

## MEMORANDUM OF UNDERSTANDING



सत्यमेव जयते  
Ministry of Mines  
Government of India

Between

Ministry of Mines, Government of India

And

Jawaharlal Nehru Aluminium Research  
Development & Design Centre



For the Year 2017-18

### I. Parties

This agreement made this 11th day of July, 2017, between the Ministry of Mines, Government of India, (hereinafter referred as "the Ministry") and Jawaharlal Nehru Aluminium Research Development & Design Centre (hereinafter referred as "the Institute") to achieve the objectives as mentioned at para-II below. The Institute is an autonomous organization under the administrative control of Ministry of Mines. The Headquarter of JNARDDC is located at Nagpur.

### II. OBJECTIVE FOR WHICH JNARDDC IS ESTABLISHED

- To assimilate the technology available in the country for production of Alumina and Aluminium including Aluminium Alloys.
- To undertake, aid, promote, guide, manage, coordinate and execute research in Alumina and Aluminium technology including Aluminium Alloys and environmental management/energy saving techniques for Alumina /Aluminium Projects.
- To develop zero risk technical know-how and basic engineering for production of Alumina/Aluminium and its alloys.
- To develop by purchase, lease or otherwise in whole or in part, equipment and facilities to further the objects of the Society.
- To establish, maintain and manage facilities for the acquisition, storage, retrieval, dissemination, evaluation, scrutiny and interpretation of information relating to technologies required for its programme.

- To collaborate with scientific agencies, research centers and educational institutions on specific projects and undertake investigations in the field of technology relevant to the objects of the Society.
- To conduct field experimentation, pilot plant testing and evaluation of other such activities necessary for the proving of technologies in the field of Alumina and Aluminium.
- To cooperate and collaborate with other national and/or foreign institutions and international organisations to further the objects of the Society.
- To publish and disseminate the results of research, development, test and evaluation conducted by the Society.
- To register patents, designs and the technical know-how that may be developed by the Society and transfer of any portion of such patents/designs/technical know-how and to receive royalty and such other payments that the Society may decide on such patents designs and technical know-how.
- To receive funds, grants-in-aids, subscriptions, donations fees, charges etc. and to invest such funds/money entrusted to the Society upon such securities or in such manner as may from time to time be determined by the Governing Body in line with the extant instructions of the Government to the Society.
- To do all such other things as the Society may consider necessary/incidental/ancillary to the attainment of the main objects of the Society.

### **III Purpose**

As per the Rule 229 (xi) of General Financial Rules, 2017 an autonomous organization with a budgetary support of more than Rupees five crore per annum, is required to enter into a Memorandum of Understanding (**hereinafter referred as 'MOU'**) with Administrative Ministry or Department, spelling out clearly performance parameters, output targets in terms of details of program of work and qualitative improvement in output, along with commensurate input requirements. The output target, given in measurable units of performance, should form the basis of budgetary support extended to these organizations. The roadmap for improved performance with clear milestones should form part of the MoU.



**IV. OUTPUT TARGETS FOR THE FINANCIAL YEAR 2017-18**

The following key performance indicators (KPI) have been identified as the evaluation criteria for the Institute (Weights for performance evaluation for different activities is given in Annexure- A ):

Sn	Activity	Physical target (nos.)	Physical target (Rs. In Lakhs)
1.	Internal Revenue and Extra budgetary resource generation against the set target by RAC/Governing Body by completing / executing projects (external agencies), undertaking testing work and training programs and miscellaneous income	23	400.00
2.	Completion of Government projects against the physical targets	3	313.72
3.	Execution of ongoing Govt project against the physical targets	5	549.06
4.	Patents filed against the target set for the year	2	0
5.	Publication (15), Conferences (2)& training workshop(2) against the target set for the year	19	0
6.	<b>Total</b>	<b>52</b>	<b>1262.78</b>

**V. INPUT REQUIREMENT**

1. At present, the Institute has the sanctioned staff strength of 63 employees (details are mentioned in Annexure- B)

Funds will be required for salary, creation of Capital Assets and other expenses on research and development, training etc. details given in the Item no. VI (Grants-in-Aid for FY 2017-18).

## VI. Grants-in-Aid for FY2017-18

Sn	Activity	Total funds requirement during FY 2017-18 (Rs. In Lakhs)	Grants-in-Aid to be provided by the Ministry during FY 2017-18 (Rs. In Lakhs)	Funds to be supplemented by the Institute during FY 2017-18 (Rs. In Lakhs)
1.	Salary component	800	579	221
2.	Creation of Capital Assets	350	350	0
3.	Miscellaneous expenditure related to research work, training, dissemination of information, etc. - To be borne by the Institute from its own resources.	250	N.A.	250
4.	Total	1400	929	471

## VII. Budget / Accounts

- i. Budgetary outlay for the year 2017-18 amounting to Rs. 929.00 lakhs, i.e. Rs. 579.00 lakhs under Salary head and Rs. 350.00 lakhs under Creation of Capital Assets is being allotted to the institute for carrying out organizational work. Budget will be based on the principle of zero-based budgeting. Expenditure will be ensured. The Grant-in-aid is dependent on the Institute's ability to show measurable improvement in service delivery with reference to the key performance indicators and achievements of the targets as included in the Annexure- A of the Memorandum of Understanding.
- ii. Ministry of Mines shall provide 80% of the actual salary component of the Institute during 2017-18. The Institute will generate enough funds from its internal arrangements to meet the balance funds requirements of 20% of salary component during FY 2017-18 and shall meet all the expenditure to be incurred on research, innovation, trainings, dissemination of information and all other components other than salary.
- iii. The Institute shall submit the details of its employees and actual expenditure apart from details of capitals assets created and the actual expenditure made on the same to the Ministry on monthly basis.
- iv. The Institute shall submit the Annual Report and Audited Accounts for the year 2016-17 to the Ministry of Mines by 2<sup>nd</sup> week of November 2017.
- v. The CAG audit / inspection of the Institute have been completed upto 2015-16. The accounts of 2016-17 shall be open for CAG audit / inspection upon requisition from CAG office.

