Pre-Feasibility Report

for

KASHI VISHWANATH STEELS PVT.LTD.

EXPANSION PROJECT

Expansion of M/s Kashi Vishwanath Steels Private Limited for MS Ingot / MS Billet production from 57,600 TPA to 204,200 TPA and Rolled Production from 88,200 TPA to 200,000 TPA

At

Narain Nagar Industrial Estate, Bazpur Road, Kashipur,

Environment Consultant

Vardan Environet

(QCI and NABET/EIA/1619/RA 0037)

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CHAPTER 1
EXECUTIVE SUMMARY

1.0 PREFACE

M/s Kashi Vishwanath Steels Private Limited (KVS) is existing steel plant at Narain Nagar Industrial Estate, Bazpur Road, Kashipur, District-Udham Singh Nagar, Uttarakhand at Latitude: 29°11'21.16" N & Longitude: 79°00'09.86" E, ASML235m for production of 57,600 TPA MS Ingot / MS Billet production through 2x5 Ton Induction Furnace and 2x4 Ton Induction Furnaces and 88,200 TPA Rolled product production.The existing plant area is 5.981 Ha.

The company was set up in the year 1985 initially after obtaining NOC from Uttar Pradesh Pollution Control Board on 12.12.1985 for setting up of small Steel Plant for production of 30 TPD Rolled Products (MS Bar, MS Round and Channels). The plant was expanded in 1992 for 100 TPD production after obtaining NOC from Uttar Pradesh Pollution Control Board on 24.06.1992. Again, the plant was expanded for production of 160 TPD after obtaining NOC from Uttarakhand Environment Conservation & Pollution Control Board on 21.12.2005. M/s KVS has further expanded its capacity for the production 245 TPD after obtaining NOC from UECPCB. CCA on 24.06.2006.

M/s Kashi Vishwanath Steels Private Limited (KVS) is planning to expand its production capacity for production of MS Ingots / MS Billets from 56,700 TPA to 204,200 TPA by replacing the existing 2x5 Tons Induction Furnaces and 2x4 Tons with 4x12 Ton and enhancing production of existing Rolling Mill from 88,200 to 200,000 TPAthrough modernizationby increasing the output (speed) Additionally 1x20 Ton Gas Oxygen Refining Unit, 20 TPD Cold Drawing Complex and 4 TPD Metal Recovery Plant shall be installed.

2.0 THE PROJECT PROPONENT

Shri Devendra Kumar Agrawal is the Managing Director of KVS Premier Group. Under his leadership the group has reached new heights.

Arpan Jindal is the Director of KVS Premier Group and Son of Shri Devendra Kumar Agrawal. He is a young entrepreneur with 10 years of experience in industrial units.

Shri Devendra Kumar Agrawal concerns for environment protection and conservation were well appreciated by the Govt. of Uttarakhand by honoring him Paryavaran Puraskar for operating the best environment friendly industrial unit in the state of Uttarakhand.

3.0 LOCATION & LAND

The project is located at Narain Nagar Industrial Estate, Bazpur Road, Kashipur, District Udham Singh Nagar, Uttarakhand on area of 5.981 Ha.The entire project will be installed inside the existing plant. Expansion project does notenvisage additional land.

4.0 MANPOWER

Existing manpower of the plant is 400. Total manpower after the proposed expansion shall be 500 comprising Technical Managerial & Supervisory Staff.

5.0 POLLUTION CONTROL EQUIPMENT

Following pollution control measures will be taken up for the proposed project of M/s Kashi Vishwanath Steels Private Limited:

- Cyclone cum spark arrester with Pulse jet Bag filter with Induction Furnaces to control fugitive emissions and to reduce stack emissions below 30 mg /Nm^3.
- Cyclone cum spark arrester with Pulse Jet Bag filter with Gas Oxygen Refining unit to keep PM stack emission from stack below 50 mg /Nm^3.
- Cooling water shall be recycled in the process. Blow down from Cooling Tower and waste water from Neutralization Pit shall be used for slag cooling and dust suppression. Zero effluent discharge (ZLD) shall be maintained.

6.0 PROJECT COST AND COMPLETION SCHEDULE

The estimated cost of the proposed project is Rs. 20 Crores

After getting CTE from UEPPCB and EC from MOEF&CC, tenders will be floated for purchase, installation and commissioning of equipment. Estimated completion schedule of project is 18 months.

7.0 SALIENT FEATURES OF THE PROJECT

Sl.No.	Particulars	Details
1	The Project	Expansion of M/s Kashi Vishwanath Steels Private Limited from 88,200 to 200,000 TPA Rolled production (MS Rods, MS Bars & Sections etc.) through 4x12 MT Induction Furnaces.
2	Location of the Project	Narain Nagar Industrial Estate, Bazpur Road, Kashipur, District Udham Singh Nagar, Uttarakhand.
3	Topo-sheet Nos.	53K/15, 53K/16, 53O/3, 53O/4
4	Latitude	29°11'21.16" N
5	Longitude	79°00'09.86" E

Sl.No.	Particulars	Details
6	Area of the Plant	5.981 Ha.
7	Biosphere Reserve / National Park / Wildlife Sanctuary / Ecological sensitive area	Not within 10 km radius of the project site
8	Reserve Forest / Protected Forest	No forest land is involved
9	Production as per the existing capacity	88,200 TPA Rolled product 57,600 TPA MS Ingot / MS Billets
10	Proposed Expansion capacity	200,000 TPA Rolled Product
11	Cost of the proposed expansion	Existing: Rs. 36 Crs. Proposed: Rs. 20 Crs. Total: Rs. 56 Crs
14	Manpower Requirement	Existing: 400 nos. Additional: 100 nos. Total: 500
15	Requirement of Water	Existing: 105 KLD Total after Expansion: 295 KLD
16	Requirement of Power / Fuel	**Power** Existing: 16.5 MW Proposed: 10 MW Total: 26.5 MW DG set 1x125 KVA, 1x160 KVA & 1x400 KVA has been proposed to be installed. **Fuel** LDO: 100 liters / hr. (Emergency Power only)

CHAPTER 2
IDENTIFICATION OF PROJECT AND PROJECT PROPONENT

2.1 IDENTIFICATION OF PROJECT AND PROJECT PROPONENT

2.1.1. THE PROJECT

M/s Kashi Vishwanath Steels Private Limited (KVS) was incorporated on 1985 and have existing production capacities for production of 57,600 TPA MS Ingot / Billet and 88,200 TPA Rolled Products. The existing plant has 2x5 Ton and 2x4 Ton Induction Furnaces.

Now, M/s KVS wish to expand its production capacity for production of 200,000 TPA Rolled Products by installation of 4x12 Ton Induction Furnaces with both Billet Casting and Ingot moulding facility for 204,200 TPA. Additionally, 1x20 Ton Gas Oxygen Refining Unit, 20 TPD Cold Drawing Complex and 4 TPD Metal Recovery Plant are proposed.

