PROJECT DESCRIPTION FOR SCOPING

For

PROPOSED STEEL SMELTING PLANT WITH ROLLING MILL PROJECT

National Road, Barangay Luntal, Municipality of Tuy
Province of Batangas

PROJECT FACT SHEET

Project Title	:	Proposed Steel Smelting Plant with Rolling MilII Project
Project Location	:	National Road, Brgy. Luntal, Municipality of Tuy, Province of Batangas
Nature of the Project	:	Melting and Rolling Mill
Total Area Covered	:	69, 124 square meters
Production Rate	:	Melting – 600,000 MTPY Rolling – 600,000 MTPY
Estimated Manpower	:	85 employees

Project Proponent	:	**BQC STAR STEEL CORPORATION**
Proponent Address	:	National Road, Barangay Luntal, Tuy Batangas
SEC Registration	:	CS201950209
Type of Organization	:	Corporation
Date of Registration	:	January 17, 2019
Authorized Signatory	:	Ms. Emily Tan
Designation	:	Chief Operating Officer
Contact Details	:	02-29699924
EIS Consultant	:	**GREEN BRIDGE ENVIRONMENTAL CONSULTANCY**
Address	:	72 E. Jacinto Street, Sto. Nino, Marikina City
Contact Person	:	Ms. Bethany Soriano
Contact Number	:	09989675452/02-8371415

1 PROJECT DESCRIPTION

1.1 PROJECT BACKGROUND

The proposed project is a Steel Smelting Plant with Rolling Mill to be situated at the National Road, Barangay Luntal, Municipality of Tuy, Province of Batangas with an area of Sixty-Nine Thousand One Hundred Twenty-Three Square Meters (69,123 sqm, an industrial zoned land area and covered by Land Title Number Nos. 055-2018003076 and 055-2018003073 with a total capacity of 1, 700 metric ton per day for smelting and 1, 700 metric ton per day for rolling mill, owned by **BQC STAR STEEL CORPORATION.**

The smelting plant is a recycling plant of scrap steel materials. The scrap materials shall be sourced or bought from existing local scrap facilities or Materials Recovery Facilities (MRF) in Batangas and nearby provinces. These shall be conveyed by delivery trucks to the scrap yard of the proposed smelting plant (detailed process is described at paragraph 1.4)

BQC STAR STEEL CORPORATION is a family owned company. A company that is designed, by professionals who have established their specialized positions in their careers that have gained vital experiences from the firms that they have worked with and handled for.

This company is engaged particularly in steel manufacturing. As a growing concern, the Company has acquired a network of manpower resources which is a mixture of young management backed by choice and trained engineers, supervisors, and workers to complement its organization. In special cases, the knowledge is completed with the help of selected specialist, where, **BQC STAR STEEL CORPORATION**, have taken the full responsibility to its valued customers.

BQC STAR STEEL CORPORATION was organized under the Philippine Law on January 17, 2019 and it is situated at the National Road, of Barangay Luntal, Tuy, Batangas. The Company is represented by its President/Chairman of the Board, Mr. Bing Qing Chen.

The Company's pride is to produce the cost efficient materials to meet the country's demand for a supply of steel metal products that will pass the international standard, affordable and accessible to the public. It enables the Philippines economy to grow in a state-of-the-art environment controls in its operation.

In addition to the plant facility's improvement, is the Company's strong position in the market that will include the following:

- High experience in steel manufacturing
- Consistent source of scrap metal
- Efficient production processes
- Constantly striving to excel in customer satisfaction

THE KEY PERSONEL

BING QING CHEN (nickname -Edwin) was currently holding a position of Chairman of the Board and President of BQC Star Steel Corporation.

Edwin has more than twenty (20) years of experience in managing the financial aspect of a real estate company. Edwin is at the same time the Chairman and Treasurer of B&E Realty Corporation, the Developer of East Forbes Mansions, a high – end subdivision located at Brgy. San Isidro, Cainta, Rizal and Comptroller of Goldstar Realty and Development Corporation. His good business acumen has earned him the

management of the following corporations, to wit: (1) President – Fortune Star Construction & Development Corporation.