- vi. Provisional utilization certificate shall be submitted to the Ministry by May 2017 and final utilization certificate by November 2017 for the financial year 2016-17. Further, for the financial year 2017-18, monthly provisional certificate shall be submitted before releasing the next month's grants.
- vii. All pending CAG audit paras and internal audit paras (if any) shall be replied / disposed by December 2017.
- viii. Inputs of preparations of EFC/SFC in accordance with the extant guidelines/instructions of Ministry of Finance shall be submitted as per directives of Ministry of Mines.
- ix. Monthly report in respect of financial and physical achievement in prescribed format shall be submitted to Ministry of Mines by 1<sup>st</sup> week of the month in which it becomes due. Any other periodic report asked by the Ministry shall also be submitted within the stipulated date.
- x. To ensure the following on the basis of principle of zero-based budgeting along with activity projection as in Annexure-A
  - a) Month-wise physical and financial target
  - b) Total percentage of expenditure to be met by internal revenue generation of the Institute
  - c) Unit-wise cost of activities
- xi. Governing Body of the Institute shall review user charges/source of internal revenue generation at least once in a year; and this exercise should preferably be completed by the month of September every year and inform the administrative Ministry.
- xii. The Institute shall maintain data-base relating to grants, income, expenditure, investment, assets and employee strength etc. in the format prescribed by the Govt.
- xiii. The institute shall designate an officer at appropriate level to render financial advice whose concurrence should be obtained for sanction and incurring of expenditure.
- xiv. Ministry may put in place a system of external or internal peer review of the organization every three year or five year depending on the size and nature of the activity, in terms of GFR 229(ix), and further release of grant to organization shall depend on the outcome of such review.
- xv. The Institute shall account for revenue and capital expenditure separately. The organization shall maintain and present their annual accounts/final accounts in the standard prescribed format by the Govt.
- xvi. While seeking grants from the Ministry, the organization shall provide the information in the prescribed format by the IFD and the administrative Division shall process the proposal on quarterly basis indicating the month-wise proposed release amount during the quarter. However, the Administrative Division will release the concurred amount on monthly basis as approved by the Ministry of Mines.

- xvii. All interests or other earnings against Grants in aid or advances (other than reimbursement) released to the institute shall be mandatorily remitted to the Consolidated Fund of India immediately after finalization of the accounts. Such advances should not be allowed to be adjusted against future releases.
- xviii. The institute shall take advantage of the pension or gratuity schemes or group insurance schemes or house building loan schemes or vehicle loan schemes, etc. available in the market for employees instead of undertaking liability on its own or Govt. Account.
- xix. The Institute shall adhere to the time schedule prescribed under Rule 237 of GFR 2017 for submission of annual accounts and Annual Reports.
- xx. The institute shall submit Utilization Certificate (UC) in the prescribed format along with the reports regarding performance / targets achieved, outcome, etc. in accordance with new UC format (GFR 12-A). The Utilization Certificate shall disclose separately the annual expenditure incurred and the funds given to suppliers of stores and assets, to construction agencies, to staff for (House Building and Purchase of conveyance) which do not constitute expenditure at that stage but have been met out of Grants and are pending adjustments. These shall be treated as unutilized Grants allowed to be carried forward.
- xxi. In terms of M/o Finance Office Memorandum No. 26 (120)/EMC Cell/2016 dated 28.03.2017, the administrative division shall ensure through MoU that the institute sets up necessary internal audit mechanism to carry out regular internal audit as an additional reporting mechanism and the audit reports are placed before Board of Governors (BoG) / Executive Committee (EC)/Governing Body (GB) for discussion.
- xxii. The Administrative Division shall encourage the organization to maximize internal resources and eventually attain self-sufficiency. To achieve this, the administrative division may assign the target of internal revenue generation of atleast 30% of the total budget of the organization, and accordingly the physical and financial targets may be given to the organization.
- xxiii. The actual expenditure by the Institute on the activities shall be subject to the availability of fund. While incurring the expenditure, The Institute shall adhere to the GFRs provisions besides other instructions of the Govt. issued from time to time.
- xxiv. As per Rule 229 (iv) of General Financial Rules, all autonomous organizations, new or already in existence should be encouraged to maximize generation of internal resources and eventually attain self sufficiency. In this regard, the user charges being collected by the Institute for Testing Services, Training programs and R&D project shall be reviewed on yearly basis and necessary guidelines shall be incorporated as per the instructions received from Ministry from time to time. The present user charges are enclosed in **Annexure - C**.
- xxv. The Institute will follow the provisions contained in Dept. of Expenditure's OM no. 1/1/2016-EIHA dated 13th January, 2017 relating to revision of pay scale in accordance with the recommendation of 7th CPC, whichever are applicable to the institute, subject to review by the Ministry.

- xxvi. The specific provisions laid out in rule-236 of GFR-2017 relating to submission of audited accounts shall be complied by the institute. At the end of the financial year a "Performance-cum-achievement" report shall be furnished for review by the Ministry / Governing Body in terms of rule - 242(2) of GFR-2017.
- xxvii. The Institute will ensure compliance of General Financial Rules and all the instructions, orders and guidelines issued by D/o Expenditure, Ministry of Finance, DOPT, Ministry of Mines (Government of India), etc. as applicable to Autonomous Organisations funded by the Government of India, issued from time to time.

