support to the Govt. of Assam in combating the COVID-19 pandemic. The facility is expected to contribute in providing Covid-19 medical care to the public of Upper Assam as Jorhat is centrally accessible to people of three adjacent districts - Jorhat, Golaghat and Sivasagar.



The facility was inaugurated on 14th June 2021 by NRL MD - Shri S.K. Barua and MP, Lok Sabha - Shri Topon Kumar Gogoi in the distinguished presence of MP, Rajya Sabha - Shri Kamakhya Prasad Tasa, MLA Jorhat - Shri Hitendra Nath Goswami, DC Jorhat - Shri Ashok Kumar Barman and NRL Director Technical - Shri Bhaskar Jyoti Phukan, Principal cum Chief Superintendent, JMCH - Dr. Ratna Kanta Talukdar, Superintendent, JMCH - Dr. Purnima Baruah and several other senior officials and doctors of Numaligarh Refinery Limited and Jorhat Medical College & Hospital. Developed at a total cost of around ₹ 7 crore, the COVID Centre is equipped with 100 beds, 20 ICU beds, cardiac monitors, ventilators, nebulizers, oximeters, oxygen concentrators and other furniture items such as bed side trolley, locker, wheelchair etc. The project was completed on war footing by a task force deputed from NRL with unstinted support from Jorhat District Authority and the Department of Health Services, Govt. of Assam. In addition to building this facility, NRL is extending financial assistance for ICU technicians for a period of 6 months and is also renovating another building to be used as duty room for doctors and COVID wards.



Handing over of Tractors to Agricultural Entrepreneurs

Our Company handed over Tractors of 50 HP capacity under its Corporate Social Responsibility (CSR) scheme to two groups involved in agricultural activities; namely Assam Nabanirman Jutia Krishi Samabai Samittee, Chamupara, Darrang and Indigenous Agricultural Handing over of Farmers Producer Company Limited, Dispur Guwahati. In a handing over ceremony held at Corporate Office Guwahati on 1st April 2021, MD NRL - Mr. S K Barua ceremonially handed over the keys of the Tractors to Mr. Anup Chetia representing the beneficiary organizations in presence of SCGM NRL - Mr. Nikunja Borthakur, CGM Project (Pipeline) - NRL Mr. Manoj Pegu, Company Secretary - NRL Mr. H K. Sarmah, DGM Corporate Communication NRL - Ms. Madhuchanda Adhikari, SM (CSR) NRL - Mr. Biswamohan Burhagohain and other



senior officials of the Company. Speaking on the occasion, MD NRL Mr. S.K. Barua mentioned that NRL has always supported the people of Assam through its CSR activities and agri - allied activities is an important focus area in its purview. He hoped that the beneficiary organizations would be able to utilize the tractors to increase their yield and had words of praise for them for their sincere endeavors in taking up agricultural activities as a source of livelihood. Mr. Anup Chetia thanked NRL for its noble gesture and mentioned that the youth of Assam should focus on agriculture sector for sustainable development of Assam. The ceremony was also attended by Mr. G. Kumar Dev Goswami, Mr. Lila Kanta Sarma, Mr. Ripunjit Dutta, Smt. Monika Borgohain Baruah and other representatives of both the organizations.

CSR News in Pictures



4 Ambulances were donated to Charingia Block Public Health Centre, Furkating State Dispensary, Diphu Medical College & Hospital and Assam Medical College & Hospital on 11th & 14th June 2021



2 Mortuary Vans were donated to Golaghat Municipal Board and Circle Office, Dergaon on 14th June 2021



4 mini Pick-up vans were donated among Self Help Groups / Farmers Club on 22nd April, 2021



Inauguration of Agricultural product outlets centre under Custom Hiring Centre at Telgaram, on 05th April 2021



Mass sanitization drives at nearby public places from 15th to 21st April 2021



Distribution of water filter at Chinakan village on 05th April 2021 with Specialized Patent from Tezpur University for Removal of Arsenic from ground water.

Fire Service Week observed

Fire Service Week was observed from 14th April' 2021 to 21st April' 2021. The theme for this year was 'Maintenance of fire safety equipment is key to mitigate fire hazards'.

Activities conducted during Fire Service Week

- Awareness program conducted at CISF Township on 16th April' 2021 followed by 'On the spot quiz' on Fire & Safety.
- Word Search competition conducted on 19th April' 2021.
- Fire Tender and Fire Hydrant Drill competition conducted on 20th April' 2021 for Fireman.
- Fire Hydrant Drill competition conducted on 21st April' 2021 for CISF personnel.

Photo Gallery

Photo 1	Observance of National Fire Service Day on 14 th April 2021
Photo 2	Wreath placing at the Martyrs' memorial on 14 th April 2021
Photo 3	Inauguration of 2 newly procured Fire Tenders on 14 th April 2021
Photo 4,5	Fire Tender and Fire Hydrant Drill Competition
Photo 6,7	Awareness program at CISF Township



Glimpses of Onsite disaster mock conducted at NRMT (TT-004 B) on 29th June' 2021.



In Pictures



Pledge taking at SMT on 29th Foundation Day of NRL



Observance of World No Tobacco Day on 31st May 2021 at SMT



Observation of World Environment Day 2021 at SMT

Celebration of 7th International Day of Yoga on 21st June 2021 through online workshop at SMT



Vaccination Drive at SMT

SMT organized Vaccination Programme in several phases at its premises in coordination with Block Health Office Phansidewa, Siliguri. A total of 563 nos of persons including Employees, AMC workers, Project workers, Security personals, TT drivers and Helpers were vaccinated for first and second dose of Covishield vaccine.





India is looking towards kick-starting the hydrogen ecosystem development, says Shri Dharmendra Pradhan

Petroleum Minister addresses the Hydrogen Economy- New Delhi Dialogue

Shri Pradhan says Ministry of Petroleum and Natural Gas is committed to augment the hydrogen supply chain infrastructure in the country

Union Petroleum and Natural Gas & Steel Minister Shri Dharmendra Pradhan said on 15th April 2021 that India is looking towards various colors to kick-start the hydrogen ecosystem development. Addressing the Hydrogen RoundTable on “Hydrogen Economy: New Delhi Dialogue – 2021”, he said that in India, we have taken various initiatives with respect to the greater use of hydrogen in India’s energy mix. Government of India recently announced the National Hydrogen Mission in the Union Budget 2021 for making a hydrogen roadmap for the country. “We are working on a pilot project on Blue Hydrogen, Hydrogen CNG (H-CNG) and Green Hydrogen. Through technological advancements, we are blending hydrogen with compressed natural gas for use as transportation fuel as well as an industrial input to refineries. 50 buses in Delhi are plying on blended hydrogen in Compressed Natural Gas on a pilot basis. We plan to scale it up in the coming months across the major cities of India.”

The minister said that Energy is integral to support our fast-growing economy, and we are developing an energy sector which will be growth-centric, industry-friendly and environment-conscious. He said that we have the onerous task of ensuring energy justice and to end energy poverty in the country. This requires ample access to affordable energy to improve the lives of Indians coupled with the need to have a smaller carbon footprint.

Shri Pradhan said that the contours of India’s energy transition are changing fast. “Hon’ble Prime Minister of India Shri Narendra Modi has outlined a new energy map of India in October last year with seven key drivers, and, indeed, one of them is development of emerging fuels, particularly Hydrogen.” The minister said that the Government is developing a clear roadmap for a self-reliant India or an AatmaNirbhar Bharat, which seeks to place India as a manufacturing hub well-integrated with global supply chains. In this effort, energy will have a defining role.

Shri Pradhan said that hydrogen has great potential to emerge as a future source of energy. “The enthusiasm about hydrogen has a simple reason: whether it’s used in a fuel cell or burned to create heat, wherever hydrogen replaces fossil fuels, it slows global warming. Inclusion of “Hydrogen” as an energy carrier in the future energy portfolio presents a unique opportunity to address emerging energy vectors, including power to gas, power to power, and power to mobility and even vehicle to grid applications.”

The Minister said that India remains committed to environmental and climate causes with a massive thrust on deploying renewable energy and energy efficiency measures. In the past six years, India has increased its renewable power portfolio from 32 GW to almost 100 GW. “We are well on track to achieve 450 GW target of renewable energy generating capacity by 2030, he added. Diversification of our energy basket would be the key lever enabling this transition. However, it is equally important that the new energy-mix options synergize and co-exist with the established

base technology already operational in the respective countries, in which, huge capital investments have been made. That’s why the emergence of hydrogen at the centre stage is a welcome development.”

Shri Pradhan said that Ministry of Petroleum and Natural Gas is committed to augment the hydrogen supply chain infrastructure in the country. “Presently, as in the case of other countries, our petroleum sector is the largest producer of hydrogen for various refinery process operations. Hence, we realize petroleum sector’s capability to produce hydrogen molecules, stored and traded as gas, making it a natural votary of this new energy form. It provides us an opportunity to utilize existing business models and infrastructure unlike other e-options.”

The Minister said that Hydrogen is also capable of aligning with the Ministry’s other flagship schemes, like the promotion of compressed biogas under the Sustainable Alternative for Affordable towards Transportation (SATAT) scheme or promoting the gas-based economy or other initiatives on Waste-to-Energy. Such an integration will impart much more flexibility and capacity utilization to the vast infrastructure available or being created in India. He said that the utility of hydrogen is not going to be limited only to the transport sector. The maturity of the ecosystem can be accelerated through its usage as a decarbonizing agent for a range of sectors, including industry covering chemicals, iron, steel, fertilizer and refining, transport, heat and power.

Shri Pradhan said that by establishing synergies with natural gas, hydrogen can be easily adopted in the energy mix without seeking major infrastructural overhauling. “We are looking forward to introduce H-CNG as an intermittent technology in a big way for both automotive and domestic cooking applications.”