To date, Edwin is very active in his civic duties, he is a Board Member and Chairman of Property Committee of the Federation of Filipino – Chinese Chamber of Commerce and Industry, Inc., and he is also the Past President of Eastern Rizal Filipino – Chinese Chamber of Commerce

Edwin obtained his educational attainment in Juan Hua Overseas School in China in year 1982.

LEILA C. CHEN, administers the profit growth of Goldstar, the management of its personnel and the relationship of the company to its customers and clients. Leila joined Goldstar as Director in 2005. Aside from Goldstar, Leila manages to hold key positions in the following companies, to wit:

- Vice President - Goldstar Realty and Development Corp.
- General Manager - K Shine Enterprises
- Treasurer - Fortune Star Construction & Development Corporation
- General Manager - BesT BLK Trading Corp. and
- Treasurer - Hopefull Trading Corporation. Leila is also The proprietress of Fortune Star Trading and ECF Lumber Hardware and Construction Supply.

Leila finished her Bachelor of Science in Commerce at the University of San Agustin, Iloilo City, Philippines.

1.2 PROJECT LOCATION AND AREA

The proposed project will be located within the Sixty-Nine Thousand One Hundred Twent-Three Square Meters (69,123 sqm) industrial zoned land area property of **BQC STAR STEEL CORPORATION** at National Road, Brgy. Luntal, Municipality of Tuy, Province of Batangas and covered by Land Title Number Nos. 055-2018003076 and 055-2018003073.

1.2.1 Vicinity and Accessibility of the Project Site

Tuy is an upland municipality. It is located on the western part of Batangas Province, about 98 kilometers from Manila and around 55 kilometers from Batangas City. It is bounded on the north by the Municipality of Nasugbu with Palico River as its boundary, on the west by the Municipality of Lian with Mount Talipusngo as its boundary, on the east by the Municipalities of Nasugbu, Balayan and Calaca with Mount Batulao as boundary, and on the south by the Municipality of Balayan with Munting Tubig and Molino River as boundaries. The geographical coordinates of the project site are 14.21000 latitude and 120.4233 longitude. The project site is accessible by any land transportation, the national highway passing through it, from Manila to other towns of the first district of Batangas via Tagaytay City.

The primary impact areas of the proposed Steel Smelting Plant with Rolling Mill operations are located within the property of the Company, the project site and will extend to the immediate periphery. The establishments in the periphery are expected to experience the major environmental impacts of the project such as noise and air emission. The secondary impact area is expected to extend to a distance of about 500 meters to 1 kilometer each from the project sites. The secondary impact area is anticipated to experience impacts related to traffic, air emission, and other socio-economic

impacts of the project. The extent of the impact areas will be further validated during the conduct of the EIA study.

1.3 PROJECT RATIONALE

The steel industry in the Philippines is one of the most significant growth industries. Steel constitutes a basic industry prerequisite in a country's pursuit of development and industrialization. The central role of the industry stems from its linkages with numerous sectors, where its products serve as an essential input to countless uses, such as building and construction, automotive, shipbuilding and repair, electronics, packaging, etc. and it's equally important contributions to employment generation, growth, and promotion of industrial activity, etc. Therefore, ensuring a strong domestic steel and steel based industry is vital in developing the competitive edge of a country in meeting the challenges of globalization.

Foremost of the development is the market demand prompted by the growing infrastructures all over the country. Business and residential districts have sprouted and with it comes the need to supply more steel bars.