### **VIII. Review Mechanism**

The performance of the Institute against the above parameters shall be reviewed on half-yearly basis by the Project Monitoring Committee (PMC), Research Advisory Committee (RAC), Governing Body (GB) and Ministry of Mines. The GB is chaired by Secretary (Mines) and other members include Ministry Officials viz AS (Mines) JS&FA and EA/JS (Mines) as per details enclosed in **Annexure-D**.

### **IX. Human-Resource**

- i. The Institute shall review/frame its Human Resources Policy and modify the same, if required with the approval of Competent Authority by December, 2017.
- ii. The Institute will initiate necessary time bound action well in advance to fill up the vacant posts following the prescribed rules.
- iii. All efforts shall be taken that Assessment promotion are conducted by the Institute within the stipulated time frame following the prescribed rules.
- iv. All pending vigilance cases shall be disposed off within the stipulated time following the prescribed rules by the Authority.
- v. Verification of appointments made during the last 5-10 years has to be carried by the Institute. The process has to be completed by the Institute by November 2017 (if not completed till date).
- vi. Vacancy position shall be reviewed by the Research Advisory Council of the organization on half yearly basis as set out in **Annexure-E**.

### **X. Legal Matters**

- i. Bye-laws of the Institute shall be reviewed and requisite amendments (if required) shall be made as per the prescribed guidelines by November 2017 with the approval of the Competent Authority.
- ii. Recruitment Rules in respect of all the posts shall be reviewed as per the laid down guidelines and prescribed procedures. The Institute will complete the process by December 2017.
- iii. The Institute shall ensure timely monitoring of the Court cases. All the court cases with their status will also be updated by the Institute on the website of Legal Information Management & Briefing System (LIMBS) by June 2017. The information will be kept up to date.

- iv. The institute will utilize the online Court case monitoring software developed by NIC for regularly monitoring its ongoing Court Cases during the year.

### **XI. Parliament Matters**

- i. Audited Accounts and Annual Report will be placed before the Parliament on time. The report shall be sent by the Institute to Ministry of Mines by 2<sup>nd</sup> week of November 2017.
- ii. Fulfillment of all pending Parliamentary Assurances will be ensured within the stipulated time-frame.
- iii. Legislative matters, if any, to be taken up for approval of Parliament within the stipulated time frame.
- iv. Recommendations / suggestions of the Parliamentary Standing Committee (PSC) and such other Parliamentary Committees, if any, will be implemented from time to time with the approval of the appropriate authorities of the Institute.

### **XII. Innovative Research Work / Projects**

- i. The Institute shall undertake research work in the areas of beneficiation, characterization, technological evaluation, upgradation of bauxites, reduction of energy consumption & environmental pollution, by effective utilisation of aluminium industry residue materials such as red mud, dross & scrap etc and process modeling.
- ii. The Institute shall undertake research work / projects for the benefit of aluminium industry and the nation as a whole.
- iii. The Institute shall create a system of internal/external checks and balances to ensure involvement of zero risk in experimental/research procedures and develop risk free technical knowhow and basic engineering, meeting all global benchmarks for production of alumina/aluminium and its alloys.
- iv. The Institute shall also offer analytical and testing facilities to other non-ferrous industries, steel plants, small-scale industries, R&D organisations and academic institutions particularly in the areas of chemical and mineralogical analysis, powder characterization, thermal mapping, micro structural studies, mechanical and non destructive testing, failure analysis and technical information.
- v. The Institute will organize series of lectures for dissemination of technical information.
- vi. The Institute will organize National and International Seminars.
- vii. The Institute will adhere to the highest ethical principles and give top priority to protection of the human values, environmental, health and safety concerns.
- viii. The Institute will be responsible for the scientific exactness, relevance and usefulness of its research, experiments and guidance etc.
- ix. The Institute will aim at fostering excellence against international benchmarks and focusing on relevance for addressing challenges of the aluminium industry in particular and the nation in general.
- x. The Institute will furnish an updated information on regular basis to the Ministry on the utilization of its research, guidance and advice as well the follow up action taken thereupon along with the testimonials by the users/beneficiaries on the same. This may include highlights on benefits,



improvement, upgradation, losses etc. as a result of adoption of the new techniques/methodology as suggested by the JNAARDC.

### **XIII. General**

- i. Mandatory meetings of all the Committees/Sub-Committees will be convened and conducted on time as per the following schedule
  - a) Annual General Body AGM - By September 2017
  - b) Governing Body - July' 2017&January 2018
  - c) Research Advisory Committee - May 2017 & Dec, 2017
  - d) Project Monitoring Committee - May 2017 & Dec, 2017
- ii. The Institute shall furnish / file mandatory returns/reports on time. The Institute shall also provide the reports / returns as and when asked by the Ministry.
- iii. The Institute shall ensure timely disposal of RTI applications and appeals. The Institute shall also furnish / upload certificate / report on RTI portal as per extant guidelines.
- iv. For disposal of Public Grievances / complaints, the Institute shall ensure that an effective grievance redressal mechanism is in place to ensure timely disposal of public grievances/complaints received through PG Portal or any other sources.
- v. The Institute website shall be updated, reviewed and revamped from time to time as per the Government guidelines. Annual Reports, MoA/Rules and Regulations, Service Bye-Laws and Recruitment Rules and amendments thereof of the Institute will be uploaded on the website of the Institute.
- vi. The Institute shall ensure the inputs for Cabinet Memos within the prescribed time frame.
- vii. Signing of understanding / MOU by the Institute with any other autonomous bodies or with any other party including similar organizations abroad shall be done with the approval of the Ministry of Mines.
- viii. The Institute shall ensure compliance with the Rajbhasha Policy as per the directives received from Central Government.
- ix. Swachh Bharat Campaign/Programs as well as cleanliness drive shall be taken up by the Institute and instruction/directions given by the Ministry in this regard shall be followed.
- x. Vision and Mission documents will be prepared by the Organization & uploaded on its website.
- xi. The Institute shall be active on social media by posting latest photographs and videos of any programs conducted by the institute.
- xii. Release of Grant-in-aid shall be strictly as per provisions contained in GFRs and in Department of Expenditure's instructions issued from time to time. Appropriate economy measures needs to be put in place to rationalise the expenditure of the Institute in accordance with the instructions issued by the Department of Expenditure, Government of India from time to time.