Plant	Existing			Proposed (Total after the proposed expansion)		
	Unit	Days of Operation	Capacity TPA	Unit	Days of Operation	Capacity TPA
Steel Melting Shop						
Induction Furnace	2x 5 Tons 2x 4 Tons	300		4x 12 Ton	360	207,360
Continuous Casting Machine (CCM) / Ingot Casting	2 Strand, 6/11 m radius	300	57,600	2 Strand, 6/11 m radius	360	204,200
Gas Oxygen Refining Unit	-	-	-	1 x 20 Ton	360	-
Producer Gas plant	Existing Producer Gas Plant shall be phased out after the proposed expansion. PNG Gas will be used in Reheating Furnace					
Metal Recovery Plant	--	--	--	1	300	4 TPD
Reheating Furnace	1 x 45 TPD 1 x 200 TPD	360	-	1 x 45 TPD 1 x 200 TPD	300	-
Rolling Mill						
Low Speed Rolling Mill	45 TPD	360	16,700	120 TPD	350	41,760
High Speed Rolling Mill	200 TPD	360	71,500	452 TPD	350	158,240
Total Rolling Mill	245 TPD	360	88,200	572 TPD	350	200,000

Plant	Existing			Proposed (Total after the proposed expansion)		
	Unit	Days of Operation	Capacity TPA	Unit	Days of Operation	Capacity TPA
Production						
Cold Drawing Complex	--	--	--	20 TPD	360	7,200
Industry may either roll MS Billets/Ingots produced in the plant or sold it directly in market. In case sufficient Billets / Ingots produced in the plant are not available for rolling, billets / ingots shall be purchased from the market for rolling, within the maximum production of 200,000 TPA.						

2.1.2 PROJECT PROPONENT

Kashi Vishwanath Steels Private Limited was incorporated as public limited company by Sri Devendra Kumar Agrawal, with its main objective to manufacture steel ingot / billets etc. The promoters / Directors of the company are in the business of steel and its allied products for considerable period of the time. They have suitable association, experience and background to explore the commercial possibilities of manufacturing and marketing billets.

Sri Devendra Kumar Agrawal is the Managing Director of KVS Premier.He is an active ROTARIAN and served as Rotary District Governor for the year 2014-15.Under his leadership, the group reached new heights

Arpan Jindal is the Director of KVS Premier Group and son of Shri Devendra Kumar Agrawal. He has done his Master's in Business Administration and is having about 10 year experience in running industrial units. He was instrumental in setting up the casting manufacturing facility and lining up the supply of Automobile castings to automobile majors such as Mahindra & Mahindra Ltd., TATA Motors and Bajaj Auto Limited at Pantnagar. With this strength, background and the prospects, the promoters envisaged establishment of the steel plant and incorporated the company for running the same under corporate structure.

2.2 NEE.D FOR THE PROJECT AND IMPORTANCE TO THE REGION

Steel is crucial to the development of any modern economy and is considered tobe the backbone of the human civilization. The level of per capita consumption of steel is treated as one of the important indicators of socio-economic development and living standard of the people in any country. All major industrial economies are characterized by the existence of a strong steel industry and the growth of many of these economies has been largely shaped by the strength of their steel industries in their initial stages of development.

The finished steel production in India has grown from a mere 1.5 million tonnes in1951 to 93.2 million tonnes in 2017-18. During the first two decades of plannedeconomic development, i.e. 1950-60 and 1960-70, the average annual growth rate ofsteel production exceeded 8%. According to Ministry of Steel reports, the total production of Crude Steel in India has been 102.34 million tonnes in 2017-18 as compared to 53.67 million tonnes in 2007-08 indicating an increase of 91% in the last 10 years (i.e. annual growth rate of above 9%).

2.3 IMPORT Vs INDIGENOUS PRODUCTION

Global Crude steel production has recorded an annual growth of 2.6% during last 10 years (2008 to 2018). World crude steel production stands at 1689 million tons during 2016 compare to 1343 million tons during the year 2007.

Annual growth rate of crude steel production was above 9% in India, compare to 2.6% world growth rate and this will continue.

2.4 DEMAND-SUPPLY GAP

The per capita steel consumption in India continues to remain at a level 68 kg in comparison to World average of about 208 Kg and 350 kg in developed countries.

Though, India is 3rd largest producer of steel in the World, India's contribution is only 16.6% of the world steel production. Hence long term and short term strategies are necessary in planning the development of the steel industry in the country to improve the level of per capita steel consumption.

Despite the current concerns over growth, there is a strong view within the industry and the government that due to the intrinsic potential of steel demand growth in India, the longer term opportunities for the sector continue to be strong. Steel consumption significantly depends on the overall performance of the economy (GDP) and more specifically on investments made in fixed assets such as housing, infrastructure like railways, ports, roads, airports, etc.

Private sector is playing an important role in supplementing the requirement of steel in the country. Their contribution in finished steel production has increased to58.9% in 2017-18 as compared to 45% in 1992-93. It is expected that private sector will continue to play a dominant role in the future.

Considering the prospects for the development for Infrastructure, construction and Industrial activity in India in the years to come, large scope exists for increased consumption of long steel products. The projections made by the Ministry of Steel

in its Vision-2020 document, there is a significant domestic demand for steel in the Country.

Considering the demand for steel in these sectors M/s. Kashi Vishwanath Steels Private Limited has planned to expand the production capacity of its existing plant at Kashipur, District Udham Singh Nagar, Uttarakhand.

The State can be benefited from the project as there will be direct employment of large people in the Steel plant. Preference will be given to the people of the state possessing requisite skill and qualification criteria. Also there will be lot of scope for indirect employment of the people of the state in and around the project site.

2.5 DOMESTIC / EXPORT MARKET

India is expected to become the world's second largest producer of crude steel in the next 10 years, moving up from the third position, as its capacity is projected to increase to about 300 Million Tons by 2025. Huge scope for growth is offered by India's comparatively low per capita steel consumption and the expected rise in consumption due to increased infrastructure construction and the thriving automobile and railways sectors.

2.6 EMPLOYMENT GENERATION (DIRECT AND INDIRECT) DUE TO THE PROJECT

Existing manpower of the plant is 400.The estimated additional direct manpower required after the proposed expansion shall be 100, comprising administrative, technical, non-technical, skilled and unskilled workforce. Approx. 70 persons will be employed during construction phase.

The total requirement of manpower in the plant will be available without muchdifficulty as the area has industrial exposure in Iron & steel sector. However, specialized training for operation and maintenance will have to be given toselected candidates well in advance before commissioning of the plant.

In addition to this there shall be indirect requirement of manpower in transportation sector for transportation of raw material. Development of nearby industries also envisaged for supply of additional requirement of Sponge Iron and Pig Iron.

CHAPTER 3
PROJECT DESCRIPTION

3.1 TYPE OF THE PROJECT INCLUDING INTERLINKED AND INTERDEPENDENT PROJECTS, IF ANY

The project is Industrial project listed under activity 3(a) Metallurgical Industries (Ferrous & Non-ferrous) of EIA Notification, 2006 and falls under Category 'A' due to its location within 5kms. from Interstate boarder.