Figure 0.1 Project Location relative to the province of Batangas

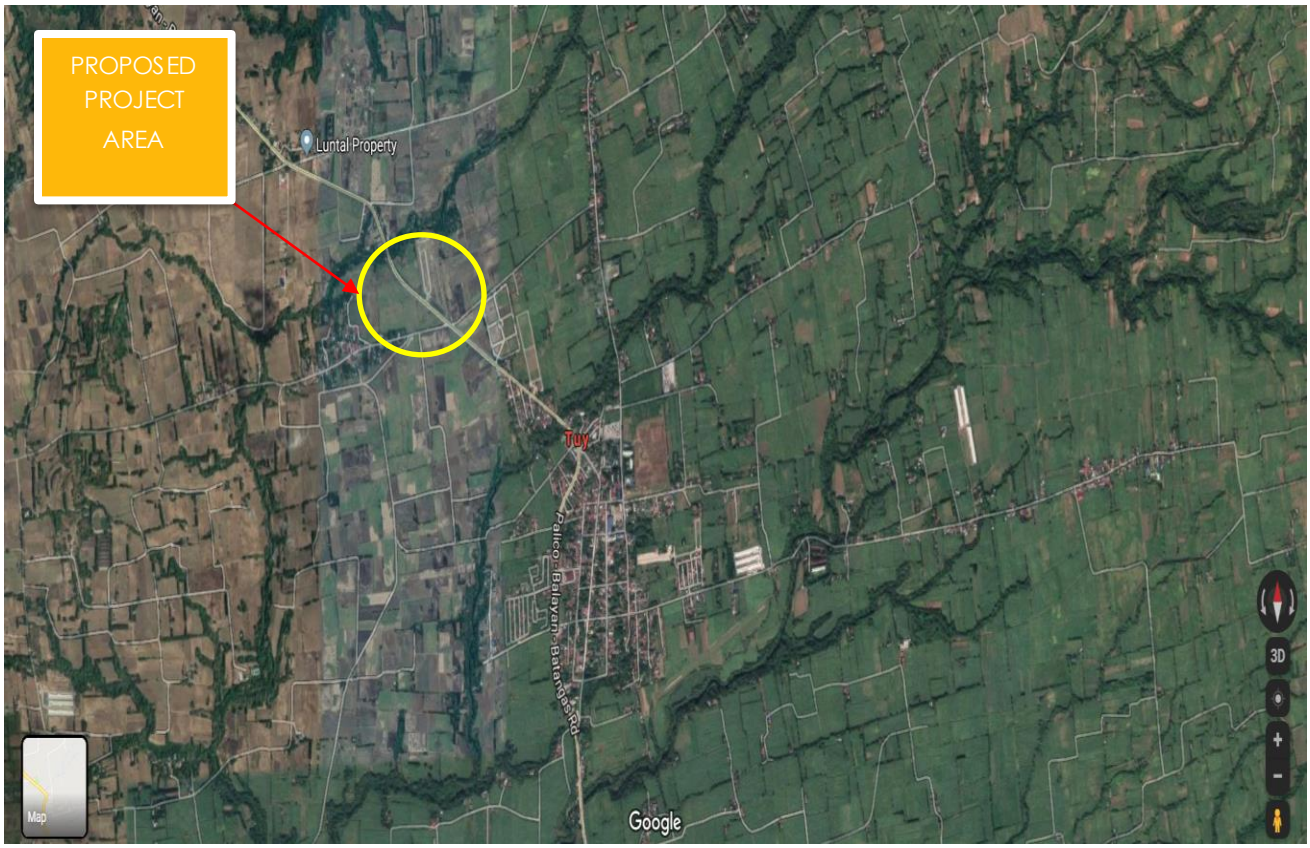


Figure 0.2 Project Location and EIA Study Area

1.4 PROJECT ALTERNATIVES

Following were the criteria used in determining project options:

The Project Site Alternatives considered accessibility to utilities and human settlement as among the factors significant in the selection of the project site, as follows:

The proponent together with the EIS preparer conducted community survey in the proposed project area

To gauge community's perception on the project, an initial perception survey was conducted in four different barangays around the proposed project area. These barangays are:

- Luntal
- Dalima
- Sabang
- Bagong Pook

The survey was conducted from 20 to 25 June 2019. A total of 30 respondents were surveyed with more than 46% of the total respondents are located in Barangay Luntal. This area is considered as the primary impact area where the entire length of proposed location runs along almost 50% of the entire high density area of said barangay.

The secondary impact areas are Barangay Dalima, Barangay Sabang and Bagong Pook which also part of the survey. These barangays are bordered with by rice fields and a national road.