#### XIV. Autonomy to Autonomous Institutes

- 1 Autonomous bodies, which are fully or partly funded by the Government of India, like JNARDDC, shall restrict the powers of the Governing Bodies of such organizations, in matters of creation of post(s), and adoption and revision of pay and allowances of their staff and major establishment expenditure. This requires prior approval of Government of India in consultation with Ministry of Finance, Department of Expenditure.
- 2 Except the matters enumerated hereinbefore, the Institute enjoys autonomy in other matters and it is competent to take decision in accordance with Rules / Regulation / Bye-Laws of The Institute and Government of India orders issued from time to time. Where the Rules / Regulation / Bye-Laws of the Institute are silent on any subject, it may follow the relevant Rules and Regulations of the Government of India.
- 3 As per Rule 229(iv) of General Financial Rules, all autonomous organizations, new or already in existence should be encouraged to maximize generation of internal resources and eventually attain self-sufficiency.

#### XV. Period of Agreement

This MOU will be effective when signed by both parties, up to the end of the financial 2017-18, i.e. upto 31-03-2018. This MOU may be amended at any time by the mutual written consent of the Parties, including, if there is a variation in the output targets during the Financial Year.

IN WITNESS where of the Parties hereto have caused this MoU to be signed on (date) 11-7-2017, Between the Jawaharlal Nehru Aluminium Research Development & Design Centre and the Ministry of Mines.



Signed for and on behalf of  
Jawaharlal Nehru Aluminium  
Research Development & Design  
Centre, Nagpur

Dr Anupam Agnihotri  
Director, JNARDDC

Date: 11-7-2017  
Venue: N. Delhi

अनुपम अग्निहोत्री / Anupam Agnihotri  
निदेशक / Director  
जवाहरलाल नेहरू एल्युमिनियम  
अनुसंधान विकास एवं अभिकल्प केन्द्र  
Jawaharlal Nehru Aluminium Research  
Development and Design Centre



Signed for and on behalf of  
Government of India, Ministry of Mines, New  
Delhi

EA/Joint Secretary  
Ministry of Mines, Government of India

Date: 11.7.2017  
Venue: Delhi

राम कर्ण / RAM KARAN  
आर्थिक सलाहकार / Economic Advisor  
भारत सरकार / Government of India  
आन संचालय / Ministry of Mines  
नई दिल्ली / New Delhi-110001

## Annexure –A

## A.1 ACTIVITY WISE WEIGHTAGE – Revenue Generation

Based on the above, the following key performance indicators (KPI) have been identified as the evaluation criteria for JNARDDC:

Sn	Activity	Physical target (nos.)	Physical target (Rs. In Lakhs)	Weightage (%)
7.	Internal Revenue and Extra budgetary resource generation against the set target by RAC/Governing Body by completing / executing projects (external agencies), undertaking testing work and training programs and miscil income.	23	400.00	70
8.	Completion of Government projects against the physical targets	3	313.72	10
9.	Execution of ongoingGovt project against the physical targets	5	549.06	10
10.	Patents filed against the target set for the year	2	0	5
11.	Publication (15), Conferences (2)& training workshop(2) against the target set for the year	19	0	5
12.	<b>Total</b>	<b>52</b>	<b>1262.78</b>	<b>100</b>

Success indicators would be percentage of achievements of the targeted value, with the following success indicators viz a) Ability to generate target internal revenue generation b) completion of research projects c) execution of ongoing projects as per target d) Filing of patent & e) Organising conferences, training / workshop and publication of research papers. (Details enclosed in Annexure : A-1 )

100-90%	>90-80%	>80-70%	>70-60%	>60%	Means of verification
Excellent	Very good	Good	Fair	Poor	JNARDDC Annual Report

## Annexure : A-1 (contd..)

## Detail break up of physical and financial targets

## Activity – 1

Internal Revenue and Extra budgetary resource generation against the set target by RAC/Governing Body by completing / executing ongoing /new projects (external agencies)- 5, undertaking testing work -12 units, training programs-2 nos., Misc. Revenue – 2 units half yearly and EBR – 2 units half yearly.