The project is an expansion of existing plant and will be located in the same location where the existing plant is and for which the area is available. Project is standalone project forcreating Steel Making and Rolling facility at one location without dependence on otherprojects.There is no interlinked project or interdependent project.

3.2 LOCATION

As the proposed expansion within the existing plant area, no additional land will be required and expansion shall be carried out within the existing plant premises at Narain Nagar Industrial Estate, Bazpur Road, Kashipur, District Udham Singh Nagar, Uttarakhand.

The project site is located Latitude: 29°11'21.16" N, Longitude: 79°00'09.86" E(central) and Altitude: 235.0 Meters (MSL). Corner coordinates of the existing site is as below:-

Table 3-2: Coordinate of the project site

Sl.No.	Point/Direction	Latitude	Longitude
1	A - SE	29°11'16.07'' N	79°00'10.54'' E
2	B - E	29°11'19.35'' N	79°00'13.16'' E
3	C – E	29°11'21.16'' N	79°00'09.86'' E
4	D - NE	29°11'25.10'' N	79°00'11.46'' E
5	E – NW	29°11'25.10'' N	79°00'04.68'' E
6	F - SW	29°11'20.41'' N	77°00'01.29'' E

Fig. 1: Location of the Project Site.

3.3 DETAILS OF ALTERNATE SITE CONSIDERED

Alternate site not examined as the project is modification of existing facilities within the existing plant area.

State of Uttarakhand is providing suitable Industrial environment with proper infrastructure support.The availability of Raw Material, Power and other infrastructure. Our FinishedProducts buyers are also located in Uttarakhand State.

Land is already available in plant premises at Narain Nagar Industrial Estate,Bazpur Road, Kashipur, District Udham Singh Nagar, Uttarakhand.

3.4 SIZE OR MAGNITUDE OF OPERATION

The project is expansion of existingplant. The project size is as follows:

Plant	Existing			Proposed (Total after the proposed expansion)		
	Unit	Days of Operation	Capacity TPA	Unit	Days of Operation	Capacity TPA
Steel Melting Shop						
Induction Furnace	2x 5 Tons 2x 4 Tons	300		4x 12 Ton	360	207,360
Continuous Casting Machine (CCM) / Ingot Casting	2 Strand, 6/11 m radius	300	57,600	2 Strand, 6/11 m radius	360	204,200
Gas Oxygen Refining Unit	-	-	-	1 x 20 Ton	360	-
Producer Gas plant	Existing Producer Gas Plant shall be phased out after the proposed expansion. PNG Gas will be used in Reheating Furnace					
Metal Recovery Plant	--	--	--	1	300	4 TPD
Reheating Furnace	1 x 45 TPD 1 x 200 TPD	360	-	1 x 45 TPD 1 x 200 TPD	300	-
Rolling Mill						
Low Speed Rolling Mill	45 TPD	360	16,700	120 TPD	350	41,760
High Speed Rolling Mill	200 TPD	360	71,500	452 TPD	350	158,240
Total Rolling Mill Production	245 TPD	360	88,200	572 TPD	350	200,000
Cold Drawing Complex	--	--	--	20 TPD	360	7,200
Industry may either roll MS Billets/Ingots produced in the plant or sold it directly in market. In case sufficient Billets / Ingots produced in the plant are not available for rolling, billets / ingots shall be purchased from the market for rolling, within the maximum production of 200,000 TPA.						

Products

Product	Existing (TPA)	Proposed (TPA)
MS Billets / Pencil Ingots	56,700	204,200
Rolled Products (TMT Bar, Angles, Channels, Beam, Flats, Sq. Bars and Round Bars)	56,700	200,000

3.5 PROJECT DESCRIPTION WITH PROCESS DETAILS

Plant Technical Feature

The existing plant is having 2x5 Ton and 2x4 Ton Induction Furnaces and having capacity for production of 56,700 TPA MS Ingot / MS Billets through either Billet Casteror through Ingot Casting Facility or both. The liquid steel can be routed through either Ingot Casting Facility or through 4/7 radius, 2 strand Billet Casters.

The Raw Material like Sponge Iron, Pig Iron, scrap & Ferro-Alloys are being melted in Induction Furnace and the refined liquid metal is cast into either billets through continuous casting machine or cast in pencil Ingots through Ingot Casting facility.

The present proposal is for replacement of existing 2x5 Tons and 2x4 Ton Induction Furnaces with 4x12 Tons Furnaces for production of 200,000 TPA Rolled products either through Ingot Casting Route or Billet Casting. Casting facilities of both the routes will be increased to meet this enhanced production. Both 'Slow Speed Rolling Mill' and High Speed Rolling Mill will also be modernized by increasing the Output (speed) to achieve combined production of 200,000 TPA from both the mills. A new 1x20 Ton Induction Furnace shall be installed for refining of liquid steel, if required. A 20 TPD Cold Drawing Complex will be installed for production of cold draw products (Ribbed Round Bar).

Operation of existing 2 nos. of Reheating Furnaces shall continue. PNG will be used as fuel in the RH Furnace instead of Producer Gas. The existing Producer Gas Plant will be phased-out after the proposed expansion.

Plant will have the direct rolling facility. Reheating furnace will be used for rolling of ingots or billets from stock or purchased.

3.5.1 Steel Melting Shop

3.5.1.1 Induction Furnace:

IF are basically furnaces meant for use of Sponge Iron as major raw material to produce mild steel. These furnaces work on the principal of electromagnetic induction. After the furnace is switched on, current start flowing at a high rate and comparatively low voltage through the induction coil of the furnace, producing an induced magnetic field inside the central space of the coils where the crucible is located. The induced magnetic field thus generated cut through the packed charge in the crucible. As the magnetic flux cut through the scrap/pig iron and complete the circuit, they generate an induced current in the scrap. The induced current as it flows the highly resistive path of scrap mix, generate tremendous amount of heat and melting the scrap. When these additives have melted completely, the power input may be increased to bring the temperature of metal up to the point most

desirable for pouring. The current is then turned off and the furnace is tilted for pouring into the ladle. As soon as pouring has ceased, the crucible is cleaned completely from any slag or metal droplets adhering to the wall of the crucible and the furnace is now ready for charging again. An induction crucible furnace differs from arc furnace in the ways, which are important metallurgically, though both types of furnaces are used for making steel from scrap and alloys. Induction furnace do possess the following characteristics:

- High relatively, narrow melting vessel
- Low Crucible wall thickness
- Relatively small area of metal in contact with slag
- Low slag temperature
- No carburizing during melting down
- Powerful bath motion

Table Induction Furnace Capacity (Existing & Proposed)

Parameters	Existing	Total after proposed Expansion
Furnace capacity	2x5 Tons & 2x4 Ton	4x12 Tons
Tap-to-tap cycle time/min	120 ~130	120
Number of heat/day	11 ~12	12
No. of operating days	300	360
Total Liquid Steel Production	**58,750**	**207,600**
Billet Production Or Ingot Production	**57,600**	**204,200**

It may be seen from Table above that tap to tap time has been aimed at appox. 120 minutes enabling production of 12 heats per day from each Induction Furnace. The Induction Furnace lining will require repair / replacement after about 15-16 heats. Lining repair will be done in-situ. In order to ensure uninterrupted operations a second crucible, lined and ready should be available. Thus, each furnace station will consist of two crucible complete with all fitting and auxiliaries installed adjacent to each other

High Tension power supply is transferred to the converter through step downtransformers where power is converted from AC to DC. 605 KVA (132, 33, 440KVA) Furnace Transformer has been provided with each furnace and 220 KVA Auxiliary Transformer.