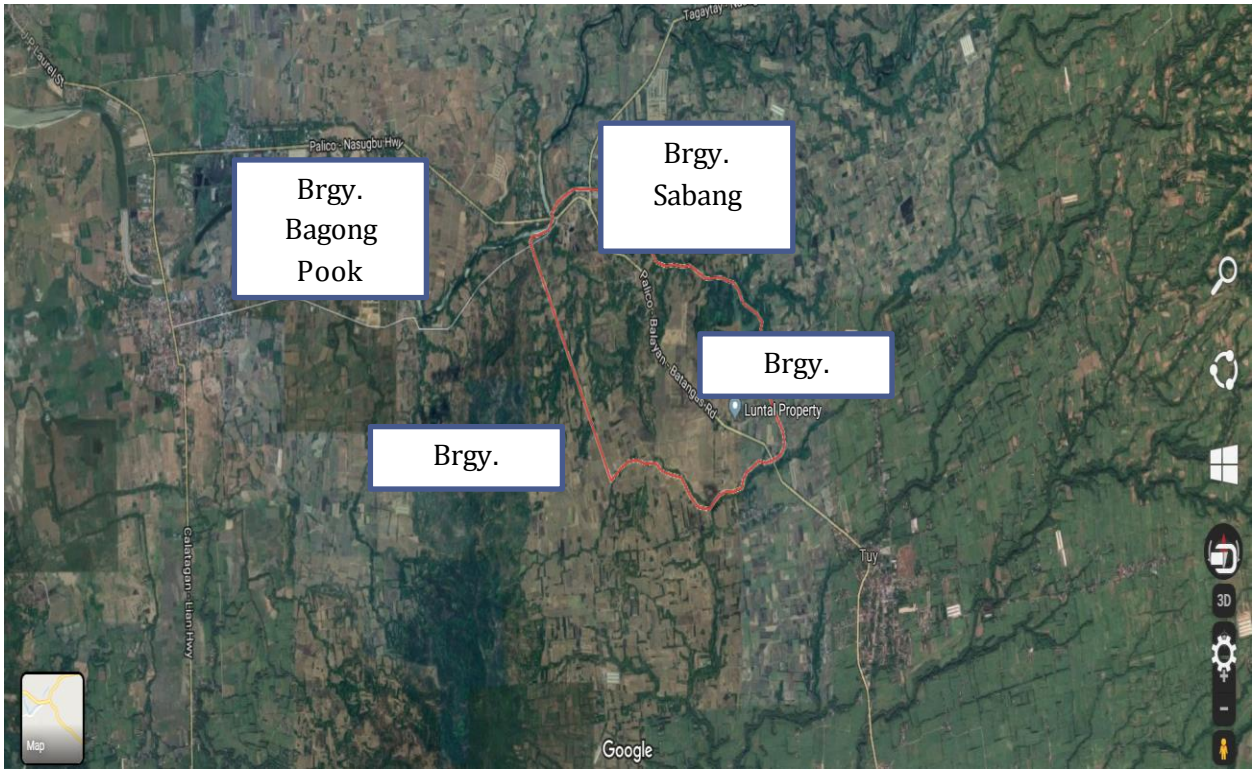


Figure 1. Impact Barangays

Project Awareness

Table 2. Awareness for proposed Project

Awareness	Brgy. Luntal	Brgy.Dalima	Brgy. Sabang	Brgy. Bagong Pook	Count	%
Yes	10	1	5	2	18	60
No	5	1	2	4	12	40
Total	15	2	7	6	30	100

Majority of the respondents usually source their information from friends and relatives, while 20 percent revealed that they get information on the company's plans and other sources (Table 3).

Table 3 Source of Information

Sources	Count	%
Government/Brgy Officials	3	10%
Relatives/Friends/Neighbor	15	50%
Proponent	6	20%
Meetings/Consultations	3	10
Observations	3	10%
Total	30	100%

Possible Social and Environmental Effects of the Proposed Project

All respondents believe that the proposed project will increase employment opportunities preferably to qualified members of their respective families (Table 4). Being locals within the host barangay and the impacted surrounding communities, priority of employment vested on them.

Table 4 Positive Effects Social and Environmental effects of proposed project

Positive Effects	Brgy. Luntal	Brgy.Dalima	Brgy. Sabang	Brgy. Bagong Pook	Count	%
Increase employment	14	1	8	7	30	100
Increase business/establishment of business	4	1	5	1	11	36.67
Progress in barangay	10	1	0	1	12	40

on social development						
Improved public service	6	1	0	1	8	26.67
No positive effect	0	0	0	0	0	0
No idea	0	0	0	0	0	0
others	0	0	0	0	0	0

Respondents also considered the overall growth and progress of their respective barangays, like the growth and stability of businesses conceivably brought about by the spending ability of the employed locals, plus the growth of ancillary support services in the area like transport, accommodation, food chains and many more.