	Weightage		70 %		
	Unit Cost (Rs. In Lakhs)		400.00		
Month	Physical		Financial (Rs. In Lakhs)		Score= WxA/T
	Target (T)	Achievement (A)	Target (T)	Achievement (A)	
Apr-17					
May-17					
Jun-17					
Jul-17	6		75		
Aug-17					
Sep-17					
Oct-17					
Nov-17	8		80		
Dec-17					
Jan-18					
Feb-18					
Mar-18	9		245		
<b>Total</b>	<b>23</b>		<b>400</b>		



## Annexure : A-1 (contd...)

**A. Projects with Industries (To be completed in 2017-18)**

Sn	Title	Cost (Rs in Lakhs)	Completion target
1.	N-38: Optimisation of parameter for ultrasound precipitation of aluminate liquor with emphasis on production of special fine hydrate and increasing liquor productivity Sponsored by: NALCO, Bhubaneswar Date of commencement & Duration: 1 year , Jun 2016	43.89	Jun 2017

**C. Ongoing Projects to be executed with physical targets in 2017-18**

Sn	Component	Cost (Rs in Lakhs)	Physical target
1	N-40: Mechanical activation of bauxite followed by technological studies Sponsored by: NALCO, Bhubaneswar Date of commencement & Duration: Jun 2016, 2yrs	55.412	90%
2	N-41: Studies on trace impurities, it's behavior & control in Bayer's process with respect to reduction in product hydrate. Sponsored by: NALCO, Bhubaneswar Date of commencement & Duration: Jun 2016, 2yrs	45.00	90%
3	N-42: Utilization of PLK (Partially Lateritised Khondalite) as a potential and value added filler material with specific reference to white ceramics and pigments Joint Project: CV Raman College of Engineering, Bhubaneswar Sponsored by: NALCO, Bhubaneswar Date of commencement & Duration: Feb 2017, 2yrs	51.00	40%
4	New projects to be undertaken with NALCO and other agencies – 2 nos.	100	--

**IR target from 5 Projects – 172 Lakhs**

**IR target from 2 Training programs -: (16 Lakhs)**

**IR target from Testing services @ Rs. 8 Lakhs per month x 12 = 96 Lakhs**

**Miscil. Income around 66 Lakhs (half-yearly – 2 units)**

**EBR (AMDF) around 50 Lakhs (Half-yearly – 2 units)**

**(5 + 2 + 12 + 2 + 2) = 23 activities in different months. [172+16+96+66+50]=400**

## Annexure : A-1 (contd...)

## Activity – 2

Completion of Government projects against the physical targets – 3 nos.

	Weightage	10 %			
	Unit Cost (Rs. In Lakhs)	313.72			
Month	Physical		Financial (Rs. In Lakhs)		Score=WxA/T
	Target (T)	Achievement (A)	Target (T)	Achievement (A)	
Apr-17					
May-17					
Jun-17					
Jul-17					
Aug-17					
Sep-17	1		226		
Oct-17					
Nov-17					
Dec-17					
Jan-18	1		40.91		
Feb-18	1		46.81		
Mar-18					
<b>Total</b>	<b>3</b>		<b>313.72</b>		

**Projects with Government (To be completed in 2017-18)**

Sn	Component	Cost (Rs in Lakhs)	Completion target
1.	S-18: Development of Super Thermal Aluminium (STAL) Conductor for Indian Power Sector (Joint project with NFTDC, Hyderabad) Sponsored by : S&T, Ministry of Mines Date of commencement & Duration: Mar 2014, 3.5 yrs	226.00	Sep 2017
2.	S-19: Development of hard and high temperature refractory material/ aggregate from Saprolite Sponsored by : S&T, Ministry of Mines Date of commencement & Duration: Jan 2015, 3 yrs	40.91	Jan 2018
3.	S-22: Developing downstream application of strip cast aluminium alloys (AA8011 and AA3004) Joint project with VNIT, Nagpur Sponsored by : S&T, Ministry of Mines&NALCO Date of commencement & Duration: Feb 2016, 2 yrs	46.81	Feb 2018
	<b>Total</b>	<b>313.72</b>	

## Annexure : A-1 (contd...)

## Activity – 3

Execution of ongoing Govt project against the physical targets – 5 nos.

	Weightage	10 %			
	Unit Cost (Rs. In Lakhs)	540.06			
Month	Physical		Financial (Rs. In Lakhs)		Score=WxA/T
	Target (T)	Achievement (A)	Target (T)	Achievement (A)	
Apr-17					
May-17					
Jun-17					
Jul-17					
Aug-17					
Sep-17					
Oct-17					
Nov-17	2		88.81		
Dec-17			0		
Jan-18	2		355.85		
Feb-18			0		
Mar-18	1		104.40		
<b>Total</b>	<b>5</b>		<b>549.06</b>		

Details of ongoing Govt project to be executed against the physical targets – 5 nos.

Sn	Component	Cost (Rs in Lakhs)	Physical target
1	S-20: Integrated approach for development of process models and pilot production of aluminium alloy extrudates using porthole dies Sponsored by : S&T, Ministry of Mines Date of commencement & Duration: Jan 2015, 3.5 yrs	298.00	75%
2	S-21: Synergistic utilization of aluminium industrial wastes for development of geopolymeric building materials Joint project with M/s. Swarnalata Holdings, Raipur Sponsored by: S&T, Ministry of Mines& M/s. Swarnalata Holdings, Raipur Date of commencement & Duration: Jan 2016, 3 yrs	57.85	75%

**MOU between Ministry of Mines and JNARDDC, Nagpur**

<b>3</b>	S-23: Effect of modified seed properties in precipitation of aluminium hydroxide from Bayer liquor. Sponsored by: S&T, Ministry of Mines Date of commencement & Duration: Nov 2016, 2 yrs	44.99	<b>65%</b>
<b>4</b>	S-24: Large scale digital database creation of Bauxite and Laterite deposits of Maharashtra State using geo-informatics technology Joint project with Maharashtra Remote Sensing Application Centre, MRSAC, Nagpur, Sponsored by: S&T, Ministry of Mines: Date of commencement & Duration: Nov 2016, 2 yrs	43.82	<b>65%</b>
<b>5</b>	P-55 : Utilization and development of process for recovery of strategic rare earths from industrial waste –Bauxite Residue at lab scale Sponsored by: Dept. of Science & Technology (DST) Date of commencement & Duration: Mar 2017, 3 yrs	104.40	<b>35%</b>
	Total	549.06	





Annexure : A-1 (contd...)