He said that our refineries are planning to leverage the available surplus hydrogen capacities in gray form for meeting the initial demand in mainstreaming hydrogen. “One of such projects is underway at our Gujarat refinery of Indian Oil wherein the combination of hydrogen production through natural gas and its hyphenation with the carbon capture technology will result in the production of blue hydrogen. Multiple buses powered by fuel cells will be covering various iconic routes. Efforts are underway to leverage the vast CNG pipeline infrastructure to reduce the transportation cost of hydrogen.”

The Minister announced that India, with its steadfast efforts towards leading the energy transition, backed by robust political will, is committed to engage with partners for ushering-in the hydrogen economy.

H.E. Dr. Sultan bin Ahmad Sultan Al Jaber, Minister of Industry and Advanced Technology, UAE, H.E. Mr. Angus Taylor, Minister for Energy and Emissions Reduction, Australia, H.E. Mr. Dan Jørgensen, Minister for Climate, Energy and Utilities, Denmark, and H.E. Mr. David M. Turk, Deputy Secretary of Energy, the United States also addressed the inaugural session of the roundtable.

Shaping the Energy Landscape in the new World Order

With the advent of Industrial revolution more than 200 years ago, there has been gradual temperature rise in the atmosphere due to burning of fossil fuels which has enhanced the natural greenhouse effect. Now, climate change is an existential crisis of our times with the stock of unbridled carbon emission which is choking the world. This has a profound effect on human life- soaring temperatures, extreme weather events, rising sea levels are now a constant feature of our life. Frequent and rapidly reoccurring extreme weather events instances prove beyond a shadow of doubt that we are now at the tipping point of survival and that we cannot show complacency anymore.

In 1800, world population reached one billion. By 1927 when population reached two billion, carbon emissions from fossil fuel burning and industry reached one billion tons per year. By 1989, it had reached six billion tons per year. In 2011, human population reached seven billion and 2011 data shows concentrations of greenhouse gases rising faster than in previous years. Today, population stands at more than seven billion and carbon dioxide emission is 43 billion ton per year (2019 figure). In 1988, atmospheric concentration of CO₂ molecules stood at 353 parts per million or ppm. As of June 2018, they have reached 411 ppm.

India's contribution is only 7% of global emission while industrialized countries must do more now. Nevertheless, India is the third largest carbon emitter after the USA and China. But Energy intensity is mere 1100 KW per capita for India vs the USA at 11000 KW per capita. But there are obvious aspirations for India to demand an equitable share of energy since India is on cusp of development!

The upcoming COP26 (scheduled in November 2021 in Glasgow, UK) focusses on limiting global temperature increase below 1.5 deg C from the pre-industrial level. The expectation going into the conference is that all developed economies would become net zero carbon emission by 2050 and all developing economies should commit to be net zero carbon emission by 2060. China has made a pledge to attain net zero by 2060 following a peak in emission before 2030, followed by Japan and South Korea with carbon neutrality goals by 2050. The European Union and UK has also raised their GHG reduction target towards 68% and 55% against 1990 levels of emission. With the USA turning to the Paris agreement the pitch for more net zero emissions target now gaining ground.

Considering India as an important pivot in the global economy, our participation and efforts to achieve our Nationally Determined Contributions (NDC) will only further solidify efforts to tackle climate change globally. However, India is at nascent stage of development, coupled with the demand for affordable energy which keeps growing strongly especially with rapid urbanization, modernization, and a burgeoning middle class. To meet this demand and other energy needs, we are still heavily dependent on fossil fuels which currently accounts for 60% of India's installed power capacity. Hence it is not realistic to suddenly replace fossil fuels with renewables. Despite these challenges, GOI has initiated a robust ambitious renewable programme setting high target to reduce the emission intensity of GDP by 33-35% below the 2005

levels and increasing the share of non-fossil fuel of the total capacity of power generation to 40% by 2030.

The Oil & Gas corporations, Utilities and automobile manufacturers are in the forefront to mitigate this global alarming issue of rising CO₂ concentration leading to temperature rise, and what the future might look like. Following are the key climate action trends of the new world order.



Geetali Kalita
CM (Technical
Services-Energy)

- **Global and Indian Decarbonization journey:** For the world to become net zero, there are several challenges to be achieved. Despite excitement in renewable energy in last decade, renewables itself will not be enough for the world to achieve net zero. The primary reason being base energy mix is not dramatically changing. In next couple years itself all primary energy will have share around **26%**. Though Europe, OECD countries as well as India and China are adopting exponential usage of renewables; but renewables itself may not be enough unless we change the usage to more molecules which can directly be replaced and there decarbonization journey starts.
- **Green Hydrogen economy:** India's role as a global champion for the Energy transition theme on Energy 2021 announced Green Hydrogen purchase obligation (GHPO) under National Hydrogen Energy mission (NHEM) similar to Renewable purchase Obligation (RPO). Intense activities are going on for shifting towards green Hydrogen. MNRE, MOPNG, NITI Ayog are front runners in shaping the vision of honorable Prime Minister of India into an actionable document. All refineries and fertilizer companies must undergo a mandate on Green Hydrogen soon and Numaligarh refinery shall fall under this ambit of national Hydrogen mission.

Green hydrogen is produced using electrolysis from Renewables to split water and is distinct from grey hydrogen which is produced from methane and releases greenhouse gases (GHG) into the atmosphere and blue hydrogen captures those emissions and stores them underground to prevent causing climate change. Green Hydrogen production technology, imperatives, and market dynamics are ushering in H₂ economy in the country. Today Green H₂ costs \$3/kg, If it comes below \$2.0/Kg, it will be actually replacing O&G. Today, global Hydrogen demand is 70 million Ton per annum; 6 million ton per annum in India. If this is to phase out, currently India requires 355 MW for producing 12K ton of Green Hydrogen. By 2050, demand of 28 Million T H₂ would require 1500 TWh of electricity or additional 500GW of green power. So, it is still a distant dream.

- **Renewable basket (primarily Solar and Wind) :** Today, our country's installed power capacity is **383 GW**, out of which 235 GW is fossil fuel based, 46 GW hydro based, 7 GW nuclear based, and a whopping **95 GW** from renewable energy sources where 38 GW is wind energy and 36 GW is solar energy. Share of renewables in the overall installed capacity has grown to

about 25%. India aims to achieve quadrupled number i.e. 450 GW renewable powered energy by 2030 from 175 GW plan by 2022. Transmission network has grown significantly from 2.4 our to 4.4 lakh km circuit in 2021, having one synchronized robust national power grid.

Energy usage from 2010 to 2020, if extrapolated for next ten years without any other energy addition, then CUF (Capacity Utilization Factor) of renewable is much less than thermal power plants i.e. 35% Vs 80% efficiency. In energy terms, this is like adding 180 GW of thermal plant that is not sufficient for a country like India. Land acreage per unit generation for renewable vs thermal is substantial. We cannot imagine renewable power ecosystem without Wind. Solar energy is available from 8am to 4pm, but beyond that wind energy is needed as back. About 500 Billion dollar fund is required for 450GW power. Moreover, India's NDC estimate is close to 2.5 trillion dollars for climate action upto FY 2030.

To accelerate solarization International Solar Alliance (ISA) is working positively towards solarization and OSOWOG (One Solar One World one Grid) concept. ISA is an alliance of 121 countries initiated by India.

- **Natural Gas (NG) -a bridge fuel in energy transition :** Natural Gas as a cleanest fossil fuel, GoI commitment will leapfrog NG consumption from current 155 mmscmd to 620 mmscmd by 2030 to reduce import dependency of crude. Contribution of renewable is not sufficient considering CUF, cyclical and seasonal, as well as for balancing the grid therefore NG is going to be the bridge fuel in energy transition from big users to small retail ones. Every 1 mmscmd of NG use as a substitute of liquid fuel can reduce 2.7 lakh ton of CO₂ emission per annum. As per latest market report, coal to gas switching itself is saving 600 million ton of CO₂ emission over last decade; more than the annual emission of all but the 7 largest global economies. Through Govt's SATAT (Sustainable Alternative Towards Affordable Transportation) programme, entrepreneurs have been asked to produce Bio compressed natural gas infrastructure to facilitate supply and demand. The Ambitious Indradhanush , Urja Ganga pipeline project of PNGRB covers 70% of population.
- **Ethanol blending programme:** Biofuel with 20% Ethanol blending programme with Gasoline has now preponed from FY 2030 to FY 2025 under sustainable alternative futures for India.
- **Electric vehicle mobility demand:** Road transport is one of the sectors of the economy that could be decarbonized in various ways—the two leading options are through either a hydrogen refueling network or an electricity charging network. There are dramatic falls in the price of lithium-ion batteries and steady improvements in battery energy density while charging times have widened the distance and size ranges across which battery electric vehicles (BEVs) can compete with hydrogen fuel-cell.
- **Other noteworthy trendsetter :** 2 billion LED bulbs (highly energy efficient) have been installed replacing the T5 fixtures with eventual price fall from Rs 300 to Rs 70. Deploying supercritical technology for coal fired power generation reduces emission much less than the conventional ones.
- **From User industry perspectives :** Sabic, one of the leaders in

Petrochemicals will build world's first fully operated chemical plant with renewable energy(to reduce emission by 90%) requiring 100 MW power plant that will run entirely on solar power - proof of concept for other leaders to emulate.

- **Recently India has emerged as an important destination investor seeking assets that are aligning with the SDGs (Sustainable Development Goals).** Improvement in disclosure requirement in ESG (Environmental Social Governance), investing and encouraging green instruments will increase funding for the sector. Authorities and regulatory bodies are taking positive steps in this regard. In 2012, SEBI asked the top 100 companies based on market capitalization to issue business responsibility reporting (BRR). Moving ahead from 2022-2023, it would be mandatory for companies to file a new disclosure report the business responsibility and sustainable report (BRSR).
- **IEA's (International Energy Agency) scenarios of future:** Probably we will see peak in global gasoline demand up to 2030, reason being we are changing the way we think about our personal mobility, EV cars widely available are changing nature of fleet, so 2020 will be last decade to see growth in global oil demand after that a plateau, and reduction in demand over time is expected.
- **Post pandemic landscape:** Global CO₂ emissions are back to 2019 level, there are some strong indications of inertia in the system. Shift in geography of consumption, rising urbanization is pushing consumption of our country like the developed ones.
- **Roping up with World Environment Day, 5th June 2021: WED'2021** sees the launch of UN decade of 'Ecosystem Restoration'. This decade is the timeline set to restore the ailing planet. This decade also overlaps with United Nations' action plan to achieve the 17 SDGs, as ecosystem is human lifeline and it underpins all the 17 SDGs.