The three phases Oil Immersed Transformer is rugged designed to meet therequirement of lad redefining operation. It will be of continuous duty. Theselection of secondary voltage is effected by means of triple pole remoteoperated on load, tap changer. The transformer is designed for forced coolingand the oil is circulated in the heat exchanger (mounted on tank) by means ofan oil pump, and is cooled by water. In the water circuit, a flow meter withelectrical contacts is provided which gives an alarm in case the cooling waterrate falls below the set value. The primary terminals of the transformer areterminated on top of the tank into HV bushings and the secondary terminals inheavy sectional copper bars.

3.5.1.2 Ingot Casting

Once the furnace contains the full capacity of molten steel (1600 – 1650 °C);slag is manually skimmed off from the top. The slag is skimmed into a slag potkept near the mouth of the furnace on the furnace platform. Next the hydraulictilting device is actuated and liquid metal from the ladle is discharged in therefactory lined central pouring trumpet, which then flows through the bottomplate runners and comes up through bottom hole of the ingot moulds. Arranged properly molten metal is poured through the tunic. Two sets of pencil ingot moulds are usually kept, where one cools the other is prepared etc. for the nextpouring.

Present capacity of the Ingot Casting is 57,600 TPA which will be expanded to 204,200 TPA, after the expansion.

3.5.1.3 Continuous Casting Machine:

The ladle containing liquid steel is placed on the turret and brought over the tundish. The tundish act as a buffer and enable the liquid steel to move homogeneously down through nozzles, provided at the bottom of the tundish into moulds. The automatic mould level controller controls the steel level in the mould. The subsequent primary and secondary cooling transform the liquid steel into billets of the required dimensions and is drawn out with the help of a withdrawal and straightner unit and cut into required length by the online shear provided in each strand. Once a ladle is emptied another ladle is brought into the casting position and the casting continues. The billets are mostly shifted continuously with the help of conveyer to slow speed rolling as well as high speed rolling mills to produce required long rolled products and then stacked orderly at the dispatch end for outside dispatch.

Present production capacity of the CCM is 57,600 TPA which will be expanded to 204,200 TPA, after the expansion.

Proposed expansion may leads a feasibility to produce either Mild Steel Billets or Ingots or both. It may either used for making Rolled products in the Rolling Mill or sold in the market as such.

3.5.1.4 Gas Oxygen Refining Units:

1x20 Ton Gas Oxygen Refining Unit shall be installed under the proposed expansion for refining of liquid steel with the help of small quantity of polyethylene glycol, hydrogen peroxide, Ammonia water/Gas, Ammonium chloride (one time), Calcium chloride(one time)HCL(one time)

3.5.1.5 Other facilities

DM Plant: Apart from the above, the electrical control panel of Induction furnace needs to be cooled by De-mineralized water primarily to avoid anyelectrical conduction through cooling water. To achieve this, 2 nos. of DM Plantof capacity 10,000 LPD, each have been provided. Additionally, one DM Plant of capacity 6,000 LPD shall be installed under the proposed expansion.

Softening Plant: 3 nos. of Softening Plants of capacity 40,000 LPD are installed and are sufficient for future use.

Cranes: 2x25/10 MT and 2x10/5 MT EOT cranes to handle the raw material and finished product have been provided. All cranes will comply IS 3177 – Code of practice for electric overhead travelling cranes and IS-807 – Code of practicefor electric overhead traveling cranes, which is meant for EOT cranes in steel plants. Under the proposed expansion, additionally 1x50/15 MT and 1x15/10 MT EOT Cranes shall be required.

Cooling Water System: The system will take care of cooling water requirement ofInduction Coil, magnetic yokes, and water cooled cables. 2 nos. of CoolingTowers of capacity 210 Cubic meters have been provided. While 2 nos. ofCooling Towers of capacity 240 Cubic meters are proposed.

Ventilation Plant: Ventilation system for Air cooling of the electrical room and the electrical equipment comprising of blower fan and exhaust fan, fan motor andfilters are housed in the same building. Air from the blower leads to the electricalroom through ducts.

3.5.2. Reheating Furnace

2 nos. of Reheating Furnaces have been provided one each with Slow Speed Rolling Mill and High Speed Rolling Mill. At present Billets are directly fed from CCM to the Rolling Mill bypassing the Reheating Furnace. Reheating Furnace is used only when there is no feed from CCM.

Reheating furnace is used for heating of billets/Ingots before hot rolling in Rolling Mill.The billets produced, as described above are cut into required sizes and then fed into a reheating furnace where it is reheated to temperatures up to of 1050°C; the rate at which heat is absorbed by the billet has to be controlled to avoid partialrolling. Producer Gas is presently being used as fuel in reheating furnace. Company is now proposed to replace the existing producer gas fired Furnace with natural gas as fuel under the cleaner technology, thereby reducing theemissions.

No change is proposed in the existing Reheating Furnace, except the change of fuel.

3.5.3 Rolling Mill

The billets produced in CCM (Size-100x100 to 125x125 mm) or Pencil Ingot produced in Ingot Casting Section will be fed directly to Rolling Mill. There will be One High speed rolling mill for of capacity 200 TPD for production of 71,500 TPA TMT Bars varying from 08mm to 28mm in size and One Slow Speed Mill of 45 TPD capacity for production of 16,700 TPA for production of Angles, Channels, Beam, Flats, Sq. Bars and Round Bars.

Under the proposed expansion, the production capacity of the High Speed Rolling Mill will be increased from 71,500 TPA to 158,200 TPA and Slow Speed Mill from 16,700 TPA to 41,760 TPA by increasing output (speed) of the Rollers.

Ms KVS may purchase the Billets/Ingotsfrom local market for making Bars/Sections as pereventually changes in the market.