Activity – 4

Filing of Patents filed against the target set for the year

	Weightage		5 %		
	Unit Cost (Rs. In Lakhs)		N.A.		
Month	Physical		Financial (Rs. In Lakhs)		Score=WxA/T
	Target (T)	Achievement (A)	Target (T)	Achievement (A)	
Apr-17			NA		
May-17			-		
Jun-17			-		
Jul-17			-		
Aug-17			-		
Sep-17	1		-		
Oct-17			-		
Nov-17			-		
Dec-17			-		
Jan-18			-		
Feb-18			-		
Mar-18	1		-		
Total	2		-		

Based on the outcome of the innovative research process developed, JNARDDC is likely to file two patents.

## Annexure : A-1 (contd...)

## Activity – 5

Publication (15), Conferences (2) & training workshop (2) against the target set for the year

	Weightage		5 %		
	Unit Cost (Rs. In Lakhs)		N.A.		
Month	Physical		Financial (Rs. In Lakhs)		Score=WxAT
	Target (T)	Achievement (A)	Target (T)	Achievement (A)	
Apr-17			NA		
May-17			-		
Jun-17			-		
Jul-17	4		-		
Aug-17			-		
Sep-17			-		
Oct-17			-		
Nov-17	7		-		
Dec-17			-		
Jan-18			-		
Feb-18			-		
Mar-18	8		-		
Total	19		-		

Based on the outcome of the innovative research process the scientists will be publishing around 15 publications, organizing – 2 conferences and 2 training / workshops.

**A.2 ACTIVITY WISE WEIGHTAGE – Expenditure from Grant-in-Aid**

Sn	Activity	Physical target (nos.)	Physical target (Rs. In Lakhs)	Weightage (%)
5.	Salary component	12	579.00	70
6.	Creation of Capital Assets	3	350.00	30
7.	Total	15	929.00	100

Success indicators would be ability to ensure full utilisation of funds for achieving the appropriate targets. viz expenditure incurred on allocated budget heads:

**(Detail break up is given in Annexure : A-3)**

100-90%	>90-80%	>80-70%	>70-60%	>60%	Means of verification
Excellent	Very good	Good	Fair	Poor	JNARDDC Annual Report

## Annexure : A-2 (contd..)

## Activity – 1 (Expenditure)

Utilization of Grant-in-aid towards salary expenditure

	Weightage	70 %			
	Unit Cost (Rs. In Lakhs)	579.00			
Month	Physical		Financial (Rs. In Lakhs)		Score=WxA/T
	Target (T)	Achievement (A)	Target (T)	Achievement (A)	
Apr-17	1		83.00		
May-17	1		41.00		
Jun-17	1		41.00		
Jul-17	1		44.00		
Aug-17	1		44.00		
Sep-17	1		44.00		
Oct-17	1		44.00		
Nov-17	1		44.00		
Dec-17	1		44.00		
Jan-18	1		50.00		
Feb-18	1		50.00		
Mar-18	1		50.00		
<b>Total</b>	<b>12</b>		<b>579.00</b>		

Score will indicate the actual utilization of grant-in-aid towards salary component.



## Annexure : A-2 (Condt...)

## Activity – 2 (Expenditure)

Utilization of Grant-in-aid towards Creation of capital assets

	Weightage	30 %			
	Unit Cost (Rs. In Lakhs)	350.00			
Month	Physical		Financial (Rs. In Lakhs)		Score=WxAT
	Target (T)	Achievement (A)	Target (T)	Achievement (A)	
Apr-17					
May-17					
Jun-17					
Jul-17	3		350.00		
Aug-17					
Sep-17					
Oct-17					
Nov-17					
Dec-17					
Jan-18					
Feb-18					
Mar-18					
<b>Total</b>	<b>3</b>		<b>350.00</b>		

Score will indicate the actual utilization of grant-in-aid towards expenditure on creation of the following capital assets duly approved by the competent authority

SN	Capital Item	Amt. (Rs. In Lakhs)
1	Inductively Coupled Plasma Mass Spectrometry ICP-MS system	150.00
2	Optical emission spectrometer (OES)	80.00
3	X-ray Diffractometer (XRD)	120.00
	<b>Total</b>	<b>350.00</b>

