



MCL NEWS

A Publication of Maamba Collieries Limited Corporate Affairs Department | January - March 2016



MCL Accorded Power Deal of the Year 2015 Award

HIGHLIGHTS

**MCL Accorded Power Deal of the
Year 2015 Award**

**MCL Power Project Engineers
Undergo Offshore Training In China**

**Operation & Maintenance (O&M)
Engineers Arrive**

**Demineralized (DM) Water Plant
Commissioning**

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On the cover

MCL Project Finance Team at the Project Finance International (PFI) Award Function



Executive Messages



■ Mr Ashwin Devineni -
Resident Director

Foreword by the Resident Director(RD)

This being the first issue of the MCL Newsletter in the New Year 2016, I would like first to wish employees of MCL and their families a prosperous new year.

This is the right time to reflect on what has been achieved and what we have failed to achieve during the past year. As MCL, we have attained a number of milestones, some of which are related to the Power Plant and covered elsewhere in this Newsletter. This is a sign of hard work from all the staff involved and I would like to urge them to continue with the same spirit .

I would like to welcome the new members of staff of Nava Energy Zambia Limited (NEZL) who have joined us to operate and maintain our TPP. I would also like to urge them to work per as their targets so that the TPP is commissioned on time.

I also wish to welcome back our engineers who had been on a training visit to China and I am sure they will put to good use what they learnt.

The year 2016 is important not only to MCL but to entire Zambia, as we look forward to the commissioning of the Thermal Power Plant (TPP) at Maamba. It is against this back ground that we all should continue with hard work, dedication and enthusiasm so that we could attain this very important milestone.

Once again, my best wishes to all my fellow employees for a very productive 2016.

Ndalumba kapati, Natotela sana, Dzikomo kwambiri



■ Rear Admiral Venkat Shankar (Rtd.)

Message by the Chief Executive Officer (CEO)

As we bring out our first Newsletter of 2016, I extend my greetings to our readers . The MCL Newsletter aims to provide a platform for communicating with our valued stakeholders and furnish them with information on our activities.

Maamba is being looked at very keenly by all the Zambian people as it strides towards supplying 300MW of power to a nation that is currently suffering from a huge power deficit. Thus our responsibility transcends beyond the limited boundary of MCL and Sinazongwe district, and extends to the entire nation. It is therefore our duty to continue working with dedication, team spirit and motivation.

I would also like to take this opportunity to call upon my fellow employees to communicate to members of the community on the efforts being made by MCL to bridge the power deficit, the benefit that would accrue to the community at large due to this development and the work being done to improve the conditions at Maamba. In this context, MCL is very pleased to donate a generator to the Maamba School for children with special needs and to provide these children with additional comfort in times of power shut down.

Finally, as always, I make an appeal to all employees and contractors on site to work "**safely**" at all times.

MCL Accorded Power Deal of the Year 2015 Award from PFI

Project Finance International (PFI) of Thomson-Reuters, the leading source of global Project Finance Intelligence, has accorded the “Power Deal of the Year 2015” Award in Middle East and Africa to the project finance transaction of Maamba Collieries Limited (MCL). MCL, a step-down subsidiary of Nava Bharat Ventures Limited, is implementing an Integrated Coal & 300 MW Power Project in Zambia at an estimated outlay of US \$ 843 Million.

PFI Awards are the most prestigious annual awards, spread over a wide spectrum of industries and

across continents. MCL’s Award forms part of Roll of Honour announced by PFI.

The award was presented at a Gala Awards Dinner by PFI in London, when 800 of the world’s most senior and successful professionals gathered to celebrate industry excellence across the world.

MCL is justifiably proud of this achievement and congratulates all the team members for their hard work and tremendous perseverance in the face of huge odds to make the project a reality .