When asked about what they think will be a negative impact of the proposed expansion, respondents in Table 5 aired concerns on the possible impacts on their health due to air and water pollution.

Respondents also perceived in the rice-fields and other farming lands were believed to be polluted when disposed treated wastewater were still directed towards the irrigation canal.

Table 5 Negative effects of the proposed project

Negative Effects	**Brgy. Luntal**	**Brgy. Dalima**	**Brgy. Sabang**	**Brgy. Bagong Pook**	**Count**	**%**
Loss of Property	0	0	0	0	0	0
Pollution to water	10	0	8	3	21	70
Pollution to air	12	1	8	7	28	93.33
Removal of trees and other vegetation	0	0	0	0	0	0
Removal of fishing grounds and	2	0	1	0	3	10

other river areas						
Loss of work and livelihood opportunities	1	0	0	0	1	3.33
Health Problems	12	1	8	3	24	80
No negative effect	0	0	0	0	0	0
No idea	0	0	0	0	0	0
Roof of house deteriorate easily	3	1	0	0	4	13.33













Technology Selection/Operation Processes

As a member of the Steel Asia group of companies, the technology and the processes to be used in the proposed Smelting Plant is common to their other existing plants in the country. The production capacity of each plant may be different but they will use the latest version of rebar rolling technology for this project.

Manufacturing of rebars requires substantial amount of energy during heating of billets in a Reheating Furnace and in the Rolling Mill Stands where the heated billets are "resized" from 150mm x 150mm square to rebar sizes ranging from 8 mm to 36 mm in diameter. **BQC STAR STEEL CORPORATION** decided to use "state of the art" technologies for this project because in the long run it provides the lowest operating cost. The other option is to buy and refurbished second-hand facilities that are very cheap but are very expensive to operate because it consumes a lot of energy.

Resources In terms of water source, the best option to consider is the ILAT River due to its proximity to the project location. Deep well is also not an option since it may affect the supply of those nearby residential communities whose water supply is coming from their own deepwell. In terms of power supply, In terms of power supply, a 69 KV substation which will consist of a 31.5 MVA power transformer will be installed as a requirement for the power supply of Plant and its auxiliaries. Harmonic filters will also be installed for the rolling mill to be compliant with the Philippine grid code on the system power quality such voltage and frequency variations, flicker severity and harmonic distortions. BATELCO will provide the power requirement of the mill, they will also provide the tapping point and the distribution line going to the mill Electrical Substation. Also one 1250 KW capacity standby generators will be supplied and installed to be used only during power failures.

- Power Supply For efficient operation, a rolling mill requires a stable and reliable power supply to attain "steady state" operation. In addition the

power quality should conform to the requirements of the mill's computer and automation system.

- Water Supply The rolling mill requires an abundant supply of cheap and reliable source of industrial water needed in cooling the various equipment.

Logistics

Steel manufacturing is essentially a transportation business as it requires a lot of moving & handling for its raw materials and finished goods. The plant should be sited near the port, major highways and customers to optimize the logistics cost.

Manpower

Availability Rebar manufacturing needs around 400 direct and 3,000 indirect vocational and technical personnel to run and maintain the facilities 24/7.

Land

The land area must accommodate all the facilities needed in a contiguous manner. In addition it should not require a long time for land conversion and expensive site development. It should have sufficient elevation so that it will not be effected by flooding.

Carbon footprint

The proponent's policy is to adopt practices to minimize fuel use. These include optimized trip planning/routing to increase fuel efficiency, reducing the number of kilometers each truck travels daily and minimizing travel time.

Social

Social environment was also considered in the project alternatives. The project area was considered because it is already classified as industrial although there are subdivisions and residential areas around the project site.

These neighborhood will be protected through **BQC STAR STEEL CORPORATION**'s commitment to implementation of environmental management and mitigating measures.

Environment

Environmental characteristics of the project site were also considered in the site selection. The proposed location is considerably clear and flat area. Being in a topographically flat area, hazards associated with slope instability, erosion and mass wasting are expected to be nil. The proposed location of the project facilities was also evaluated in terms of geohazard susceptibility based on information from government agencies such as the Mines and Geosciences Bureau (MGB) and the Philippine Institute of Volcanology and Seismology (PHIVOLCS). Generally, the project area's susceptibility to earthquake-triggered slope failure, rainfall-triggered slope failure, and flooding are low. With regard to seismic vulnerability and liquefaction potential, the potential ground-shaking and liquefaction susceptibility of the project site is also low.