The **ecosystem restoration undertaking** is having massive plans for restoration of biodiversity and avoid temperature rise. A scientific approach is being developed to combat land degradation and is on track to restore 26 million hectares of degraded land by 2030, the highest target any country has taken! India has taken up a target of additional sink of 2.5 billion Ton of carbon emissions. Forest covers increasing, additional 15000 sq km tree cover.

In our refinery, our GHG inventory is on average 0.65 million Ton per annum. The first step to ecosystem restoration is plantation to abate this emission. 1 tree can absorb 7-13 kg of CO₂ per annum. So going by this, refinery would require 50 million of plantation per annum, or 22000 hectares of land as carbon sink (if 30 Ton CO₂ is absorbed per hectare per annum) which would be equivalent to no less than the size of Guwahati city! So, in the quest to supply net zero carbon emission Carbon Capture Utilization and Storage (CCUS) will be the technology toolbox in achieving low carbon future. Moreover, scale of green hydrogen or renewables is not enough to decarbonize the molecular sector and that's where natural Gas as a bridge fuel and blue hydrogen together with CCUS will become key enabler to become net zero emission. Most of the advanced economies of the world already has CCUS, so no matter what, we must go carbon neutral , the earlier the better, for sustenance of climate change. Journey looks promising and achievable.

Tribute

First NRL MD, Mr. R K Dutta passes away



Mr. R.K. Dutta, the first Managing Director of Numaligarh Refinery Limited (from August 1995 to April 2002) passed away on 19th May 2021 at Kolkata battling COVID-19. He was 75. Mr. Dutta also held the position of CMD of Oil India Limited (from May 2002 till his superannuation in February 2006). His wife Mrs. Julie Dutta predeceased him last year.

Mr. Dutta was considered a colossus in the Oil and Gas Industry in the country and his contribution to the development of the Oil and Gas industry in the North East is unparalleled. He was one of the rare professionals in the Indian oil industry who had

worked, headed and excelled in all the streams of oil industry, i.e., downstream, upstream and midstream. He started his career at Assam Oil Company, Digboi- the birth place of oil industry in India. As a hard core oil marketing professional, he expanded Assam Oil's penetration in retail marketing by building up retail outlets, developing fleet owners, building storage and supply terminals all over the North East India. One of his biggest achievements was introduction of LPG in the army cook houses in 1985. Assam Oil was the first company to introduce this green fuel in the cook houses of the army at a time when the general perception was to use kerosene or fire wood as a kitchen fuel all over the country. Mr. Dutta was able to strengthen and spread the marketing network throughout the North Eastern India and the visibility of its logo of the Charging one horn rhino is seen even today all across the north eastern region. He headed the organization for 11 long years till 1995.

In 1995, Mr. Dutta was handpicked by the Government of India to head the historic 'Assam Accord' refinery now known as Numaligarh Refinery Limited. He not only constructed and commissioned the refinery within its scheduled time, but also created a new company - a PSU which is a glowing example of successful business enterprise in the region. Mr. Dutta, possessed an inherent 'risk-taking capability and also took hard decisions, whenever required, while maintaining the essential qualities of humility and courtesy. He was a humanitarian to the core and maintained the highest standard of honesty and integrity and always led by example.

The State of Assam in particular and the Indian Oil Industry in general is much poorer by his demise.

Superannuation



Mr. Sunil Jain, IRTS, CVO of BPCL who was also CVO of NRL superannuated from on 31st May 2021. He is a 1987 batch IRTS officer who assumed the charge of CVO in NRL w.e.f 11th September 2017. During his tenure, he brought about many systemic improvements in business and processes of closing Vigilance cases. Further, all previous cases of Vigilance were closed following due processes and procedures.

Mr. Jain is a strong believer of Gandhian Philosophy, a voracious reader, has keen interest in Indian economics and is very clear and lucid in his communication. He has the unique ability to get work done in time without putting any pressure on his officers. He enjoys sports and participated in PSPB Inter-unit Tournament in Golf and Lawn tennis besides being a good swimmer.

Due to the prevailing pandemic situation, the farewell function was organized through virtual mode by BPCL wherein Vigilance team of NRL was invited.

New entrants

Emp Name	JG	Designation	DOJ
Mrinal Kumar Goswami	MD	SR.MANAGER (PIPING)	28.04.2021
Ashok Kumar Boruah	ME	CH.MANAGER (PROJ.PIPELINE)	28.04.2021
Abhijit Pegu	M2	OFFICER(CP)	03.05.2021
Syed Kaiumul Hussain	MG	GM(PROJECT PIPELINE)	10.05.2021
Chiranjeeb Sharma	MF	COMPANY SECRETARY	01.06.2021
Anurag Sarma	MB	ASST. MANAGER(PROJECT PLANNING)	01.06.2021
Tutubon Kalita	MD	SM (PROJ PIPELINE)	15.06.2021

Welcome to the NRL Family!

Clean bill of health

(Published in Horizon-the Saturday supplement of The Assam Tribune)

Mrityunjoy Khound
Manager (Operations)

Whenever we feel any unmanageable discomfort, we visit the physician, who then prescribes us the medicines as per his or her varying vision and experience. Here, there is no option left for us but to go by the physician's diagnosis. But, one must be lucky to get hold of a doctor with good diagnostic skill, as well as get an appointment with the same. Recently, I had to see a paediatrician in Guwahati for my daughter. I tried to get an appointment with the one who is quite dependable, but unfortunately failed to get one due to overwhelming number of patients. Out of despair, I consulted another who advised a good number of tests and investigations for my eight-year-old. Given my daughter's health condition, and also not bearing any ill-feeling towards the doctor for suggesting an extensive number of tests- a common trait of demonising doctors owing to a prejudicial belief that they may mislead gullible patients, I went ahead with the prescribed tests.

I was rather worried about the diagnosis that was going to be done-whether it would be precise or a blind guess. However, finally, I managed an appointment with my trusted paediatrician. The specialist doctor, with sharp diagnostic skills, was able to hit the target. Though he suggested medications for three months, my daughter felt better in just about two weeks. However, that may have been possible due to a change in food habits as advised by the doctor. The crux here is: a change in food habits (more veggies and

fruits) worked better than medication, and that was possible because of the right diagnosis.

On and off, I fall prey to throat infection if I take chilled and cold foodstuff. The infection manifests itself in the form of severe cough. This time, when I did not get any relief after using an antiseptic mouthwash, cough syrup and Vitamin C supplements, I resorted to natural treatment. I collected some matured seeds of Acacia concinna (shikakai, or commonly known as monichal) and boiled its outer layer by peeling it off. Boiling it generates enough foam. When lukewarm, I gurgled with it and almost got instant relief.

In another incident, when my mother consulted a specialist doctor in Delhi for her diabetes, the doctor told her that in cases of diabetes, the patient himself or herself is the doctor, and, of course, it is no exaggeration. He suggested the mantra- no fasting and no feasting. Diabetics should have a balanced diet- small meals in larger instalments, and engage in regular physical activities, that can help control the blood sugar level.

Last but not the least, rest is a great energiser and immunity booster. In today's rat-race, people are more target-oriented than they used to be. As a result, heart issues have become a common threat to life, that too at a young age. We must internalise that business has no meaning without health. It is better to go slow, for only the slow and steady wins the race.

The Story of NRL - XIX

This is the last in the series of articles authored by former MD NRL chronicling the journey of NRL since its inception which is also in alignment with his own professional journey in the company



Dipak Chakravarty
Former MD, NRL

I was privileged to assume the charge of Managing Director on 1st April 2011. Till appointment of a new Director (Technical), I continued to discharge the responsibilities of D(T) as well till Shri S.R. Medhi joined as the Director (Technical) in November, 2011. Shri R.K.Singh was then the Chairman of BPCL and NRL.

Besides efficient operation of the Refinery and Marketing activities, implementation of the Wax Project and completion of Duliajan-Numaligarh Gas Pipeline Project and SMTP in all respects were the major activities at that point in time. After implementation of DQUP Project and completion of other related activities, the Refinery operations became steady.

For sustenance and growth of an enterprise and career progression of its employees, it is necessary that the enterprise embark upon new challenges. Identification and implementations of new projects, large or small, must be encouraged for the growth of the organisation. In case of NRL, at that point in time, there was limited scope to take up major value added projects. Addition of new units for up gradation of MS and HSD to BS-V level as statutory projects was the only possibility. Accordingly, De bottlenecking of MS plant and setting up a DHDT Unit was contemplated. Continuing with expansion of Retail Marketing business was not advisable as under recovery increased to an unsustainable level around Rs. 250 Crore per month, primarily due to Govt. policies. Also there was resentment amongst the employees for continuance of Retail Marketing activities. The situation became so critical that we were compelled to look into possibilities of discontinuing with Retail Marketing business by selling /surrendering the established, under construction and planned retail outlets to BPCL. Accordingly, the painful decision of discontinuing with the retail business by selling/surrendering/handing over the operating, under development and planned outlets to BPCL was to be taken. BPCL on the other hand would continue to get the subsidy provided by the Govt. for any under recovery on owning and operating these outlet. It was agreed by BPCL at that stage to hand over the Retail Outlets back to NRL, if there were changes in policies in favour of NRL in the future. The handing over process started in phases in 2012. BPCL, respecting the emotions of NRL associated with the Retail Business, agreed to retain NRL's Logo, Canopy and the signage at the operating outlets. The unavoidable decision of discontinuing with the Retail Marketing activities helped restore erosion in the bottom line, a step that ensured long term sustenance of the organisation. It may be mentioned here that other Private Companies who ventured into the Retail Marketing business also had to close their shutters due to Govt. Policies.