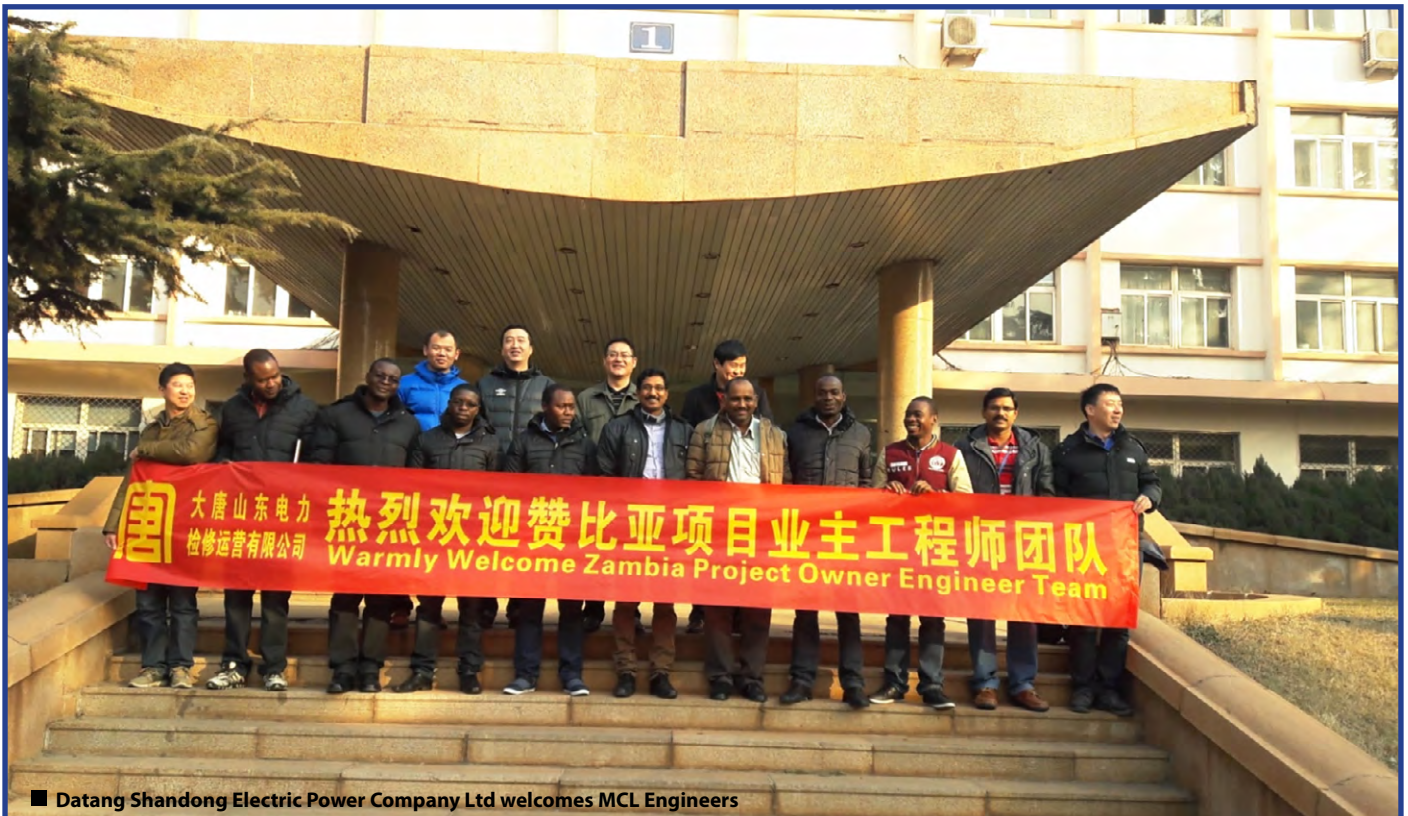


■ Mr. Ashwin Devineni receiving the Project Finance International (PFI) “Power Deal of the year 2015” award

MCL Power Project Engineers Undergo Offshore Training in China

MCL sent nine (09) Engineers from its Thermal Power Plant for offshore training with SEPCO Construction Corporation in China. The team consisted of three (03) expatriate engineers and six (06) Zambian engineers.