Environmental Impacts of Each Alternative

In terms of location, the potential impacts in all locations are the same. However, other areas were not considered because of existing mangrove plantation, lack of sustainable water and power sources and the land classification is not yet industrial. The impacts are discussed and summarized in detail in the next two chapters.

No Project Option

If the proposed rolling mill project will not materialize, employment opportunities and social development such as livelihood projects, skills training, scholarship programs and medical assistance for the residents of the host Barangay in particular will not be realized. Also, the prospective LGU increase in revenue, multiplier effect of the project such as business

opportunities, support to basic services like infrastructure and medical assistance and other opportunities for the community and LGU will likely lose when the project is not pursued.

The possibility of expanding and upgrading LGU's basic infrastructure services and facilities and strengthening of LGU's capacity in municipal governance, investment planning, revenue generation and project development and implementation will not also be realized. This may also include possibility of enhancing their capabilities for local leadership because the project may provide technical support and assistance to local leaders to training, seminars and workshops. All of these may be provided by the project thru its tax payments, permits and clearances and Social Development Program.

Another opportunity that the local government and the community may miss if the project will not be realized is the possibility of constructing additional infrastructure projects like roads and bridges, increasing school classrooms and improving school facilities and medical assistance such as provision of medicines, medical supplies and medical missions.

1.4.1 Project type and size

Based on the ten-year market projections from 2019 to 2029, the rebar market would grow from 3 million tons to 7 million tons. Half of the rebar demand will be in Metro Manila, Central Luzon & Northern Luzon. To address this market demand, **BQC STAR STEEL CORPORATION** proposed to build and operate said Steel Smelting Plant with Rolling Mill that has a production capacity of 600,000 mt/year.

1.4.2 PROJECT COMPONENTS

The proposed project involves melting and rolling operations utilizing scrap metal as raw materials. Production capacity will be 600,000 MT per year both for melting and rolling.

1.4.2.1 Scrap Yard

All scrap shall be received in the scrap yard and shall be stored directly on piles on the ground. Scrap deliveries shall be checked for radiation level prior to receipt. A high radiation reading could mean a delivery containing explosive or radioactive materials in the form of unspent shells, bombs, munitions among others.

Scraps are segregated according to its scrap grade designation. A scrap can be classified by its thickness - heavy, medium or light, and by its type - shredded, bundles, tin, can and others. The complete list of scrap grade designation can be found in Scrap Specifications Circular 2007, Institute of Scrap Recycling Industries Inc.

A proper scrap blend shall be observed before charging. Current inventory level, desired chemistry requirement and the density of scrap are some of the considerations on proper scrap blend. Scraps shall be loaded into the scrap buckets located on one of two transfer cars, which are capable of traversing the length of the in-house stockyard to Electric Arc Furnace (EAF) lifting position ready for charging. Scrap bucket loading shall be accomplished by an overhead crane, fitted with electromagnet.

Once a bucket is full, its contents shall be transferred into the EAF through an overhead crane. Scrap charge weight shall be determined by load cells which shall be installed on each scrap bucket transfer car.