Annexure – B

Sanctioned Strength of JNARDDC

SN	Post / Designation	Scale of Pay	Sanctioned
1.	Director / Scientist-VI	(PB-4) 37400-67000 + 10000	1
2.	Dy. Director / Scientist-V	(PB-4) 37400-67000 + 8900	2
3.	HOD / Scientist-IV	(PB-4) 37400-67000 + 8700	4
4.	Scientist-III	(PB-3) 15600-39100 + 7600	4
5.	Scientist-II	(PB-3) 15600-39100 + 6600	6
6.	Scientist-I	(PB-3) 15600-39100 + 5400	10
<b>SUB-TOTAL</b>			<b>27</b>
1.	Scientific Asst. III / Technical Asst. III	(PB-2) 9300-34800 + 4200	3
2.	Scientific Asst. II / Technical Asst. II	(PB-1)5200-20200 + 2800	7
3.	Scientific Asst. I / Technical Asst. I	(PB-1)5200-20200 + 2400	6
4.	Laboratory Asst.	(PB-1)5200-20200 + 1900	4
<b>SUB-TOTAL</b>			<b>20</b>
1.	Secretary-cum-Administrative Officer	(PB-3) 15600-39100 + 6600	1
2.	Asst. Admin. Officer / Per. Officer / Asst. Accounts Officer (Group-A Entry- PB-3)	(PB-3) 15600-39100 + 5400 (PB-2) 9300-34800 + 5400	1
3.	Section Officer (A/C & Admin) / Personnel Secretary	(PB-2) 9300-34800 + 4600	1+1
4.	Ex. Asst. to Director / Personal Asst. Sr. Accountant-cum-Chief Cashier	(PB-2) 9300-34800 + 4200	1+1
5.	Sr. Stenographer - Sr.Asst. / Sr. Acctn.-Cum-Cashier / Purchase-Cum- Store Asst.	(PB-1)5200-20200 + 2800	1+1
6.	Steno-Asst./Acctn. Asst. /Asst.(Cash)	(PB-1)5200-20200 + 2400	1+1+1
7.	Junior Assistant	(PB-1)5200-20200 + 1900	1
<b>SUB-TOTAL</b>			<b>12</b>
1.	Driver-cum-Lab. Attendant (Grade-I)	(PB-1)5200-20200 + 2400	1
2.	Driver-cum-Lab. Attendant (Ordinary Gr.)	(PB-1)5200-20200 + 1900	2
3.	Attn. / Peon-messengers Tech. Helper	(PB-1)5200-20200 + 1900	1
<b>SUB-TOTAL</b>			<b>4</b>
<b>GRAND TOTAL</b>			<b>63</b>

Annexure – C

List of major user charges of JNARDDC

Type of service	Details	User charges	Date of last review
Sample Testing	XRD analysis	Rs 2500/- per sample	July 2015
Sample Testing	Wet chemical / XRF analysis	Rs.250/- per element / radical (minm.Charge 1000/-)	July 2015
Sample Testing	SEM microscopy	Rs 2500/- per sample	July 2015
Sample Testing	Mechanical properties	Rs 1000/- per sample	July 2015
Elect. Thermal and magnetic measurement	Elect. Thermal and magnetic measurement using mobile van	Rs.10,00,000/- per month	July 2015
IR Thermography	Thermography measurements	Rs.15,000/- per day	July 2015
R&D projects	Projects	Cost plus 20% ( The Institute )	Aug 2016
Training Non-Exe	Training (Operators) - one week	Rs.25000/- per person	Aug 2016
Training Executives	Training (Executives) - 3 days	Rs.35000/- per person	Aug 2016

( The Institute ) - Additional set off of 3 % & 1% for Library & in-house R&D.

## ANNEXURE – D

### List of Governing Body Members:

#### Chairman

**Shri Arun Kumar, IAS**

Secretary to the Government of India  
Ministry of Mines, 3<sup>rd</sup> Floor, ShastriBhawan  
Dr.Rajendra Prasad Road, New Delhi - 110115

#### Members

- |  |   |
|--|---|
| 1. Additional Secretary to the Govt., of India<br>Ministry of Mines,<br>3 <sup>rd</sup> Floor, ShastriBhawan<br>New Delhi - 110 115                                  | 8. Director General,<br>Bureau of Energy Efficiency<br>Ministry of Power, New Delhi.  |
| 2. Reena Sinha Puri, IRS<br>Financial Advisor to Government of India<br>Ministry of Mines, 3 <sup>rd</sup> Floor<br>ShastriBhawan, New Delhi - 110 115               | 9. Dr. S.V. Kamat<br>Outstanding Scientist & Director<br>Defence Metallurgical Research Laboratory,<br>P.O. Kanchanbagh, Hyderabad - 500 058  |
| 3. Shri Ram Karan, IES<br>Economic Adviser to the Govt. of India,<br>Ministry of Mines,<br>3 <sup>rd</sup> Floor, ShastriBhawan,<br>New Delhi - 110 115              | 10. Prof. S.P. Mehrotra<br>Indian Institute of Technology Gandhinagar,<br>Vishwakarma Govt. Engineering College<br>Complex, Chandkheda, Visat-Gandhinagar<br>Highway, Ahmedabad – 382 424 |
| 4. Shri T.K. Chand<br>Chairman-cum-Managing Director<br>National Aluminium Company Limited, NALCO<br>Bhawan, P/1, Nayapalli, Bhubaneswar - 751 013                   | 11. Prof. S. Subramanian<br>Department of Materials Engineering<br>Indian Institute of Science<br>Bangalore – 560 012   |
| 5. Shri Ramesh Nair<br>Chief Executive Officer<br>Bharat Aluminium Company Limited<br>PO : BALCO Nagar<br>KORBA – 495684, Chhattisgarh                               | 12. Prof. N.S. Vyas<br>Department of Mechanical Engineering<br>Indian Institute of Technology Kanpur<br>Kanpur – 208 016  |
| 6. Shri Abhijit Pati<br>President & COO, SesaSterlite Limited<br>VEDANTA Aluminium & Power<br>Vill. : Bhurkamunda, Jharsuguda – 768 202, Odisha                      | 13. Dr. Anupam Agnihotri,<br>Director, Jawaharlal Nehru Aluminium<br>Research Development and Design Centre,<br>Amravati Road, Wadi, Nagpur - 440 023                                     |
| 7. Shri Satish Pai<br>Managing Director, HINDALCO Industries Ltd<br>Aditya Birla Centre B-Wing, 3 <sup>rd</sup> Floor, S.K.<br>Ahire Marg,<br>Worli, Mumbai – 400030 | 14. Shri Ajay Aggarwal<br>Scientist-E<br>Central Pollution Control Board<br>Parivesh Bhawan, East Arjun Nagar<br>Delhi – 110 032  |