The group left Zambia for China on Tuesday, 8th January, 2016 and returned to Zambia after one month of intensive training in the operation and maintenance (O&M) of the Thermal Power Plant (TTP). It is anticipated that the training would add value to the engineers' knowledge on the operation and maintenance of the Thermal Power Plant. SEPCO Construction Corporation is the EPC contractor for MCL.



■ Datang Shandong Electric Power Company Ltd welcomes MCL Engineers



■ Site visit at Datang Shandong Electric Power Overhaul & Operation Co. Ltd



MCL gets ready to receive Operation and Maintenance (O&M) Engineers for the Thermal Power Plant.

As preparations to commission the Thermal Power Plant gain momentum, a lot has been done to provide adequate and appropriate accommodation for Operation and Maintenance (OM) Engineers. In this regard, MCL has contracted a South Africa based company to construct 60 executive prefabricated quarters to accommodate its engineers. The first unit of the prefab quarters was commissioned by Mr. Venkata Rao, Executive Vice President of Nava Bharat Ventures on Friday, 15th January, 2016. The function was attended by the Resident Director, Mr. Ashwin Devineni, Senior Management Staff and other staff members.



■ Executive Prefab Houses under Construction



■ Mr. Venkata Rao, Executive Vice President of Nava Bharat Ventures, Commissioning the 1st Unit of the Prefab Quarters on Friday, 15th January 2016.



CEO interacts with school children

Rear Admiral (Rtd.) Venkat Shankar, CEO of MCL, addressing pupils and staff at Maamba Mine School

At the invitation of the Headmistress of Maamba Mine Government School, the CEO visited the school and addressed over 300 hundred pupils and members of staff. In his address the CEO explained the vision of MCL as well as the benefits of the Thermal Power Plant under construction, to the nation as a whole. He also reminded the students to stay focused in whatever they did so that they could be responsible citizens when they grow up. Further, the CEO announced to the students that MCL would sponsor a junior soccer tournament among schools in Maamba so

as to improve talent among the youth. The CEO noted the lead taken by the school in the **“Keep Maamba free of litter”** campaign sponsored by MCL. The CEO also answered questions posed by the students.

The CEO concluded his visit with a brief tour of the school infrastructure, namely, the Computer and Science Laboratories and Home Economics Department.

MCL Celebrates International Women’s Day

The International Women’s Day (March 8) is a global day set aside to celebrate the social, economic, cultural and political achievements of women. This day is celebrated to inspire women the world over to realize their full potential in their day-to-day lives. The day also marks a call for accelerating gender equality in all areas of human endeavour.

On 8 th March, 2016, woman employees of MCL joined other women from all walks of life in Maamba in commemorating the International Women’s Day.

The 2016 Women’s Day was celebrated in the MCL Kanzinze Stadium under the theme, **“Planet 50 – 50 by 2030: Step it up for gender equality”**.

MCL ladies showcased their various activities in the organisation.

The celebration was graced by Mr. Protacial Mulenga, Sinazongwe District Commissioner, while MCL was represented by Mr. Gurram Venkata Narayana, Chief Operating Officer, who was accompanied by other senior members of staff of MCL. The ladies concluded

their day's activities by touring the Mine and the construction site of Thermal Power Plant (TTP).

The commemoration was preceded by Township Cleaning, where women in Maamba Township, through the initiative and support of MCL, picked litter on the main roads, including the market area in an effort to keep Maamba Township clean.