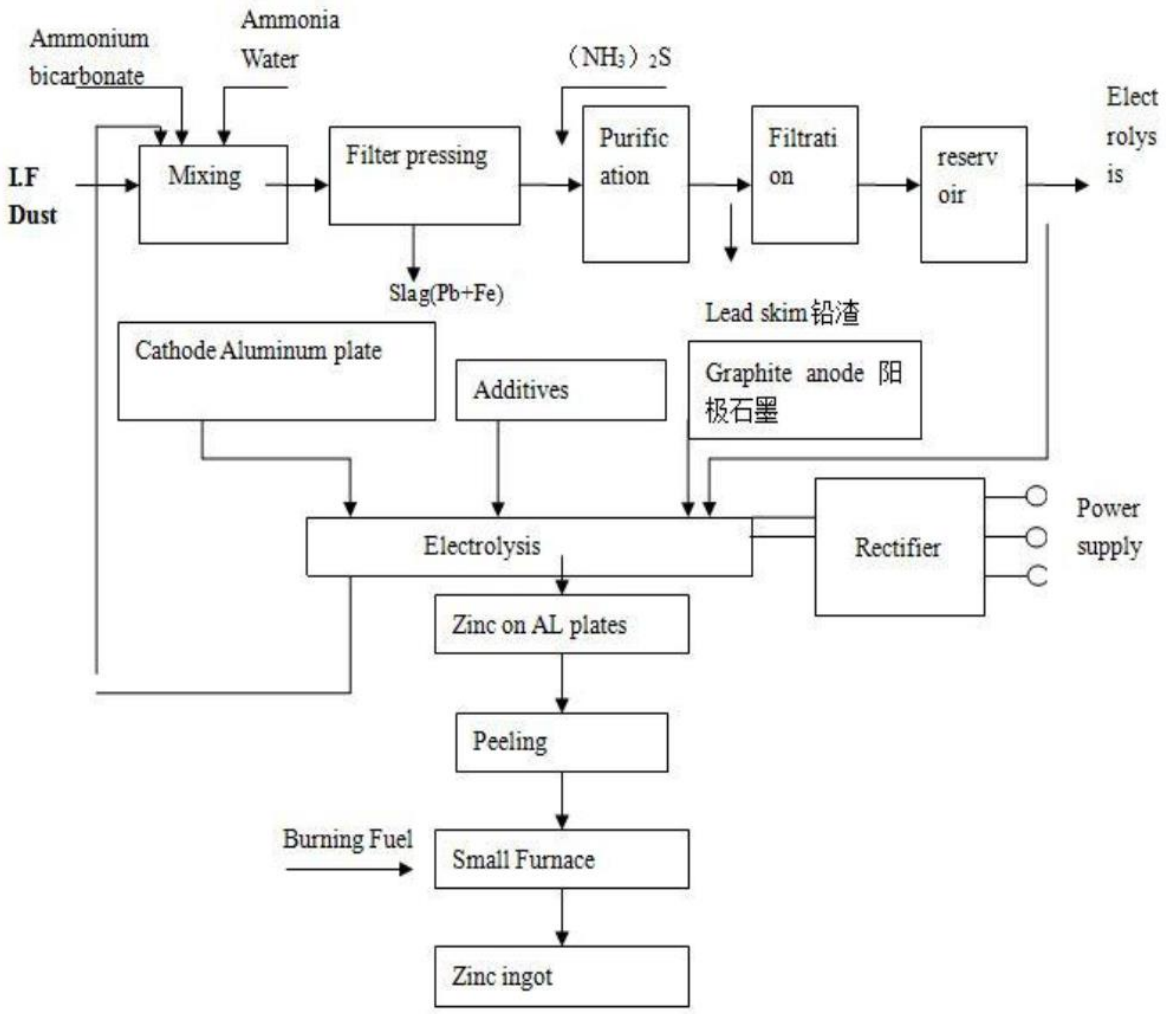
3.5.4 Cold Drawing Complex

Cold drawing machines for production of 20 TPD i.e. 7,200 TPA shall be installed for production of Ribbed bars / M.S Bars of different diameter will be pulled/Cold rolled through series of dies/rollers. These cold drawn products have high mechanical strength and so high market demand.

3.5.5 Induction Furnace Dust Recycling Plant

During processing with Induction furnace, fumes / dust are generated because of the combustion of Scrap or DRI. This dust has some percentage of lead. The

Company is proposing to install a facility to extract these harmful impurities, based on a matured technology and to dispose of this dust properly. The harmful impurities will be extracted and could be sold as a raw material to the concerned industry. For e.g. Lead extracted would be sent to lead industry as raw material. The process consists of extracting harmful elements from the fumes/dust which are produced during the melting of scrap in Induction furnaces. 100% of Lead and Iron will be extracted from the Furnace dust. This is a Green process, no Harmful chemical will used in this process. No waste water will be generated from the process and all additives used in this process are easily available and are safe to use. A 500 kg Furnace (01No.) shall be installed for metal recovered from the APCS dust.



3.6 RAW MATERIAL REQUIREMENT

The proposed site is located near the National Highway and Eastern Railway line. The Raw materials and products can easily be transported to the site. The site is also close to the raw material availability area for the project. The connectivity of the site is very good through State Highway Road connecting the site.

Annual Requirement of Raw Material and source

Sl.No	Raw Material	Ratio	Quantity (TPA)		Source of Raw Materials
			Existing	Total after the proposed expansion	
Steel Melting Shop – Induction Furnace			**58,750**	**207,600**	
1.	Sponge iron	0.84	49,247	174,130	Keonjhar, Odisha
2.	Scrap / Pig Iron	0.245	14,410	50,882	Delhi & UP
3.	Ferro Alloys (FeMn, FeSi, Al)	0.005	340	1,130	Raipur & UP
Total		**1.09**	**63,997**	**226.142**	
Steel Melting Shop – Billet Caster			**57,600**	**204,200**	
1	Liquid Steel	**1.02**	**58,750**	**207,600**	In-house
Steel Melting Shop – Ingot Casting			**57,600**	**204,200**	
1	Liquid Steel	**1.02**	**58,750**	**207,600**	In-house
High Speed Rolling Mill			**71,500**	**158,240**	
1	MS Ingots/ MS Billets (In-house)	1.02	40,600	161,550	In-house
2	MS Ingots/ MS Billets (Purchased)	1.02	32,335	-	Open Market
Total		**1.02**	**72,935**	**161,550**	
Slow Speed Rolling Mill			**16,700**	**41,760**	
1	MS Ingots/ MS Billets (In-house)	1.02	17,000	42,650	In-house
Total		**1.02**	**17,000**	**42,650**	
Cold Drawing Complex					
1	MS Rod	**1.0**	---	7,200	In-house