	Proposed Production Capacity
Amount Used, MT/year	600,000MT

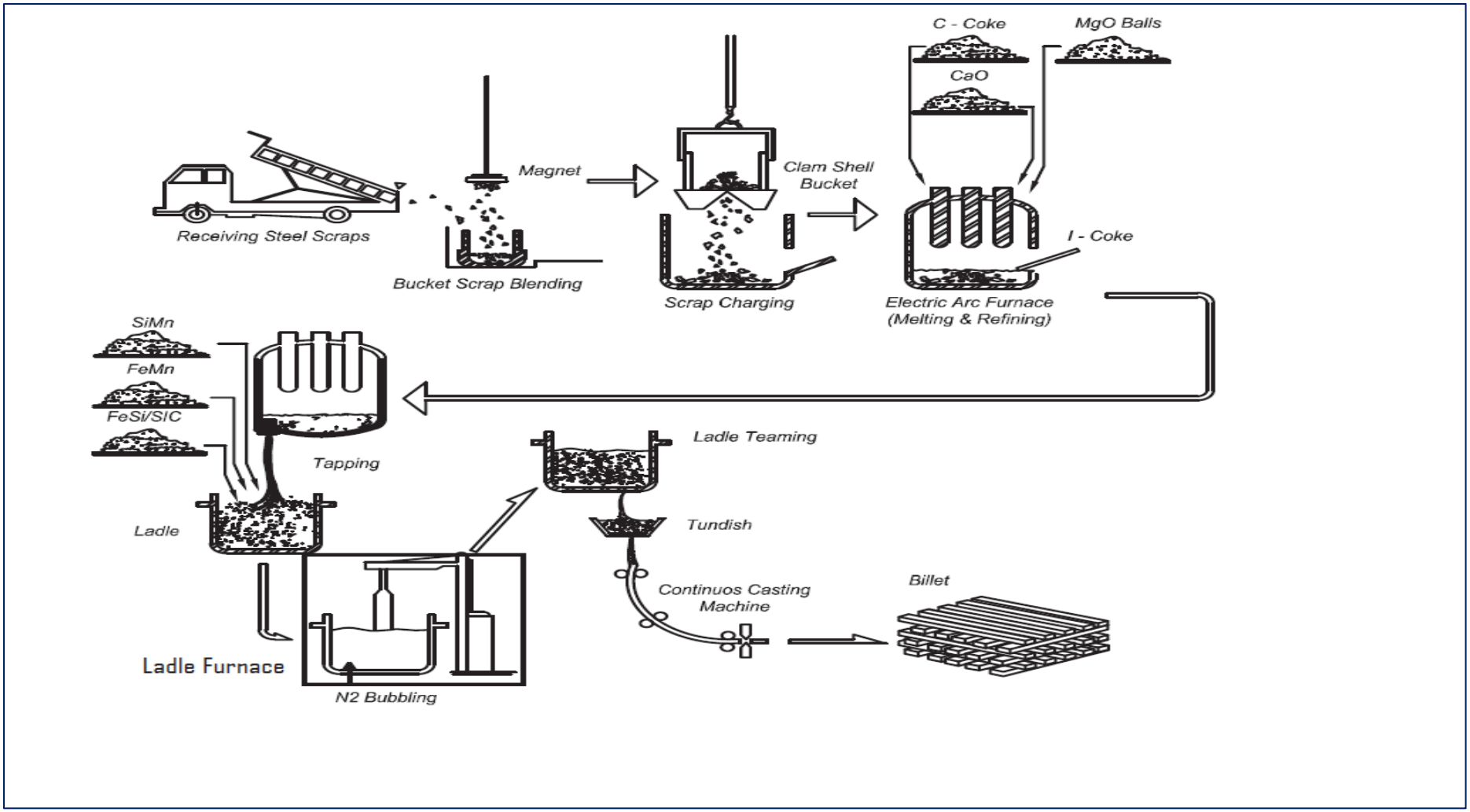


Figure 0.2. Steel Making Process Flow

1.4.2.2 Melt Shop

The proposed melt shop production is 600,000 MT per year . Steel scrap and other furnace additives will be melted in an Electric Arc Furnace (EAF). Around 100% of 150x150x12000mm raw material of local scrap is being utilized. The chemical composition of the resulting molten steel will be checked, and if necessary, adjusted by the addition of ferro-alloys. The EAF alloying additive system has undergone an automation upgrade for process improvement. The melt is then transferred by means of a tundish to the Continuous Casting Machine (CCM) where it is cast into square-shaped bars called billets. These billets are stockpiled according to grade before being transformed into rebars of 10mm-36mm size.

The meltshop will operate in 18 hours with three shifts on weekdays and 24 hours also on three shifts on weekends.

1.4.2.3 Ladle Furnace

Ladle Furnace (LF) is a secondary metallurgical processor to the Electric Arc Furnace (EAF). Instead of melting and solely refining at EAF, the LF serves as a buffer between EAF and CCM for better sequencing of heats and thoroughly homogenizes the melt in.

The following are the benefits of the installing a ladle furnace:

- Power cost savings – lesser power requirement than using EAF alone
- Less refractory consumption – lower cost of consumables
- Less graphite electrode consumption – lower cost of consumables
- Higher productivity – to attain the target productivity.