As growth prospects were limited, it was deliberated across the organisation to identify new viable projects. Some projects were identified but were not found to be very attractive. The idea of expansion of the Refinery was also examined. However, due to poor perspective of crude oil availability in the North East, it was examined as to whether low cost expansion of capacity to 4 MMTA only could be taken up. The proposal was not found to be

attractive as the growth prospects were not encouraging. It was at that stage, in June 2011, in a discussion with a few senior officers, a wishful thought emerged to expand the Refinery to 8 MMTA with low sulphur imported crude. It sounded initially as an absurd idea as bringing in crude to Numaligarh was a distant possibility. The idea did not find any support across the organisation. However, it was decided to carry out a preliminary study. Accordingly, the idea was discussed with EIL, who supported the proposal. Subsequently, EIL was appointed to carry out a pre - feasibility study. The advantage in favour was the availability of land and other infrastructure within the Refinery. It was envisaged to bring imported low sulphur crude at a port location in Odisha and to lay a 1400 KM pipeline from Odisha to Numaligarh for transportation of crude. The supply-demand projection scenario of products was not encouraging as it indicated huge surplus of middle distillates in the Northeast. However, it was observed through informal discussions with BPCL marketing group that the products could be absorbed in the BPCL's marketing zone in a cost effective way by laying a product pipeline from Siliguri Marketing Terminal to Patna and beyond. It was also envisaged to supply 1 MMTA HSD to Bangladesh by constructing the earlier proposed pipeline from SMTP to Parbatipur in Bangladesh. Some amount of products could also be sent to Nepal by laying a pipeline from SMTP to a suitable location in Nepal. It thus appeared that the issue of absorption of surplus products could be solved by implementing the above pipeline proposals along with the expansion project. The capacity of the operating Numaligarh-Siliguri pipeline owned and operated by OIL also would need to be enhanced. EIL carried out the Pre-feasibility study considering Hydrocracker, Delayed Coker and FCC configuration for a refining capacity of 8/ 9 MMTA. Due to technical reasons, a Crude Oil terminal and a 1400 KM pipeline from Dhamra Port in Odisha to Numaligarh for supply of 6 MMTA low sulphur imported crude was considered. The study was encouraging as it indicated an investment of around Rs.12,000 Crore in the Refinery with a reasonable IRR of more than 10%. Major problem was to dispose off large volume of Petroleum Coke generated in the process. It was proposed that the coke generated would be transported to Bokajan Cement plant (owned by Cement Corporation of India) by close circuit rakes to generate power by installing environment friendly Boiler with CFB technology. Due to availability of Petroleum Coke and abundant availability of Limestone in the region, the capacity of the Cement Plant could be enhanced by CCI which would help improve the economics of the ailing cement plant. The power generated could be sent back to the Refinery to meet its power requirement after expansion and the surplus power could be supplied to the State Grid. It was a win-win proposal for both NRL and CCI as the entire project would enhance capacities of both Refinery and the Cement Plant and would ensure improved economic viability. The proposal was agreed by CCI and an MoU was entered between NRL and CCI in 2012 where Chairman CCI and MD NRL were the signatories.

Meanwhile, an in-house study was initiated by engaging a retired

OIL pipeline expert to identify a feasible route for laying a 6 MMTPA crude pipeline from Dhamra Port to Numaligarh which should avoid passing through any reserved forest including Kaziranga National Park. The study was completed within a year. It identified the route for laying the Crude Pipeline from Dhamra to Numaligarh and also established the technical feasibility.

Though available land in the Refinery was adequate to install the identified Units, it was thought prudent to acquire some additional land in the periphery of the Refinery and the Marketing Terminal. It may also require to shift the existing Marketing Terminal to a location near Kamargaon or Dergaon area. Activities for acquiring additional land were also initiated.

The feasibility report along with other findings were placed in the NRL Board for approval of the expansion project from 3 MMTPA to 9 MMTPA by processing low sulphur imported crude. The proposal however did not find favour with the Board. It was advised that the study should be carried out with the involvement of both Technical and Marketing team of BPCL. Accordingly, with involvement of BPCL and NRL teams, the feasibility study was revised and placed to the Board. However, due to high investment required and complexity of the proposal it did not find favour. The Board in its wisdom suggested certain measures to further improve the viability. Meanwhile, other promoter of NRL viz. Oil India Ltd and Govt of Assam were approached for participation in the project. After prolonged discussions, both OIL and Govt. of Assam expressed their willingness to participate in the project. Meanwhile, some preliminary activities were taken up by NRL during the years 2012 and 2013. Finally, after various round of revisions in configuration, Market Analysis, Investment Cost and Viability Analysis, Environmental Impact assessment studies etc., the proposal was again submitted to the Board in March 2014. All the promoters, Independent Directors and Director in the Board from MoP&NG supported the proposal. The Board, under the Chairmanship of the then Chairman Shri S. Varadarajan approved the proposal at a cost of Rs. 22,000 Crore and advised to submit the same to BPCL Board as required as per approval process. The Board however advised that the project could be implemented provided Govt. of India agrees to provide a suitable subsidy amount as Viability Gap Funding.

Several round of discussions were held with Bangladesh Govt and Bangladesh Petroleum Corporation regarding construction of the proposed 180 KM long pipe line for transporting 1 MMTPA Diesel to Parbatipur in Bangladesh from Siliguri Marketing Terminal. The cost of the Project was to



Corporate office building

be borne by NRL. Our Ministry of P&NG and Ministry of External Affairs also supported the proposal and took up with Bangladesh Government. Bilateral discussions were held between Bangladesh and Govt. of India where NRL also participated. The project had taken a definitive shape. An MoU was also entered into with Nepal Petroleum Corporation to supply products to Nepal from SMTTP by road/pipeline for sale of the same in Nepal.

The Proposal for construction of the Corporate Office at Guwahati was not approved initially by the Board as the

project cost was high at around Rs. 120 Crore. It was therefore proposed to construct the office building in Phases. The cost of the 1st phase was estimated to be at Rs.57 Crore which was approved by the Board. Immediately, the project was taken up for execution and the foundation stone was laid on 15th April 2011. It was proposed to christen it as 'Energy Tower of Northeast' which would house, besides NRL, other energy companies operating in the Northeast.

It was decided to establish NRL's own infrastructure facilities in Kolkata, Delhi and Guwahati and accordingly, it was proposed to purchase a guest house at Kolkata, an office premise and a guest house in Delhi and also a guest house at Guwahati. The proposal of purchasing the Guesthouse at Kolkata materialised as we could purchase two flats in the newly constructed 'Uttarayan' township in a prominent locality in Kolkata. The other proposals however did not materialise.

To increase housing availability in the Township keeping in view prevailing shortage and future requirement the Township also was needed to be expanded. Additional land adjacent to the existing Township was procured and construction taken up. At that point in time, certain environmental issues were raised by some environment groups which resulted in stopping of the activities.

CSR activities continued with full attention and dedication. The GOI guideline of spending 2% of the net profit on CSR activities was followed. Amongst many activities/projects it was decided to set up 'NRL Football Academy' to promote football amongst the children of the neighbourhood in the age group of 8 to 14 years. The Academy



NRL Football Academy - identifying and nurturing rural talent

was set up under the guidance of SPT Management Group, Bangalore and Assam Football Association. UEFA licensed qualified Coach from Spain were engaged on fulltime basis for all round development of the students.

Notwithstanding the positive developments as brought out above, two major fire incidents occurred during the period. One in April 2012 in the Hydrocracker Unit and the other in May 2013 in the Crude Distillation Unit. Both the fire incidents were of very large dimensions which were experienced for the first time. With immediate actions and involvement of all concerned persons and the well-equipped and efficient Fire and Safety Department, the fires could be brought under control within a short time. The damages caused by the fires however were severe and caused loss of property and production.

There were certain developments at the Management level during the period. Shri S. Varadarajan took over as Chairman of BPCL and NRL in September 2013 after superannuation of Shri R.K. Singh. On attaining the age of superannuation, Shri Nilmoni Bhakta relinquished his position as Director (Finance) in April 2013 and the position was filled by Shri S.K. Barua on 1st May 2013. On my superannuation on 31st March 2014, Shri P. Padmanabhan, took over as the Managing Director on 1st April 2014. Thus a new Management team assumed charge of NRL with major Challenges for sustenance and growth of the Organisation in general and obtaining all required approvals, and implementation of the dream project 'Expansion of Numaligarh Refinery to 9 MMTA, in particular.

With best wishes to the NRL Management, all employees and others who are associated with NRL activities, I am penning off the series on the 'Story of NRL'. My thanks to NRL Management for allowing

publication of the series in the prestigious quarterly magazine Rodali on a regular basis since July 2014. My special thanks to Ms. Madhuchanda Adhikari for her support. In 2011, a column 'In Touch With' was added to encourage former employees to share their experiences in NRL. This space was occupied by me for past 7 years since my retirement. I would like to request my successors and colleagues to contribute in this space in Rodali, their experiences and thoughts pertaining to the growth story of NRL.

I do not know as to how vividly the articles covered the story of NRL's birth, growth and sustenance. It was however a sincere effort on my part to recall and present important activities, troubled times, good times, developments over the years, contributions of individuals and collectives as much as possible and avoided reproducing any anecdotes etc. As I have relied mostly on my memory, some inadvertent factual errors with regard to specific dates or periods and figures etc. may have cropped up. My apologies for the same.

I do hope, the NRL Management will take appropriate steps to preserve the series for future without letting it sleep in the archive in the pages of Rodali. Much may have been left uncovered on the past and present of NRL.

I enjoyed writing the series as I was physically and emotionally involved with NRL since its inception in October, 1987 till my retirement in March 2014. I am signing off here with the hope that the series served the intended purpose and the readers enjoyed reading it.

LONG LIVE NRL !