■ MCL female employees show casing some of their activities at MCL DIGESTIVE SYSTEM

MCL Training Institute - Second Batch of Trainees Graduate



■ MCL Training Institute students – second intake. 10/11/2015



■ Trainees at practical work



The MCL Training Institute's second batch of trainees graduated on 1st April, 2016. The intake comprised twenty nine (29) trainees, out of which fifteen (15) studied Metal Fabrication and Welding while fourteen (14) studied basic Electrical Engineering. Further, ten (10) of the trainees were family members of Project Affected Persons (PAPs) who were trained free of cost by MCL as a part of its larger Livelihood Restoration Programme for these settled families.

MCL's Livelihood Restoration and Improvement Plan (LRIP) the sole aim is to impart skills to Project Affected Households (PAHs) so that they could improve means of livelihood.

While the training is focused to provide skills to the project affected people, MCL also includes other members of the community in this programme.

MCL would like to record that the second batch had eight female trainees and the mixed gender training is in line with MCL's policy of promoting gender equality.

MCL Welcomes Community Members at Site

As part of the MCL Stakeholder Engagement Policy, a number of community sections have been visiting the Mine to acquaint themselves with activities at MCL, especially the construction of the Thermal Power Plant (TPP). One such visit was on Friday, 12th February, 2016, when a group of thirty (30) teachers and members of staff from Maamba Mine Government School visited the Mine.

The group was welcomed by the CEO. He gave them a brief on MCL's activities before they embarked on a conducted tour of the Mine.

There had been some fears from certain sections of the community that the TPP would adversely affect the environment if certain interventions were not put in place. These visits allow the community members to see for themselves the measures put in place by MCL to protect and improve the environment. They also help MCL in educating the community members on the extent and nature of investment and the benefits that would accrue to the community from the development.

The members of the team asked the CEO some pertinent questions mainly on CSR related activities. The CEO reiterated MCL's commitment to undertaking CSR activities within the Township. He further appealed to the team to support the investment as it would benefit the Maamba community and the country at large.

The Headmistress, Mrs. Edith Masheke, thanked MCL Management for allowing the team to visit the Mine. She said the visit accorded the team an opportunity to understand the extent of investment at MCL as well as MCL's planned CSR Activities. She pledged, on behalf of her staff, to support the investment.



■ CEO addressing staff members (teachers) from Maamba Mine School.

Another team of community members from Maamba New Township visited the Mine on Friday, 19th February, 2016 to acquaint themselves with activities at MCL, especially the TPP Construction.

The group was received by the CEO, who gave them a brief on MCL Activities before they embarked on a conducted tour of the Mine and the TPP construction site. The SHEQ Manager also gave a brief on Safety and Environmental issues related to the Power Plant, CHPP and Mining.

The CEO appealed to community members to ensure that water was conserved as the situation at Kariba was very bad with the location from where water was being pumped dried up.

After the visit, the team appreciated the investment made and indicated that most of the concerns they had on the project addressed positively.



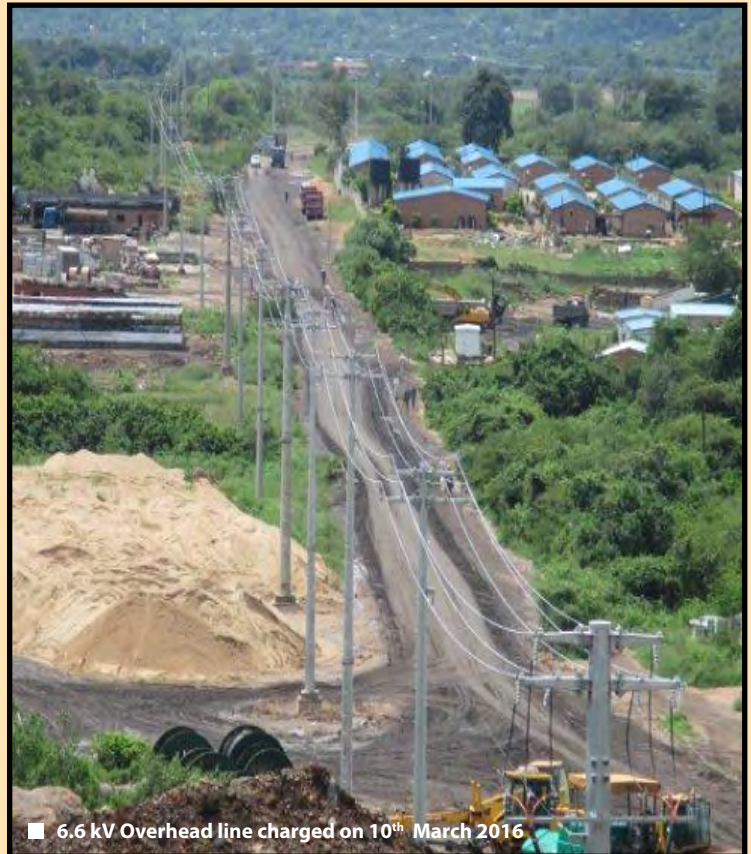
■ Community members during the tour of the Mine on Friday, 19th February, 2016.