3.7 RESOURCE OPTIMISATION

Water Requirement

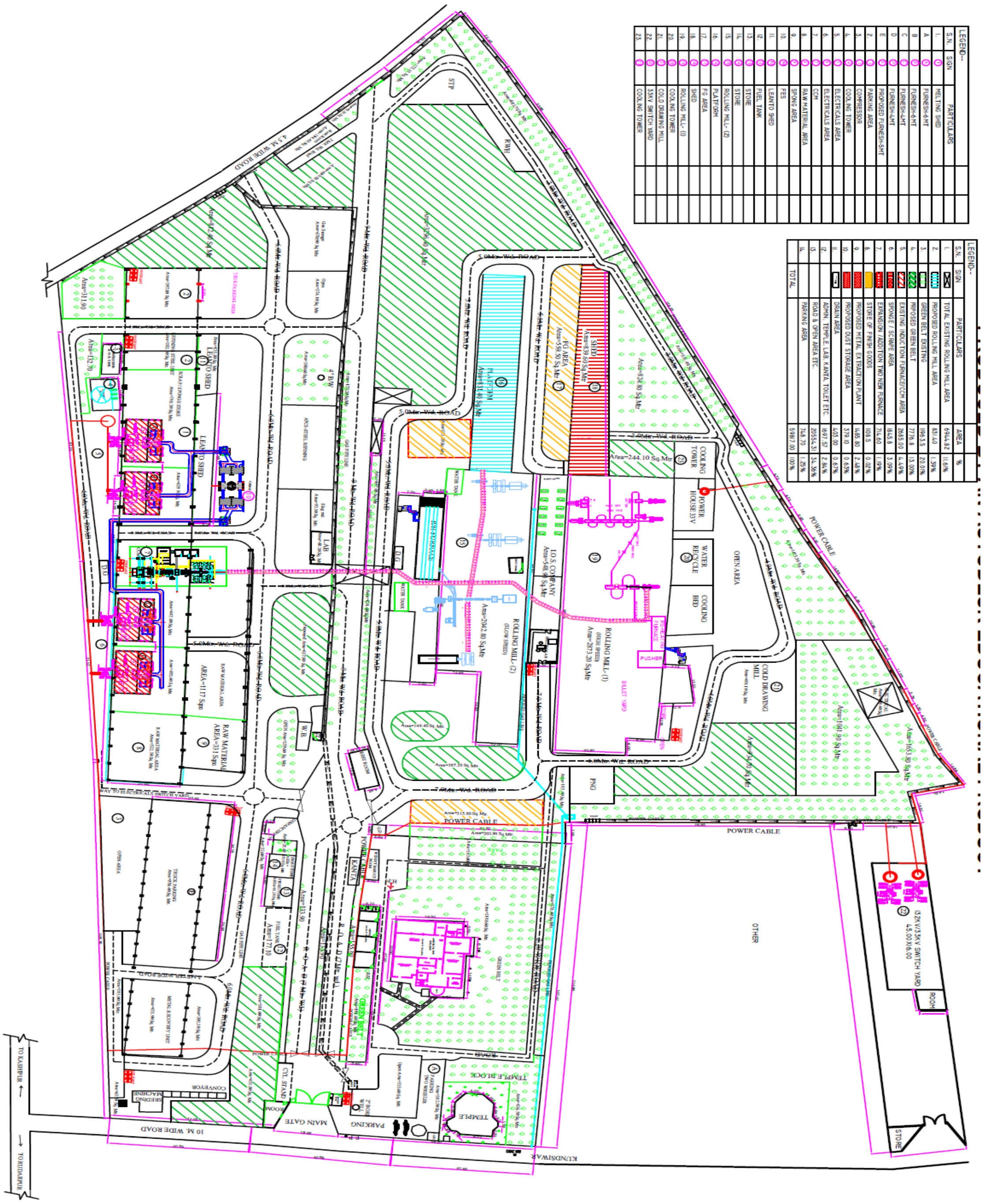
The requirement of makeup water for industrial and domestic purposes after the proposed will be201m³/day. The requirement will be met from deep bore wells. Permission forthe same shall be obtained from Ground water Resource Development Authority, Uttarakhand.

Units	Water Requirement (KLD)	
	Existing	Total after Expansion
Induction Furnace	35	110
CCM & Rolling Mill Process – Direct Cooling	40	130
Producer Gas Plant	12	--
Miscellaneous i.e. Dust suppression	3	5
Domestic Purpose	5	10
Green Belt	10	40
Total	**105**	**295**

3.8 SOLID WASTE GENERATION AND MANAGEMENT

Type of Waste	Quantity in Tons (TPA)		Mode of Disposal
	Existing	Total after the proposed expansion	
IF Slag	3,775	13,340	After metal recovery (approx. 10%), remaining slag shall be crushed and will be used as aggregates
IF Bag Filter Dust	192	680	Shall be given to Sinter Plant or Pallet Plant
Scale from CCM	395	1,200	Shall be given to Sinter Plant
Mill scale from Rolling Mill	630	1,500	Shall be given to Sinter Plant
Total	**4,992**	**16,720**	

3.9 PLANT LAYOUT DRAWING



CHAPTER 4
SITE ANALYSIS

4.1 CONNECTIVITY

Site Location	Narain Nagar Industrial Estate, Bazpur Road, Kashipur, District Udham Singh Nagar, Uttarakhand
Height above MSL	235 meters
Road Connectivity	NH-309is 0.30km away from the site.
Rail Connectivity	The nearest Railway Station is Kashipur, 4.5kms. from the project site in NW.
Nearest Airport	Pant Nagar Domestic Air Port -48 km in SE
National Park, Wildlife Sanctuary, Reserve Forest within 10 kms.	Nil

4.2 LAND FORM, LAND USE AND LAND OWNERSHIP

M/s Kashi Vishwanath Steels Private Limited (KVS) has acquired 14.78 Acres(59,817.0 Sq. m) land in notified industrial estate (Notified by Govt. of Uttarakhand vide letter no. 1052/ID/07-Industry/2004-05, dated 15 January 2005)at Narain Nagar Industrial Estate, Bazpur Road, Kashipur, District Udham Singh Nagar, Uttarakhand.

The expansion project will be located within the existing plant area.

Table: Existing Land Use pattern

Sl. No.	Facility	Area in Sq. meter	Percentage
1	Built up area for Plant & Facilities (ground coverage)	28737.70	48.04
2	Roads & Drains	4470.00	7.47
3	Greenbelt	19740.00	33.0
4	Common plot area	6,869.30	11.49
Total		**58817.00**	**100**

4.3 TOPOGRAPHY OF THE LAND

Udham Singh Nagar district may be broadly divided into two physiographic unitsfrom north to south viz., Bhabar and Tarai respectively. Since the area is

located in the Himalayan foothills, a very thick column of alluvium is deposited, which further is classified into two distinct divisions:

(A) The piedmont fan deposits known as Bhabar

(B) The Tarai Alluvium

These zones spread in northeast – southwest direction all along the foothills of the Siwalik formation having a maximum width of less than 30 km. The general gradient towards south varies from 9 to 17 m/km. The slope gradually decreases towards south in the Tarai region and becomes almost flat close to the boundary between Tarai and Central Ganga plains, which exists few km south of the southern boundary of the study area. The geomorphology of an area plays a very significant role in the groundwater movement and occurrence. The Tarai soils run all along the northern extremity of the district, form continuous fringe with the Bhabar Zone. Bhabar formation is found in extreme northern parts of the Khatima and Bazpur blocks, boundary demarcated by the contact of Tarai and Bhabar. The Tarai belt is 8–25 km in width, and the general slope is <1% towards south. Soil is calcareous, moderately productive and suitable for extensive cultivation of high yielding variety of crops like rice and sugar cane. Soils typify marshy and swampy environment.