Concluded



DNest Club Day organized amidst fun & frolic

The first ever 'DNest Club Day' since constitution of the Club was organized on 10th April, 2021 in an evening get-together of all DNest members and their families at Taj Vivanta. NRL Managing Director Mr. SK Barua and Mrs Nilakshi Barua graced the occasion by ceremonial lighting of the lamp. Club President Mr. Hemanta Kr Sarmah welcomed the dignitaries and the DNestians in his welcome note. In his speech, he congratulated each and every member of the Club for their active participation in every club activity which helped the club grow in such a short

time. A formal cake-cutting ceremony was also organized to mark the occasion. Members and guests were enthralled by some splendid in-house performances by the talented children of members which included Xatriya dance, Sitar rendition and modern dance. This was followed by some foot tapping numbers from the band 'Yuva.' The best part of the evening was the DJ session, where members danced the night away. The evening ended with a delicious spread offered by Taj.

Glimpses of the 'DNest Club Day' celebrations



Ceremonial Lamp Lighting



Cake cutting



Address by DNest Club President



In-house performers



Posing in front of the DNest Tree

13th Kaliyani Open Tennis Tournament

The 13th Kaliyani Open Tennis 2021 (All Assam Junior Ranking Tennis Championship) got under way at the Kaliyani Club premises on 8th of April 2021. The tournament was declared open by Director (Technical), NRL Mr. B J Phukan in a well-attended inauguration ceremony.

Speaking on the occasion, he emphasized on the need for inculcating sportsman spirit for all round development of youngsters. Around 130 players from across the state participated in various events of the meet.



Bachelor's Nite Celebration

Kaliyani Club along with bachelors and bachelorette fraternity celebrated Bachelors Nite 2021, 'EXUBERANCE' on 10th April 2021. The evening started with the inauguration of the wall magazine by Club Vice President which featured articles, poems and short stories contributed by bachelors and bachelorette. The same was followed by interesting party games.

The cultural evening started with a modern dance performance by Prince Zeme & Niki Sangma. The same was followed by a fashion show themed 'Chisel Ashore' from Guwahati.

The major attraction of the evening was a musical performance by 'Underground Authority' - an alternative rock / rap rock band from Kolkata. The band mesmerized the crowd with their superb performance. The same was followed by performance by DJ Tony. The programme concluded with dinner.



Rongali Bihu Celebration

Rongali Bihu is one of the most important festivals of Assam. It is celebrated in mid-April. It marks the beginning of the Assamese New Year as per the Hindu calendar.

Rongali Bihu is a celebration of life. As the people of Assam ring in their New Year and indulge in singing, dancing, and merrymaking.

Kaliyani Club too celebrated Rongali Bihu on 13th April 2021 with fervour and enthusiasm. Kalyanites enjoyed the evening with scrumptious Assamese Jalpan. Traditional Bihu Husori performance by 'Friendship Club' of Koliabor entertained and mesmerized the members of Kaliyani Club.



Club News - **Rangchali Club**

Ladies tennis ball cricket tournament

For the first time, Rangchali Club organized ladies tennis ball cricket tournament from 5th to 8th April 2021 at NRL Main playground with three teams participating in the tournament.



Rangchali Club Seven a side Ladies Tennis Ball Cricket Tournament

Rangchali Club Volleyball Tournament



Rangchali Club organized Volleyball tournament from 10th to 11th April 2021 at NRL Township Main Playground.



Rangchali Club volleyball tournament

Rangali Bihu workshop

Rangchali Club organized Rangali Bihu workshop from 1st to 7th April 2021 for the students of Club members under well-known choreographers Santumoni Sharma, Nayana Bharali (Lataxil Bihu Kuwari 2018, Rang Basanta Rani 2019) and Jiten Bora (Many students joined the workshop to make it a grand success.



Rangchali Club Rangali Bihu Workshop

DPS News

Pride of DPS

Twelve students of Delhi Public School, Numaligarh brought laurels to themselves and their school by setting the benchmark and securing 0.1% Certificate of Merit in their AISSE (Session 2019-2020). The following students have been awarded the 0.1% Certificate of Merit:

- | | |
|------------------------|-----------------------------|
| 1. Bibhusita Kakati | 8. Subhanga Bhushan Goswami |
| 2. Elena Bardalai | 9. Tanisha Phukan |
| 3. Jyotishman Bharali | 10. Uddhav Saikia |
| 4. Lyssa Jerang | 11. Abhilekh Hati Baruah |
| 5. Mayukh Dipta Bora | 12. Anisha Agarwalla |
| 6. Nabanshu Neer Gogoi | |
| 7. Pratham Todi | |

BLESSING CEREMONY

'May the road rise up to meet you, may the wind be ever at your back. May the sun shine warm upon your face and the rain fall softly on your fields. And until we meet again, may God hold you in the hollow of his hands.' - Irish Blessing



The school echoed with blessings on the morning of April 6, 2021, when the entire DPSN family came together to bid adieu to our beloved Class XII batch of 2020-21 and bless them in their future endeavors. It was a morning filled with a plethora of emotions for each and every one



present at the school basketball court to witness the grand event. The entire event was organized by the students of Class XI with great enthusiasm and hard work. The day was a fiesta, devoted to the 14 years spent together with



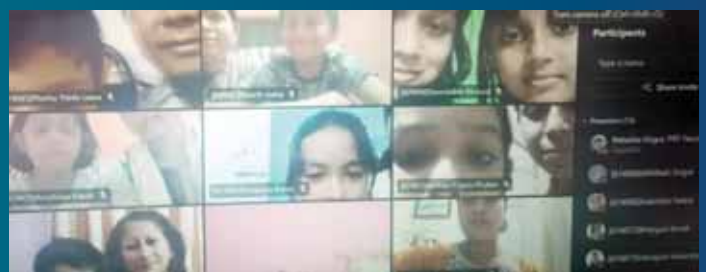
friends and teachers to reminisce the joyous moments of their school life.

The day ended with a sumptuous feast and lot of memories to be cherished in the future.



Orientation Programme

Delhi Public School, Numaligarh organized an Online Orientation Programme from Nursery to Class X on 24th April 2021 for the new set of parents to familiarize them with the curriculum, rules and regulations, protocols to be followed during online classes and the teaching methodologies.



Workshop on Strategies for Pre- Primary Teaching

Ratna Sagar organized a two days workshop on Strategies for Pre- Primary Teaching at Delhi Public School, Numaligarh. The workshop was conducted on 8th and 9th April 2021 by resource person Ms Shreya Lalwani. The main highlight of the workshop was Phonics Drilling which should be introduced from the Pre- Primary Stage. The resource person threw light upon the new National

Education Policy, multiple aspects of handling a child, making learning more effective by incorporating creative activities related to different topics. Teachers learnt about innovative ways of effectively communicating with students and whole heartedly participated in the activities done during the workshop and enjoyed the various sessions.



Online Entrance Exam

Delhi Public School Numaligarh achieved yet another milestone by endorsing the new normal way of education through the introduction of the Online Admissions for class XI for the session.

The obstacles created by the ongoing COVID-19 pandemic

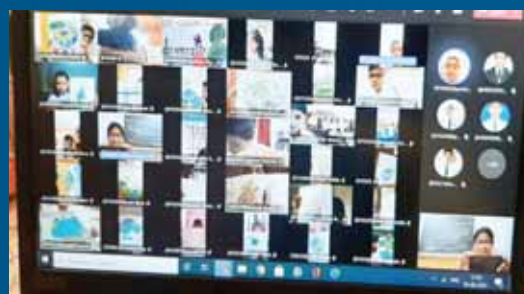
failed to deter the spirit of achievement as the school started a new technological journey by conducting the entire admission procedure for Class XI, virtually. A panel comprising of twelve teachers working under the guidance of Principal, Mr U.C. Harbola, left no stone unturned to ensure that all the 250 aspirants were individually assessed and the deserving

candidate received the rightful position. The admission for all the 250 aspirants, in the three different streams, was held in two rounds- Personal Interview and Online Entrance Examination. Through Google Meet application software, students were able to attempt the entire procedure of interaction with the panel members as well as the online test, virtually from the safety and comfort of their homes. The school created a well-defined structure and a core team for this online examination and deputed invigilators to monitor students for the smooth functioning of the exam. The entire procedure was completed in a span of fourteen days.



Art and Poster Competition

On the occasion of World Environment Day on 5th June 2021, an Art and Poster Competition was organized for Classes- III to X. The theme for the competitions were – ‘Save the Environment’ (Classes III to V) and ‘Celebrate Biodiversity’ (Classes V-VII). The students participated eagerly through MS Teams for the online competition.



Celebration of International Yoga Day

International Yoga Day was celebrated online on 21st June 2021 with students doing yoga at their homes. The students participated virtually showing the different *asanas* and *Surya Namaskar* as per the protocol.



Webinar on Experiential Learning

Delhi Public School, Numaligarh organized a webinar for the teaching fraternity on Experiential Learning on 26th June, 2021. Shri G. Balasubramanian, Former Director (Academic), CBSE was the resource person to enlighten the teachers with his amazing presentation. A total of about 56 teachers attended the meeting.

Mr. U C Harbola, Principal, Delhi Public School, Numaligarh started the meeting with a welcome address. The session was extremely interesting and interactive, where the teachers came to know the core of Experiential Learning and how it has a major role to play in the field of education in future. Mr. Balasubramanian used numerous examples to explain the concept in the clearest way possible.

At the end, Mrs. Lonu Gogoi, Headmistress, Delhi Public School, Numaligarh delivered the vote of thanks. The session benefitted the teachers and the school look forward for more enlightening webinars/ workshops with Shri G. Balasubramanian in person when everything goes back to normal.



Nutrition in Kidney Disease

Ranjan Kalita
Dietician

The main function of the kidney is to maintain the balance of fluids, electrolytes, and organic solutes. The majority of the solute load consists of nitrogenous wastes, primarily the end products of protein metabolism. Urea predominates in amount, depending on the protein content of the diet. The manifestations of renal disease are significant. They can be ordered by degree of severity: (1) Kidney Stones, (2) Acute Kidney Injury (AKI), (3) Chronic Kidney Disease (CKD), and (4) End-Stage Renal disease (ESRD). Objectives of nutritional care depend on the abnormality being treated.