**List of Research Advisory Committee (RAC)**

**Chairman**

**Prof. S.P. Mehrotra**

Indian Institute of Technology, IIT Gandhinagar  
Vishwakarma Government Engineering College Complex  
Chandkheda, Visat-Gandhinagar Highway  
Ahmedabad – 382 424 (Gujarat)

**Members**

- |  |  |
|--|--|
| 1. Shri Ravinder Gaur<br>Scientist-D / Advisor,<br>Department of Science & Technology,<br>Technology Bhavan, New Mehrauli Road,<br>New Delhi - 110 016 | 6. Shri M Rathakrishnan<br>General Manager (R&D)<br>Bharat Aluminium Company Limited<br>PO : BALCO Nagar<br>KORBA – 495684, Chhattisgarh                                 |
| 2. Prof. S. Subramanian<br>Department of Materials Engineering<br>Indian Institute of Science<br>Bangalore – 560 012                                   | 7. Shri Satish Pai<br>Managing Director<br>HINDALCO Industries Limited<br>Aditya Birla Centre B-Wing<br>3 <sup>rd</sup> Floor, S.K. Ahire Marg, Worli<br>Mumbai – 400030 |
| 3. Shri K.S. Raju<br>Ex-CG, IBM, Plot No. 19, Pragati Layout<br>14th Cross, Bhuvaneshwari Nagar,<br>Kempapura, Hebbal Post,<br>Bangalore – 560 024     | 8. Dr. B.K. Satpathy<br>Ex- General Manager (R&D), NALCO<br>Plot No. 803<br>Jaydev Vihar<br>Bhubaneswar - 751 013 Odisha   |
| 4. Director (P&T)<br>National Aluminium Company Limited,<br>NALCO Bhawan,<br>P/1, Nayapalli,<br>Bhubaneswar - 751 013                                  | 9. Dr. Anupam Agnihotri,<br>Director,<br>Jawaharlal Nehru Aluminium Research<br>Development and Design Centre (JNARDDC),<br>Amravati Road, Wadi, Nagpur - 440 023        |
| 5. Dr. A.K. Mukhopadhyay<br>Outstanding Scientist<br>DRDO, Defence Metallurgical Research Lab,<br>PO : Kanchanbagh,<br>Hyderabad - 500 058             |  |

**List of Project Monitoring Committee (PMC)**

**Chairman**

**Prof. S. Subramanian**

Department of Materials Engineering  
Indian Institute of Science (IISc), Bangalore – 560 012

**Members**

- |   |  |
|---|--|
| 1. Shri Ravinder Gaur<br>Scientist-D / Advisor,<br>Department of Science &<br>Technology, Technology Bhavan,<br>New Mehrauli Road,<br>New Delhi - 110 016 | 5. Dr. Anupam Agnihotri,<br>Director,<br>Jawaharlal Nehru Aluminium Research Development<br>and Design Centre (JNARDDC)<br>Amravati Road, Wadi, Nagpur - 440 023 |
| 2. Prof. D.R. Peshwe<br>Head, Department of Metallurgical<br>& Materials Engg.<br>VNIT, Nagpur – 440 010  | 6. Dr. B.K. Satpathy<br>Ex- General Manager (R&D), NALCO<br>Plot No. 803<br>Jaydev Vihar<br>Bhubaneswar - 751 013 Odisha   |
| 3. Shri S.K. Roy<br>Director (P&T)<br>National Aluminium Company<br>Limited, NALCO Bhawan,<br>P/1, Nayapalli,<br>Bhubaneswar - 751 013                    | 7. Dr. T.R. Ramachandran<br>Emeritus Scientist<br>Nonferrous Materials Technology<br>Development Centre (NFTDC)<br>P.O. Kanchanbagh<br>Hyderabad - 500 058 (AP)  |
| 4. Dr. A.K. Mukhopadhyay<br>Outstanding Scientist<br>DRDO, Defence Metallurgical<br>Research Lab, PO : Kanchanbagh,<br>Hyderabad - 500 058                |  |

## Annexure – E

## Vacancy position of JNARDDC

SN	Group-IV	Name of Post	No. of vacancies	Action taken for filling up the vacancy
1.	IV	Director	Nil	---
2.	IV	Sr. Principal Scientist Principal Scientist Senior Scientist Scientist Junior Scientist	3	Under process

SN	Group-III	Name of Post	No. of vacancies	Action taken for filling up the vacancy
1.	III	Scientific Officer Grade-II Scientific Officer Grade-I Scientific / Tech. Officer Scientific / Tech. Asst.-III Scientific / Tech. Asst.-II Scientific / Tech. Asst.-I Lab. Asst.	3	Under process

SN	Group-II	Name of Post	No. of vacancies	Action taken for filling up the vacancy
1.	II	Secretary cum Sr. Admn. Officer Asst. Admin. Officer / Per. Officer / Asst. Accounts Officer (Group-A Entry) Ex. Asst. to Director / Personal Asst. /Sr. Accountant-cum-Chief Cashier Section Officer (A/C & Admin) / Personnel Secretary Sr. Stenographer - Sr.Asst. / Sr. Acct.-Cum-Cashier / Purchase-Cum- Store Asst. Steno-Asst./Acctn. Asst. /Asst.(Cash) Junior Assistant	3	Under process

SN	Group-I	Name of Post	No. of vacancies	Action taken for filling up the vacancy
1.	I	Driver-cum-Lab. Attendant Attn. / Peon-messengers Tech. Helper	Nil	Under process