Thermal Power Plant (TPP) News

The construction activities at the Thermal Power Plant site continue at a very brisk pace. The MCL team has been strengthened by the presence of nearly 40 engineers belonging to the O&M contractor. The project activities are now moving from installation phase to pre-commissioning and trial phase.

As a part of the Commissioning activities, the two reservoirs were filled up with water from Kariba lake (see picture) through a 22km long pipe line. Many switchgears have been charged for the first time and some of the key pumps in the water system have been test run. Even as testing and trials of key systems are continuing, construction activities on the Coal Handling System and Limestone are reaching the final stages.



Operation and Maintenance (O&M) Team Mobilized to Site

The O&M Operator, Nava Energy (Z) Limited has mobilized Thirty Four (34) expatriate engineers who have past experience in operation and maintenance of similar power plants. They are being assisted by MCL trained Zambian engineers in the pre commissioning and commissioning activities of the TPP.

As part of skill transfer, 34 Zambian Engineers from UNZA, CBU and NORTEC were recruited and have completed a two (2) year training programme in Operation and Maintenance (O&M) of the plant. Further, these Zambian Engineers have received off shore training in operation and maintenance of similar power plants in India and China.

The Zambian Engineers now occupy key roles as full-fledged officers of the O&M team and oversee the commissioning and trial activities of key systems and machinery.

MCL puts a smile on children with special needs

MCL commissioned a 30kV GENSET which it had donated to Maamba Special School for children with special needs during a colourful ceremony held on Friday, 29th January, 2016. The function was attended by parents, District Education Board Secretary (DEBS) Staff, members of the clergy, staff members and pupils of the school and MCL Management and staff.

The ceremony was preceded by a thanks giving chorus sung by school children and speeches by the District Education Standards Officer (DESO) and other community members.

In his address during the ceremony, the CEO reiterated MCL's commitment to its CSR Policy despite the company -being in the 'investment' stage. He informed the gathering of some major community projects that had recently been undertaken by MCL, for example, construction of a 1x3 Classroom Block at Mweela Primary School and extension of the water intake point at Kariba Pump Station for over 200metres following excessive recession of water in Lake Kariba, an initiative that averted a water shortage in Maamba Township.

He appealed to the community to support the investment so that construction works of the Thermal Power Plant were not disrupted in any way.

The District Education Standards Officer (DESO), Mr. Sikanyiti, who represented the District Education Board Secretary (DEBS), received the 30kV generator on behalf of the Ministry of Education. The DESO appreciated the special donation from MCL, which he said would go a long way in alleviating the power shortage at this special school. The entire audience was deeply moved when the vote of thanks was read out by a Grade 8 handicapped child, Prince Muchimba in a small wheel chair. As a spontaneous gesture, MCL has taken on the funding of the child's education.



■ Maamba Special School choir (left) performing and District Fisheries Officer, Mr. Hankolwe, who represented the District Commissioner, cutting a ribbon to officially commission the Gen Set.