- 1) Stones may be of different types. Most common is oxalate stone. Common foods to avoid for a Low-Oxalate Diet are Spinach, Strawberries, Chocolate, Wheat bran, whole-grain wheat products, Nuts (almonds, peanuts, or pecans), Beets Tea (green, black, iced), High doses of turmeric.
- 2) Acute Kidney Injury (AKI), formerly acute renal failure (ARF), is characterized by a sudden reduction in glomerular filtration rate (GFR), the amount of filtrate per unit in the nephrons, and altered ability of the Kidney to excrete the daily production of metabolic waste. Nutritional needs can be classified on the basis of different amount of Nutrient needs. Major nutrient like Protein 0.8-1 g/kg of ideal body weight from sources like Chicken, fish, egg. Energy 30-40 kcal/kg of body weight approximately 1200kcal in a day. Common source of energy is carbohydrate obtained from cereal foods. Potassium 30-50 mEq/day avoiding major food as Banana. Sodium 20-40 mEq/day i.e. 1tsp in a day which includes excessively cutting down of common salt consumption with major meal in a day.
- 3) Many forms of kidney disease are characterized by a slow, steady decline in renal function and lead to renal failure in some patients, whereas other patients have a benign course without loss of renal function. It is unclear

why some patients remain stable with chronic kidney disease (CKD) for many months to years, whereas others progress rapidly to renal failure and dialysis. Recommended dietary protein level for CKD patients has changed over time. Historically, these patients received diets high in protein (up to 1.5 g/kg/day) in an attempt to increase serum albumin and prevent protein malnutrition. Energy intake should be approximately 35 kcal/kg/day for adults to spare protein for tissue repair and maintenance. In patients who are significantly overweight, some adjustment should be made to normalize requirements.

SOME TIPS FOR DIALYSIS PATIENT

Limit dairy products to one serving (100ml) per day. Limit sodium to 2,000–3,000 mg per day. Avoid all convenience foods; no salt in cooking. Limit fruits, vegetables, and juices. Limit water and other fluids as needed to prevent fluid gains of more than 2.0 kg (4.5 lb.) between treatments. Do not limit fluid if sodium is not restricted. Leach all the vegetables with warm water before cooking. Leaching is the process of boiling raw vegetables with warm water in medium flame at least for 15 minutes and then soak the excess water to remove the excess sodium and potassium content of the vegetables. Avoid all high-potassium fruits and vegetables. Consume only one to two cups of fluid per day. Choose low-salt foods. Do not use salt or salt substitute. Use fats and sugars for extra calories. If the power is off for a day, foods in refrigerator should be eaten first. Patients should eat food from the freezer while they still have ice crystals in the center.

Reference:

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- b. WWW.NIN.CO.IN

Picture speak



Celebration of 23rd Hospital Foundation Day



Covid Vaccination at Kunjabon

OIL reports significant increase in Q4, 2020-21 EBITDA at ₹ 1754.83 crore as compared to EBITDA in Q4 2019-20

Oil India Board in its 522nd Board Meeting held on 21st June, 2021 approved the Q4 and FY 2020-21 results. Highlights and financial performance of the Q4 and FY 2020-21 are as follows:

A. Highlights:

- The Company has reported significant increase in Q4 2020-21 EBITDA at ₹ 1754.83 crore as compared to negative EBITDA in Q4 2019-20 due to better oil price realization.
- Average crude oil price realisation during Q4 FY2020-21 was USD 59.80/bbl which was higher by 14.61% as compared to crude oil price realisation of US\$ 52.18/BBL during Q4 FY2019-20.
- Average Crude Oil price realisation in FY 2020-21 is US\$ 43.98 /BBL vis-à-vis US\$ 60.75/BBL during FY2019-20, decreased by 27.61% due to demand disruption caused by COVID.
- Average natural gas price realisation during FY 2020-21 decreased by US\$ 1.37 / MMBTU to US\$ 2.09/MMBTU as compared to US\$ 3.46/MMBTU during FY 2019-20.
- Crude Oil production for FY2020-21 is 2.964 MMT which is 5.42% lower than the crude oil production of 3.134 MMT during FY2019-20. Further, production for Q4 2020-21 is 5.28% lower at 0.718 MMT as compared to 0.758 MMT in Q4 2019-20.
- Natural gas production during FY2020-21 is lower at 2642 MMSCM as compared to 2801 MMSCM during FY2019-20, decrease of 5.68%.
- Profit After Tax (PAT) for FY2020-21 is ₹1,741.59 crore as compared to PAT of ₹ 2,584.06 crore for FY2019-20.
- Board of OIL has recommended a final dividend of ₹ 1.50 per share for 2020-21. Company had earlier paid interim dividend of ₹ 3.50 per share in February'2021.
- The Company has acquired additional 54.16% ownership interest in M/s Numaligarh Refinery Limited (NRL) on 26th March, 2021 for total cash consideration of ₹ 8,676 crore increasing the equity stake in NRL to 80.16% as on 31.03.2021 including 10.53% shares held on behalf of Govt. of Assam. NRL is now a subsidiary of OIL.
- The Company has made investments of over ₹ 12,000 crore including ₹ 8,676 crore in NRL. During the year two major

infrastructure projects, Secondary Tank Farm at Madhuban and Gas Compressor Station at Makum were dedicated to the Nation by Hon'ble Prime Minister of India, Shri Narendra Modi.

- During the year, the Company acquired 4 blocks in OALP Round-V increasing its acreage by 13%.
- The Company achieved significant progress in the Exploration and Drilling activity and is the first operator to complete seismic acquisition in a block of OALP Round-I.
- There was a blowout incident in a gas well in Baghjan Oilfield during workover operations in May, 2020. The blowout was successfully controlled.

B. Performance:

Details	Unit	Q4 2020-21	Q4 2019-20	2020-21	2019-20
A. Financial					
Total Income	₹ Crore	3,909.61	3,583.72	10,561.45	13,648.71
Turnover	₹ Crore	2,579.50	2,589.56	8,618.38	12,128.52
Net Profit	₹ Crore	847.56	925.65	1,741.59	2,584.06
Earnings per share	₹	7.82	8.54	16.06	23.83
EBITDA	₹ Crore	1,755	(107)	3,208	4,111
EBITDA Margin	%age	44.89%	(2.99)%	30.38%	30.12%
B. Crude oil Price					
Crude Oil Price	USD/Barrel	59.80	52.18	43.98	60.75
Realization	₹/Barrel	4,359	3,777	3,265	4,307
C. Production					
Crude oil*	MMT	0.718	0.758	2.964	3.134
Natural Gas*	BCM	0.649	0.645	2.642	2.801
Oil + Oil equivalent	MMTOE	1.367	1.403	5.606	5.935
D. Sales					
Crude oil	MMT	0.704	0.748	2.884	3.062
Natural Gas	BCM	0.555	0.531	2.269	2.403
Oil + Oil equivalent	MMTOE	1.259	1.279	5.153	5.465

*includes OIL's production in joint ventures.

OIL Hospital Duliajan Continues its Fight against Second Wave of COVID-19

As India faces an escalating surge of Covid-19 cases across the country in its second wave of infections, OIL India Hospital continues to play a proactive role in tackling the crisis. While ensuring continuous supply of energy to the nation, OIL has directed its hospital under OIL Medical department to fight against Covid-19 on a war footing scale. OIL hospital has dedicated Covid-19 Testing Centres, Covid Care Centre, Quarantine centre, 24x7 OIL Covid-19 Helpline and regular Covid-19 Vaccination as per the Government

directives to keep a check on the spreading of the infections in Duliajan and nearby areas.

Covid-19 Testing Centres:

As Covid-19 cases are expected to rise in Duliajan and its nearby areas, OIL hospital has stepped up its Covid-19 testing facility at OIL Hospital Duliajan to handle increasing cases of Covid-19 infection. As on 31st May 2021 since the onset of the second of Covid-19 infections, the OIL Hospital

testing centre at Duliajan has conducted over 2800 tests approximately with an average of 100 tests per day.



(Left) A Covid-19 Testing Centre setup at OIL Hospital Duliajan; (Right) Covid-19 testing in progress

Covid-19 Care Centre (CCC) and Covid-19 Quarantine Centre:

Likewise in the first wave, OIL Hospital has set up a dedicated Covid Care Centre with a team of doctors, nurses, paramedics and sanitation workers which is operational from 21st May 2021. This is a 40 bedded capacity out of which 25 beds have dedicated oxygen facility on 24x7 basis. The CCC also provides necessary treatment to Covid-19 patients with mild to moderate symptoms. Currently, this centre has admitted 40 Covid-19 patients undergoing treatments under the supervision of a team of doctors, nurses and paramedics. Apart from the CCC, OIL has also earmarked a quarantine centre at its South Bank campus for asymptomatic Covid-19 positive patients.

Moreover, Oil-Indians who are detected Covid-19 positive are permitted to remain under strict home isolation as per government guidelines in their company provided accommodation/residence subject to fulfilling certain criteria for home isolation. Such patients are monitored daily and provided necessary treatment guidelines over telephone by a dedicated team of doctors from OIL Hospital. In addition to this, OIL is also providing “24x7 OIL Covid-19 Helpline” by doctors of OIL Hospital who attends telephone calls and provides counselling and helpful information regarding Covid-19.



A 40 bed dedicated Covid-19 Care Centre setup at OIL Hospital Duliajan

Covid-19 Vaccination Drives:

In line with the directives issued by the Ministry of Health and Family Welfare (MoH&FW), Medical department, OIL Duliajan initiated the Covid-19 vaccination drive in Duliajan from 5th February 2021. The vaccination drive in Duliajan was started with the immunisation of healthcare and frontline workers of OIL hospital as per the guidelines of the MoH&FW. Subsequently, OIL Hospital Duliajan took the mammoth mission of vaccinating all the officers, employees and contractual workers of OIL FHQ Duliajan as well as from its Moran and Digboi offices.