4.4 EXISTING INFRASTRUCTURE

Plant Water System: Water required in Cooling Tower as make up. Raw waterrequirement for CT, DM plant, area cleaning system etc. shall be met throughbore-wells. Water tank of adequate capacity (depending upon equipmentrequirement & workforce) has been constructed within the premises.

Compressed Air System: Compresses air is required primarily at three locations in the plant viz. in Induction Furnace, in CCM & in Dust Extraction System (bag filters).

Fire Protection System: Adequate fire-fighting equipment has been provided for each production unit. Following systems of fire protection has been provided in the steel plant:

- Water hydrants network around all the shops.
- Smoke detectors in critical areas such as control rooms
- CO_2 type portable fire extinguishers for electrical rooms flooding system and
- Foam type fire extinguishers near lubrication, hydraulic and fuel oil installation.

Adequate number of portable fire extinguishers will be provided at various locations in the plant shed, LT panel room & DG set room.

Plant Electrical System: Plant Electrical System will have a 33 or 132 kV outdoor type sub-station. The power supply through furnace transformers will be supplied to furnace whereas power supply through auxiliary transformer which will be used for EOT crane operations, CCM operations, furnace auxiliaries, pumps for cooling water, lighting etc.

Emergency Back-up Power: 1 no. of 63 KVA silent type DG set has been provided already which to be replaced&685 KVA (125, 160 & 400 KVA on standby basis). DG Set is proposed for power to the auxiliaries of plant when UPCL power is not available. This will also be useful for emergency power to take care of safe shut down of important auxiliaries of plant. During total power failure, above DG set will also support for Emergency lighting for personnel movement in some main location of steel plant.

Storage Yard: Raw material shall be brought to the yard in trucks are unloaded and stacked indifferent piles by pay loaders.

4.5 SOIL CLASSIFICATION

The soil types are controlled by the topography and rock types. Based on the National bureau of soil Survey and Land Use Planning (ICAR) Nagpur, the soils of the district Udham Singh Nagar can be classified into UdifluventicUstochrepts, TypicUstipsamments, UdicUstochrepts, UdicHaplusstolls, TypicUstochrepts as determined by their diagnostic properties. The Bhabar soils lay at the northern extremity of Khatima and Bazpur blocks, part of the alluvial fan deposits. Soils are shallow with sandy to loamy texture, poorly sorted, comprising mainly of gravel, sand, silt, clay with pebbles etc.

4.6 CLIMATE DATA

The climate varies from Sub-tropical and sub-humid with three distinct seasons i.e. summer, monsoon (rainy season) and winter. The rainy season starts from the month of middle June to September end, and followed by the winter season, which starts from the end of October and goes up to February. The winter rains are generally experienced in late December or early January, which brings down the temperature and that's how December and January are the coldest months in the district. The summer season starts from March and it goes up to June. The hottest months of the year are May and June. The maximum temperature in the district goes up to 42°C during the summers and the minimum temperature is

between 1 and 4°C, further north of the district, the temperature comes down to 0.4°C in winter season. Rainfall, spatially, is highly variable depending upon the altitude. The intensity of the rainfall increases from south to north and the amount of rainfall decreases in generally from west to east. About 90% of the rainfall received during the monsoon period, and the remaining 10% of the rainfall in non-monsoon period. The average annual rainfall is 1296.85 mm.

4.7 SOCIAL INFRASTRUCTURE

Infrastructure is the basic physical and organizational structures needed for theoperation of a society or enterprise or the services and facilities necessary for aneconomy to function.

Kashipur is a major transport hub in Uttarakhand, acting as a gateway for thecities of Ranikhet, Pauri and Gairsain. The city is served by the National HighwaysNH 309 and NH 734. The NH 734 (formerly NH 74) connects to Najibabad viaJaspur and Nagina, while the NH 309 connects Kashipur to Rudrapur in the east,and the cities of Ramnagar and Srinagar to the north.

Major tourist attractions in the city include:

- Drona Sagar Lake
- Shree Moteshwar Mahadev Mandir
- Maa Balsundari Mandir
- Chaiti Mela
- Gurudwara Shri Nankana Sahib
- Tumaria Dam
- Giri Sarovar
- Arya Samaj Mandir

Kashipur is home to four colleges affiliated to the Kumaun University, Nainital: Radhey Hari Government P.G. College, Chandrawati Tewari Girls P. G. College, Sriram Institute of Management and Technology and Kashipur college of Education. The city also hosts the campus of an Indian Institute of Management. The Indian Institute of Management Kashipur, also known as IIM Kashipur, is a public business school located in the Escorts Farm area of the city. It is one of the thirteen Indian Institutes of Managements the government has set up during the Eleventh Five-year Plan.

CHAPTER 5
PLANNING BRIEF

5.1 PLANNING CONCEPT

M/s Kashi Vishwanath Steels Private Limited is having the existing production capacity for production of MS Ingots / MS Billets 57,600 TPA and Rolled products 88,200 TPA. Now Company is proposed for expansion of the existing units for production of MS Ingots / MS Billets by 146,600 MTPA and Rolled product by 111,800 to achieve final production of MS Ingots / MS Billets of 204,200 TPA and Rolled products by 200,000 TPA through replacement of existing 2x4Ton IF augmentation in the existing Induction Furnace capacity & required Utilities. Company is also proposed to replace the existing Coal fired Furnace with natural gas based fuel under the cleaner technology.

Material will be transported by Rail & Road. Nearest railway station, Kashipur is 4.5kms. from the project site and NH-309 is 0.3kms. from the project site.

5.2 POPULATION PROJECTION

Existing employment is 400 persons. Manpower requirement for the proposed expansion shall be limited to 100 and will be sourced from local population. Hence there will not be increase in population due to direct employment in the area due to the proposed expansion.

5.3 LAND USE PLANNING

Total area of the plant is 5.981 Ha. 33% of the area will be used for greenbelt development. Land will be required for installation Induction Furnace, LRF, Cold Drawing M/cs and other allied facilities, which shall be installed within the existing plant area. No additional land shall be required for the proposed expansion.

5.4 ASSESSMENT OF INFRASTRUCTURE DEMAND

Project is located in area with already available infrastructure. The plant has well connected National Highway as mentioned in the above chapters.Plant has also well-developed connecting roads inside plants for movement of raw material, storage areas for raw materials and finished products since the plant is under operation.

There is no additional infrastructure required for the proposed expansion.

5.5 AMENITIES / FACILITIES

The following facilities are already available at the project site as it is an

operational plant:

- Administration Building
- Stores
- Time and security offices
- First aid and fire-fighting station
- Canteen and welfare center
- Toilets and Rest rooms
- Car parks and cycle / scooter stands
- Training Center

No other additional facilities are proposed. Office space are provided as per good practice and canteens, toilets andrestrooms according to norms laid down in relevant factories act. The abovefacilities are also be adequately furnished and equipped.