■ The District Education Standards Officer, (DESO), Mr. Sikanyiti, receiving the Gen Set from the Chief Executive Officer of MCL, on behalf of the Ministry of General Education.





■ Prince Muchimba, a Grade 8 pupil at Maamba Special School, giving a vote of thanks during the commissioning of the Gen Set.

MCL Donates Building Materials to Local School

In Keeping with MCL's CSR Policy, the following building materials were donated to Siankodobbo Primary School (within Mine Area) on Monday, 22nd February, 2016. The materials included:

- 35 x 4.5m roofing sheets
- 8 x 6.7m roofing sheets
- 35 Kg window putty
- 55 bags of cement
- 240 roofing hooks
- Glass panes, paints, window slides, mortice locks , etc.

The donation was made following a request by the Maamba Ward Development Committee to MCL for material or financial support to enable the Siankodobbo Community complete a classroom block that had remained incomplete for some years due to lack of funds and materials.

The handover ceremony was attended by Headman Siankodobbo and his Committee, the School Parent Teacher Association (PTA) Chairperson and members of staff of Siankodobbo School.



■ MDT Manager, Mr. Jethro M. Sikalunda, handing over building materials to Siankodobbo Primary School Head Teacher, Mrs. Syabwanta.

MCL was represented by the MDT Manager, Security Manager, Estates Manager and the Community Services Officer.

In their remarks during the function, the School Head Teacher (Mrs. Syabwanta), Ward Development Committee Chairperson, PTA Chairperson and the Village Headman expressed gratitude over MCL's gesture and pledged to use the materials for the intended purpose.

Mining Department Gears up for Future

The Mining department is, in number terms, the biggest department at MCL with manpower of 64 workers. It is headed by the Mine Manager – Mr. Scott Phiri and supported by Chief Surveyor Mr. Satyanarayana Karra, Chief Geologist Mr. Sanjeeva Reedy, Chief Chemist – Mr. Nicholas Kalondo, 2 Mine Superintendents and other support staff.

Activities in the Mining Department for the past year

MCL restarted mining operations in 2011 in Izuma Block B pit. From October 2011 to March 2016 MCL has produced 1,333,196 tons of high grade coal and 2,309,453 tons of low grade coal by removing 9,068,130 BCM of waste materials. The mining operations in this pit will continue up to 2020. The other mining pits in the area are identified as Izuma A, B, C, etc.

In addition to the existing Izuma pit, Izuma A pit has been explored and mining plans have been prepared to cater to the supply of coal for the MCL 2 x 150 MW Power Plant currently nearing completion. The coal from this pit will supply fuel to the TPP for close to 20 years.

The high grade coal is being processed at MCL Coal Handling and Processing Plant (CHPP) and being sold to various consumers like Lafarge Chilanga Cement, Dangote Cement, and several other customers. The low grade coal is stockpiled for use as fuel for the power plant.

For the conduct of mining operations in Izuma A, MCL has procured modern HEMM equipment and this equipment will be employed in the mine for meeting the coal requirement of the TPP once it is commissioned.



■ Men at work



■ Dump Trucks to handle new Mine Operations



■ New Settling Ponds

In addition to the existing mining operations, MCL is also carrying out several other support activities which are essential for smooth operation of the TPP.

These include construction of Ash pond for storing ash generated from the boilers, preparation of haul roads for supply of coal from stock pile areas to the TPP and dewatering of Izuma A pit.