OIL Hospital, Duliajan in collaboration with Rotary Club has also vaccinated approximately 30 persons with disabilities on 2nd of June 2021. As on 31st May 2021, OIL Hospital Duliajan has successfully vaccinated over 14135 beneficiaries (First Dose:10568, Second dose: 3567).



OIL supports augmentation of health infrastructure due to surge of second wave of COVID 19 pandemic



OIL also contributed towards various state governments to fight against the pandemic. OIL has invested approximately Rs. 52 crore (inclusive of Rs. 5 crore to CM Relief Fund, Assam) towards augmentation of health infrastructure during the second wave of the pandemic. OIL contributed Rs. 5 crore under CSR to Chief Minister's Relief Fund, Assam on 27th May 2021. The amount also includes voluntary contribution of one day's salary by the employees of the company to support the government in combating this crisis.

The cheque was ceremoniously handed over to Dr. Himanta Biswa Sarma, Hon'ble Chief Minister of Assam by Shri Sushil Chandra Mishra, Chairman & Managing Director, OIL in presence of Shri Chandra Mohan Patowary, Minister, Industries and Commerce, Smt. Ajanta Neog, Minister,

Finance, Shri Atul Bora, Minister, Agriculture and Veterinary, Shri S K Barua, Managing Director, NRL, Shri Harish Madhav, Director (Finance), OIL, Shri Prasanta Borkakoty, RCE, OIL and other senior officials of OIL and Government of Assam at the Assam Administrative Staff College, Guwahati.

OIL EXTENDS FINANCIAL SUPPORT IN PROVIDING

- Two Iced Line Refrigerator to Govt of Assam for storing vaccines
- 35 nos Deep Freezers to Govt of Assam for storing vaccines
- Support to COVID Care Centre in Tinsukia District, Assam
- Support in setting up of a 100 bedded COVID Care Centre at Duliajan, Dibrugarh District, Assam
- Support in setting up of 300 bedded COVID hospital by DRDO at Sarusajai Stadium, Guwahati
- Support for installation of PSA oxygen plant in Goalpara Aspirational District in Assam
- Placement of 40 KL Liquid Nitrogen tank at Assam Medical College, Dibrugarh, Assam
- Supply of 500 nos of Oxygen concentrators to Govt. of Assam
- Supply of additional 1,000 nos Oxygen concentrators at various locations
- Supply of 20 nos. of Oxygen concentrators to Jodhpur (10) and Jaisalmer (10) District Authorities in Rajasthan
- Three oil free oxygen boosters for refilling oxygen cylinders at district hospital at Namsai, Changlang and Itanagar in Arunachal Pradesh
- Supply and shipment of 3,000 nos of Oxygen cylinders in various location\
- Setting up of temporary 50 bedded COVID healthcare facility in Noida, UP
- Supply, installation and commissioning of 9 nos of PSA Oxygen plants in Bihar (5), Uttar Pradesh (2), Nagaland (1) and Arunachal Pradesh (1)
- 3 nos. of Bowsers/tankers to Jaisalmer District Authorities for supplying of oxygen, 25 Oxygen concentrators to District Magistrate of Jodhpur and Jaisalmer District out of which, a few have been provided to BSF.

In photos



1. OIL helped to set up a 300-bed COVID Care Hospital at Sarusajai Stadium. The annex to Guwahati Medical College & Hospital, built by DRDO, was inaugurated by Dr. Himanta Biswa Sarma (Hon'ble CM, Assam) with Shri Keshab Mahanta (Minister, H&FW) & others.
2. Oil India Executive Employees Association (OIEEA) donates 500 PPE Kits, 4,000 gloves, 2,500 N95 masks, 10,000 3-layer masks, 1,500 face shields and 1,500 numbers of 250ml sanitizer bottles to the Deputy Commissioner, Dibrugarh district to help fight COVID-19.
3. OIL Corporate Office at Noida successfully completes the second COVID-19 vaccination drive. The outreach was organized in association with Apollo Hospitals and aimed at covering maximum working staff at Corporate office.
4. As part of CSR, OIL extended help in setting up the COVID Care Centre at Duliajan. OIL provided 100 beds, pillows, blankets, mosquito nets/repellants, toiletries & hygiene kits. It will be run by the Health Dept & District Administration of Dibrugarh.
5. OIL Hospital, Duliajan arranged for COVID-19 vaccination shots for people with disabilities. About 80 people got their shots at the Rotary Club of Duliajan Vaccination Centre on 2nd June 2021.

Hon'ble Chief Minister of Assam visits BCPL Petrochemical Complex

Dr. Himanta Biswa Sarma, Hon'ble Chief Minister of Assam along with Shri Rameswar Teli, Hon'ble Union Minister of State, Ministry of Food Processing Industries, Shri Atul Bora, Hon'ble Minister Agriculture, Horticulture, Animal Husbandry & Veterinary etc., Assam, Shri Bimal Bora, Hon'ble Minister of Sports & Youth Welfare, Cultural Affairs, Power, Tourism, Assam, Shri Sanjoy Kishan, Hon'ble Minister of

Labour & Employment and Tea Welfare, Assam visited BCPL Petrochemical Complex at Dibrugarh on 20th June 2021.

They were accompanied by senior officials from Government of Assam and District Administration.

Dr. Himanta Biswa Sarma reviewed the present status of BCPL, issues/concerns & future growth strategy of the company.



Shri Reep Hazarika, MD BCPL welcomes Honourable Chief Minister of Assam



Dr. Himanta Biswa Sarma at Product Transfer and Despatch Unit of BCPL

BCPL contributes to CM Relief Fund towards COVID-19 Pandemic



BCPL extended financial assistance of Rs.1 crore to Chief Minister's Relief Fund in the ongoing fight against COVID-19. The contribution was presented to Dr. Himanta Biswa Sarma, Hon'ble Chief Minister of Assam by Shri Reep Hazarika, Managing Director, BCPL in the presence of Shri Chandra Mohan Patowary, Minister of Industries and Commerce and also a team of senior officials of BCPL on 29th May 2021 at Assam Secretariat.

Employees of BCPL also contributed their one day's salary to CM's Relief Fund of Assam.

Picture speak



Tree Plantation during World Environment Day 2021 celebrated on 5th June 2021

(‘रोदालि’ गृह-पत्रिका के इस संस्करण से ‘राजभाषा पृष्ठ’ में एक नया स्तंभ शुरू करने जा रहे हैं - ‘आइये कुछ हिंदी शब्दों की खोज करें’ जिसमें हिंदी के कुछ शब्दों से परिचित कराया जाएगा।)

आइये कुछ हिंदी शब्दों की खोज करें

1. आपाधापी

आजकल की जीवन शैली के लिए हिंदी/उर्दू में एक शब्द है आपाधापी। यह शब्द दो शब्दों से बना है ‘आप’ और ‘धाप’। ‘आप’ का अर्थ है ‘आत्म’ या ‘स्वयं’ और ‘धाप’ का अर्थ है ‘भागना’, ‘दौड़ना’। यह दो शब्द जोड़कर ‘आपाधापी’ का अर्थ हुआ है अपने काम की चिंता में भागदौड़, खींचतान, काम की चिंता, व्यर्थ की भाग दौड़ (Every person rushing for himself)

‘आपाधापी’ शब्द का प्रयोग एक कविता में देखें -

जीवन की आपाधापी में कब वक्त मिला

कुछ देर कहीं पर बैठ कभी यह सोच सकूँ,

जो किया, कहा, माना उसमें क्या बुरा भला ।

(डॉ. हरिवंशराय बच्चन)

2. कुतका

‘कुतका’ लकड़ी की खूँटी को कहा जाता है जो घर के बाहर लगी रहती थी। उसपर गंदे कपड़े लटकाए जाते थे। धोबी उस ‘कुतके’ से गंदे कपड़े उठाकर घाट पर ले जाता और कपड़े धोने के बाद

धुले कपड़े उसी ‘कुतके’ पर टोंगकर चला जाता। इसलिए यह कहावत बनी की ‘धोबी का कुतका ना घर का ना घाट का।

कालांतर में यही ‘कुतके’ शब्द को लोगों ने ‘कुत्ते’ में बदल दिया और कहने लगे ‘धोबी का कुत्ता ना घर का ना घाट का।’ जबकि बेचारे कुत्ते का इसमें कोई रोल ही नहीं है, वो तो धोबी के साथ घर में भी रहता है और घाट पर भी जाता है।

3. रफू-चक्कर होना

इसमें ‘रफू’ शब्द फारसी है जिसका अर्थ फटे वस्त्र को धागे से जोड़ना, बुनना है, जिससे किसी छेद को छुपाया जा सके। ‘चक्कर’ शब्द संस्कृत ‘चक्र’ का तद्भव रूप है। जिसका अर्थ है वृत्ताकार, गोल, घुमावदार।

जिस तरह कोई दर्जी फटे वस्त्र के छेद को धागे से बुनकर कलात्मक रूप से मिटा देता है, तब वह वस्त्र नया रूप धारण करके नजर आता है कि वह कभी फटा ही नहीं था। इसी तरह संकट की घड़ी में मनुष्य वहां से रफू चक्कर हो जाता है अर्थात् लोगों की नजरों से गायब हो जाता है।

- हिंदी अनुभाग

नफरत-ए-इश्क

- ऐश्वर्य बाम्मिडि

अधिकारी, सिविल अनुक्षण



जो उजड़ जाए मेरे फूलों का बाग,
तो फिर खुशबू दबी तेरे किताबों में क्यों हैं ?
जो कह दिया मैंने कि भूल जा मुझे,
तो फिर मेरे एहसास तेरे ख्वाबों में क्यों हैं ?
जो अनगिनत रंजिशें हैं हम दोनों के दरमियान,
तो फिर इन रंजिशों से ये हमदर्दी क्यों हैं ?
क्यों दूर होके भी तू इतनी पास है ...
क्यों रंजिशों में भी वफाओं का एहसास है ?
क्यों खफा तेरी नजरों में, मेरी नजरों का
मिलन है जरूरी ?