CHAPTER 6
PROPOSED INFRASTRUCTURE

5.1 INDUSTRIAL AREA (PROCESSING AREA)

M/s Kashi Vishwanath Steels Private Limited is within the industrial area. Infrastructure for the drawl of additional power and ground water to meet the future requirement shall be developed. All other facilities are already available at site i.e. administrative and site control office with latestequipment like computers, walkie-talkie & computerized weigh-bridge, printers, fax, Xerox machine, etc.

6.2 RESIDENTIAL AREA (NON PROCESSING AREA)

There is no proposal of any residential colony as the required manpower will be sourced from local population.

6.3 GREEN BELT

Green Belt will be developed over 33% of the plant area. Indigenous trees will be planted in 1.91 Ha. out of the total area of 5.981 Ha.Tree density of 2500 trees per hectarewith local board leaf specification will be planted.

6.4 SOCIAL INFRASTRUCTURE

Schools, colleges, hospitals & healthcare centers, shops & bazaars, Community centers, etc. are all available in nearby area.

6.5 CONNECTIVITY

Project site is well connected by road and rail.

Road Connectivity through National Highway NH-309, which is 0.3 km away from the site.

Rail connectivity – Kashipur Railway Station is 4.5 km away

No further development is required

6.6 DRINKING WATER MANAGEMENT

Raw water from bore wells will be treated in Water Treatment Plant and is being supplied for drinking purpose in Offices, Canteen and Work place. Employees are being provided potable water for drinking.

6.7 SEWAGE SYSTEM

Septic tank with Soak Pits will be provided for sewage waste

6.8 INDUSTRIAL WASTE MANAGEMENT

Solid waste produced from proposed expansion is dust; scrap i.e. end cuttings and slag. Iron bearing dust will be sold to the nearby Sinter plant. Slag from Induction Furnaces will be crushed and after metal recovery, residue will be used as aggregates for construction purpose and for road development. Metals i.e. Zinc & Lead will be extracted from IF dust generated during process. Hazardous Wastes i.e. 'Used oil' generated during Operation phase will be dealt as per Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.

Waste water generated during the process shall be either recycled or reused.

6.9 POWER REQUIREMENT & SUPPLY / SOURCE

After proposed expansion, the Unit at full capacity will demand 26.5 MW of power, which shall be supplied through Grid (UPCL). Existing power demand is 16.5 MW.

Existing DG Set: 63 KVA (which to be replaced). Green insulated DG Set of 685 KVA (125, 160 & 400 KVA on standby basis) is proposed (Proposed DG Set to be operated during emergency in case of power failure only).

CHAPTER 7
REHIBILITATION AND RESETTLEMENT (R&R) PLAN

No land is required for the proposed expansion. Hence, Resettlement & Rehabilitation is not required as there is no land acquisition or displacement of any houses, habitation or livestock.

CHAPTER 8
PROJECT SCHEDULE & COST ESTIMATE

8.1 PROJECT SCHEDULE

M/s Kashi Vishwanath Steels Private Limited has initiated actions to get statutory clearances to start the project. Clearances required are Environmental Clearance from Ministry of Environment, Forest & Climate Change and Consent to Establish from Uttarakhand and Environment Conservation & Pollution Control Board.

Completion schedule of the project is 24 months. "Zero date" for a project is reckoned as the date on which the all statutory clearance to start the project are received.

Sl.No.	Activity	Schedule in Months
1	Consent to Establish	Zero date
2	Placement of Order	1 months
3.	Civil & Structural work	5 months
4.	Procurement, Installation & Commissioning	18 months
Total		**24 months**

8.2 COST ESTIMATE

Total Project Cost is estimated as Rs. 48Crs. including cost of existing plant as Rs. 36Crores. Project Cost for additional facilities is estimated as Rs.12.12Crores.

Sl.No.	Item	Cost (Rs. In lakhs)
1	Civil & Structural Cost	200
2	Plant & Machinery	1,800
Total Project Cost		**2,000**

The project will be funded from internal accrual of the company and bank loan.

CHAPTER 9
ANALYSIS OF PROPOSAL

Over the last few years, there has been a great change in the Indian Economic Scenario due to Global slowdown which affected the whole world including India. The major sector which took the toll was Steel & Power Sector.

M/s Kashi Vishwanath Steels Private Limited is presently operating Induction Furnace of with annual production of 57600 TPA MS Billets / MS Ingots and 88200 TPA Rolled products.

To make end product economically viable in present fluctuating market, M/s KVShave decided to go for expansion by replacement of the existing Induction Furnaces and modernize Continuous Casting Machine (CCM) &increasing theoutput (speed) of existing Rolling Mill through modernization to enhance theannual production capacity from existing MS Ingots 57,600 TPA to 204,200 TPA and Rolled Products from 88,200 to 200,000 TPA, respectively. Capacity expansion will essentially meet the increasing steel demand in India.

Company is also proposed to replace thefuel of existing Coal fired Furnace with Natural Gas under the cleanertechnology.

The proposed expansion & modernization project will become beneficial to thesurrounding area or community in terms of infrastructural development, socialdevelopment, employment and other benefits. The proposed project has apotential for employment of skilled, semiskilled and unskilled employees' during construction phase as well as operation phase. Additionally 100 nos. of person islikely to get employment due to the project.

The Directors of KVS are experiencedIndustrialist, dynamic, practical, hardworking &self-made entrepreneur. They have excellent reputation in & around Uttar Pradesh, Uttarakhand, Bihar, Sikkim and North Eastern States. The products will be produced indigenously and will be consumed in the country and also outside the country as per the demand.

The managementteam consists of experienced and matured professionals. The team isquite capable of managing the business.Therefore, no financialproblem is envisaged.

The technology involved in expansion project is well provenand reliable. Manyplants are operating all over the country in this pattern are successful.All equipment purchasedshall be brand new & latest in model and will be purchased

fromreputed suppliers. For O&M of the plant, experienced Engineers /Technicians are available in the region.

Project is technically and financially viable with positive impact on the local infrastructure.

In view of the Expansion Project, it can be concluded from the matrices that the resultant impact is beneficial inthe interest of common man, the society, the state and as the country as awhole.

The benefits can be summarized as below:

1. The proposed project will provide quality steel product to the users. This project is essential in-view of production of high value downstream products. KVS Premiere group is endeavoring in manufacturing Construction Steel & Structural Sections as per BIS Specifications 2830:2012, 2831:2012, 1786:2008, 2062: 2011, 15911:2010.
2. There should be positive impact on the socio-economic condition of the area in terms of direct and indirect employment due to the proposed expansion project.
3. Numbers of local trained persons are likely to find jobs.
4. This is cost effective & energy efficient proposal and aims at sustainable development.
5. These products also have export potential. Hence, possibility of earning foreign exchange.

M/s Kashi Vishwanath Steels Private Limited is technically feasible and financially viable hencerecommended for implementation.