■ Road to Power Plant from TPP coal yards

Electrical Safety - **Everybody's Concern**

- Do not remove a plug from a power point by pulling the cord; pull the plug instead.
- Switch off electrical items that are not in regular use from the plug and ensure that, when you are away from the house for any length of time, you unplug and switch off electrical items, as items left plugged in, can be a fire risk and waste energy if left on standby.
- Do not use any electrical items in the bathroom unless specifically designed for use there, for example, shavers and electric toothbrushes. However, even with these items, take care not to get wet and avoid plugging and unplugging with wet hands.
- Always turn the electricity off at the mains when carrying out any electrical repairs and attempt repairs only if you know what you are doing. Do not guess!
- When purchasing any electrical items, ensure that they are of approved standard and keep them correctly maintained.
- Do not use electrical equipment outside in the rain and wet conditions.
- Switch off and unplug appliances during thunder showers

Section H: Miscellaneous

Fly ash – a Vital TPP Byproduct

Power generation through a coal fired Thermal power Plant produces a very vital byproduct as a result of burnt out coal. After coal has burnt out in the furnace, it will produce two types of ash, namely, bed ash and fly ash. The ash will be collected at different stages. Bed ash will be collected separately through chain conveyors under the boilers while fly ash will be collected through electrostatic precipitator (ESP).

Once generated, the fly ash and bed ash will be disposed into ash ponds that are lined with High Density Polyethylene (HDPE) and geo textile sheets so as to avoid leaching into the ground until the properties of the ash is thoroughly checked.

Fly ash is a very vital byproduct of the TPP. It can be used in the manufacturing of various ceramic products, for example, tiles as well as brick manufacturing. It can also be used in cement manufacturing and for fertilizing land.

Sports – Tit bits

- MCL sponsored all the Trophies awarded at the Zambia Police Service Annual Sports Awards ceremony held at the Government Complex. MCL was represented by Senior Manager – Corporate Affairs, Mr. Mayford Chikoya.
- MCL sponsored side Zamcoal Diggers has intensified preparations for the forthcoming football season.
- Works on the Badminton and Lawn Tennis courts are progressing well.



■ Mr. Chikoya (right) presenting the Coach of the Year award to the Nkhwazi Rugby coach





■ Current state of the Thermal plant


Coal Product Specifications

MCL established a modern, Coal Handling and Processing Plant (CHPP) which has facilitated production of washed coal of different specifications with consistent quality and eliminated pollution of nearby streams.

Product Specifications

Washed Coal Nuts	Parameter	Min & max
	Size	+20 - 50 mm
	Inherent moisture %	1.5 - 1.9
	Total moisture %	3.0 - 9.0
	Ash %	18 - 20
	Volatile Matter %	18 - 21
	Fixed Carbon %	59.1 - 60.5
	Phosphorous % (Average)	0.0025
	Total Sulphur %	0.7 - 1.5
	Gross Calorific Value (kcal/kg)	6294 - 6482

Washed Coal Peas	Parameter	Min & max
	Size	+10 - 20 mm
	Inherent moisture %	1.5 - 1.9
	Total moisture %	3.0 - 9.0
	Ash %	18 - 20
	Volatile Matter %	18 - 20
	Fixed Carbon %	60.1 - 60.5
	Phosphorous % (Average)	0.0025
	Total Sulphur %	0.7 - 1.5
	Gross Calorific Value (kcal/kg)	6294 - 6482

Washed Coal Fines	Parameter	Min & max
	Size	+0.5 - 10 mm
	Inherent moisture %	1.5 - 1.9
	Total moisture %	5.0 - 12
	Ash %	18 - 20
	Volatile Matter %	18 - 20
	Fixed Carbon %	60.1 - 60.5
	Phosphorous % (Average)	0.0025
	Total Sulphur %	0.7 - 1.5
	Gross Calorific Value (kcal/kg)	6294 - 6482

Unwashed Coal Fines	Parameter	Min & max
	Size	+0.5 - 10 mm
	Inherent moisture %	1.0 - 1.4
	Total moisture %	5.0 - 12
	Ash %	21 - 25
	Volatile Matter %	17 - 19
	Fixed Carbon %	55 - 59.6
	Phosphorous % (Average)	0.0025
	Total Sulphur %	1.6 - 2.5
	Gross Calorific Value (kcal/kg)	5824 - 6200

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