क्यों मेरे न होने पे तेरी इंतजार हो जाती है अधूरी ...
खफ़ा तेरी इन जज्बातों में तुझे मेरी तालाश क्यों है,
खफ़ा है तो खफ़ा रह, दिल तोड़ तू फिर यूँ निराश क्यों है?
जो कुचल मुझे बर्बाद कर दे वो, वो खातून-ए-दर्द तू है,
अगर तू वो है तो फिर तेरा होना ऐ जाज़-ए-दर्द क्यों है ?
जो पुछा न कभी सवाल मैं,
तू वो जवाब क्यों है ?
जो बर्दाश्त न कर पाऊँ उन नफरतों का सार है तू,
तो फिर इन नफरतों में भी कम्बक्त ये
नफरत-ए-इश्क क्यों है ?

নুমলীগড় শোধানাগাৰ শাখা সাহিত্য সভাৰ নৱনিৰ্মিত সভা গৃহ 'অৱেষন' উদ্বোধন

নুমলীগড় শোধানাগাৰৰ পৰিচালন সঞ্চালক শ্ৰীযুত সৌমেন্দ্ৰ কুমাৰ বৰুৱাদেৱে নুমলীগড় শোধানাগাৰ শাখা সাহিত্য সভাৰ নৱনিৰ্মিত সুসজ্জিত সভা গৃহ 'অৱেষন' উদ্বোধন কৰে। উক্ত অনুষ্ঠানত উপস্থিত থাকে নুমলীগড় শোধানাগাৰৰ কাৰিকৰী সঞ্চালক শ্ৰীযুত ভাস্কৰজ্যোতি ফুকন, বিত্ত সঞ্চালক শ্ৰীযুত ইন্দ্ৰণীল মিত্ৰ, শোধানাগাৰৰ ভালে সংখ্যক বিষয়া-কৰ্মচাৰী আৰু সভাৰ সদস্য-সদস্যা।

সভা গৃহটোৰ নাম 'অৱেষন' নামেৰে নামাকৰণ কৰা হৈছে, য'ত প্ৰাচীন অসমৰ চাৰিখন পীঠ ক্ৰমে বত্ৰপীঠ, কামপীঠ, স্বৰ্ণপীঠ আৰু সৌম্যপীঠৰ কৃষ্টি-সংস্কৃতিক প্ৰতিফলিত কৰি প্ৰচাৰ আৰু প্ৰদৰ্শনৰ দিহা কৰা হৈছে। ইয়াৰোপৰি কোঠাৰ বেৰসমূহত অসমৰ বাবেৰহণীয়া জনগোষ্ঠী সমূহৰ গামোচাৰ চানেকীবোৰ দাঙি ধৰিবলৈ প্ৰয়াস কৰা হৈছে। সভাগৃহটোত অসম সাহিত্য সভাৰ প্ৰাক্তন সভাপতি সকলৰ প্ৰতিচ্ছবি সুন্দৰ ভাৱে এক বিন্যাসত সজাই ৰখাৰ লগতে অসমৰ আপুৰুগীয়া সম্পদ যেনে- হেংদাং, জাকৈ, খালৈ,

চেৰেকী, নাঙল, জুৱলী, বিভিন্ন জাপি আদি সজাই ৰখা হৈছে। এটি সৰু পুথিভঁৰালো কোঠাটোত সন্নিবিষ্ট কৰা হৈছে।



জ্যোতি সংগীত আৰু কবিতা আবৃত্তি প্ৰতিযোগিতা

নুমলীগড় শোধানাগাৰ শাখা সাহিত্য সভাৰ উদ্যোগত সুন্দৰৰ পূজাৰী ৰূপকোঁৱৰ জ্যোতিপ্ৰসাদ আগৰৱালাদেৱৰ ৭০তম মৃত্যু বাৰ্ষিকী (শিল্পী দিৱস) উপলক্ষে অনলাইন যোগে গোলাঘাট জিলা ভিত্তিত জ্যোতি সংগীত আৰু কবিতা আবৃত্তি প্ৰতিযোগিতাৰ আয়োজন আৰু বঁটা প্ৰদান অনুষ্ঠান অনুষ্ঠিত হৈ যায়।



দীননাথ পঞ্চানন সোঁৱৰণী শৈক্ষিক কৃতিত্ব বঁটা

নুমলীগড় শোধানাগাৰ শাখা সাহিত্য সভাই প্ৰতি বছৰে হাইস্কুল শিক্ষান্ত পৰীক্ষাত অসমীয়া বিষয়ত গোলাঘাট জিলাৰ ভিতৰত সৰ্বোচ্চ নম্বৰ লাভ কৰাৰ বাবে প্ৰদান কৰি অহা দীননাথ পঞ্চানন সোঁৱৰণী শৈক্ষিক কৃতিত্ব বঁটা এইবাৰ ছাত্ৰী নীহাৰিকা ভড়ালীক (৯৯%) তেখেতৰ নিজ বাসগৃহ, গোলাঘাটত প্ৰদান কৰা হয়।



ড্ৰামামাণ অভিনন্দন অনুষ্ঠান

নুমলীগড় শোধানাগাৰ শাখা সাহিত্য সভাই বিগত বৰ্ষসমূহৰ দৰে এইবাৰো কৃতি শিক্ষাৰ্থীৰ অভিনন্দন অনুষ্ঠান আয়োজন কৰে। চৰকাৰী নীতি নিৰ্দেশনাৰ বাবে এইবেলি সভাই কোনো সভা অনুষ্ঠিত নকৰি শিক্ষাৰ্থী সকলৰ ঘৰলৈ গৈ একোখনকৈ মাল্ল, ফুলাম গামোচা আৰু অভিনন্দন পত্ৰৰে শুভেচ্ছা তথা অভিনন্দন জনায়।





MD's Foundation Day Message 2021

My Dear Colleagues,

My heartiest greetings to each one of you on the occasion of 29th Foundation Day of NRL!

Having lived in a world of uncertainty ever since the COVID-19 pandemic reared its dreadful head early last year, we can finally see the light at the end of the tunnel as the much awaited vaccinations have arrived and inoculation is in progress. I reiterate my request to everyone to strictly adhere to COVID protocols and COVID appropriate behaviour so that we can keep ourselves, our families and our communities safe.

Government of India, in November 2019, while approving disinvestment of CPSEs, approved strategic disinvestment of BPCL's 61.65% share-holding in NRL along with transfer of management control to a CPSE operating in Oil and Gas sector. Oil India Limited along with Govt. of Assam and EIL has since acquired BPCL's stake in NRL and the Share Purchase Agreement to this effect was signed recently on 25th of March, 2021. Oil India Limited is now the Holding company of NRL. This is a major turning point in the history of the company.

Oil India Limited is a premier oil and gas upstream company engaged in exploration, development, production and transportation of Crude Oil & Natural Gas. The company has a rich heritage of more than five decades of experience in exploration, production along with strong reserve base of Crude Oil & Natural Gas. I am confident that we will be able to create a number of synergies between both the companies, thereby unlocking exponential values for our shareholders.

As we part ways from BPCL, let me on behalf of all of you, express our thankfulness and deep sense of gratitude to BPCL who came in as a promoter in the late nineties when we were constructing the refinery and giving shape to the new company for having guided and supported us at every stage of NRL's eventful and glorious journey over the years.

I am also very happy to share that despite extra-ordinary circumstances in FY 2020-21, you all have excelled in your performances in your areas of operations. The expected profit of the company for this year would be the highest ever in the history of this company. With a thrust towards speedy economic recovery and knowing that CAPEX is a critical driver of economic growth of the nation, we have scaled our investment in this financial year achieving a standalone CAPEX of Rs. 875 crore, the highest ever achieved by the company.

NRL is today, on a path of rapid growth and progress with several ambitious projects in the anvil. The next few years will be full of challenges with deadlines to meet and bottlenecks to overcome. With our collective tenacity, perseverance and resilience, I am sure we will prove our mettle once again and consolidate our position as one of the most progressive and profitable companies in the region, standing tall in the industrial landscape of the country.

Signing off, I wish you all the best and hope for a future that is safe and our lives are #BackToNormal after overcoming the pandemic once for all.

With best wishes and fond regards,

S K Barua
Managing Director

22nd of April, 2021



Pragati Dwar

Numaligarh Refinery Expansion Project Gate

Pragati Dwar, meaning the **Gateway to Progress** is the New Gate built as the Doorway to the mega Numaligarh Refinery Expansion Project. It proudly stands tall and asserts itself as a harbinger of progress as NRL embarks upon its major Refinery Expansion Project that will triple its refining capacity from 3 million metric tonnes to 9 million metric tonnes per annum. This ambitious project is a part of the transformational journey being undertaken by the Govt. of India towards achieving energy security.

Facilities/Services

- Two Blocks (both G + 1)
- West Block** - Executive / Visitor Entry with lobby and access hall, Workers Entry with smart card and biometric collection and pass issue section, Safety Training Hall, Access Control and Gate Management System including materials assignment management.
- Adequate toilet blocks.
- Expected works handling per day - 10,000 +
- Expected vehicle handling per day - 1,000 + construction materials carrying vehicles.
- Two leaf sliding gates enabling DOQ/DWC entry upto 12 metres width - 22 consignments during entire project period.
- Full height Turnstile for workers entry/exit - 16 nos, for 7,200 persons within 30 Minutes @ 4 seconds per transaction.
- Turnstile for Executives/Visitors' entry/exit- 6 nos, for 3,700 persons within 30 Minutes @ 4 seconds per transaction.
- Access Control facilities: Turnstiles / Bollards / Boom Barrier / 8-Ray / DFMD / Cameras for attendance records and CCTV Surveillance.

Complex Area
11,000 m²

Total plinth area for both the blocks
920 m²
(680 m² + 240 m²)

'Pragati Dwar' name coined by Mr. Jhilanta Rabha, AM(Ops-HCU).