1.4.2.4 Oxygen Gas Generator (EOX)

The proponent will install an Oxygen Gas Generator (EOX90), 120,000 liters cryogenic tank (including auxiliary equipment), O2 gas Compressor, Compressed Dry Air (CDA) system and Cooling water system. The Oxygen gas produced will be delivered via a pipeline and shall be connected to the existing piping on the Meltshop building. This new O2 gas generator shall become the primary source of O2 gas and shall be backed up by Liquid O2 vaporization system in case of any failure by the O2 generator. The O2 gas is currently being used at the Electric Arc Furnace (EAF) for steel manufacturing. Installing an onsite O2 gas generator is a more efficient and cost effective solution for O2 gas requirement and will therefore make product more competitive.

Oxygen gas is acquired, specifically for this type of plant technology, by an adsorption technology called vacuum swing adsorption, which we shall call EOX. The EOX generator is an On-site oxygen generator that produces oxygen at ambient pressure. The O2 gas produced shall then be compressed to meet the required pressure by the end user. The EOX uses the process of air separation by adsorption. This technology allows producing O2 enriched stream (up to 93%) from air. The basic principle of air separation by adsorption relies on the use of zeolite adsorbents (or molecular sieves), which perform a selective adsorption of nitrogen over oxygen and argon. When feeding air into a vessel filled with zeolite adsorbents, nitrogen is preferentially retained and oxygen and argon go through.

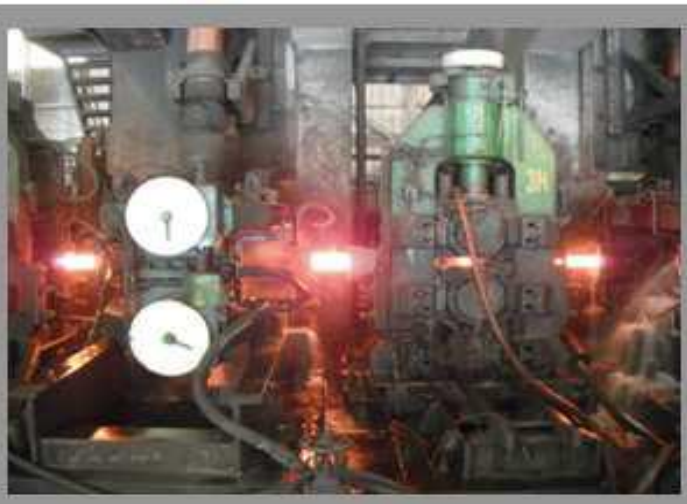
1.4.2.5 Rolling Mill

The rolling mill process flow is shown in the series of illustration below. Billets from the meltshop shall undergo further size reduction prior to reheating and rolling.

Then the steel bars shall be rapidly cooled then cut into the desired length, sorted, bundled and stockpiled prior to delivery.

Sample Photos of process flow for the proposed project.

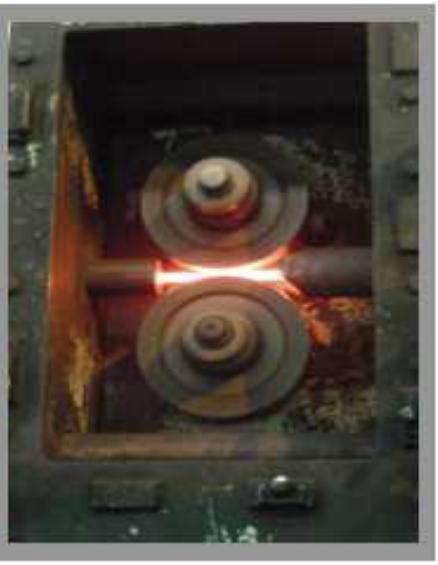
Billets are all reheated through **FURNACE**, to achieve rollable temperature of 1020°C to 1080°C, and measured through billet temperature profiler.



Billets are rolled through series of stands, continuous size reduction, until rebar size is achieved. Rolling Mill (M3) produces rebar with diameters of 10mm, 12mm, 16mm, 20mm, 25mm, 28mm, 32mm, and 36mm. Rebar to be rolled (size, grade and quantity) is dependent on customers requirement.

TEMPCORE is applied to assist rolling mill to achieve rebar target grade considering a flexible billet or off chemistry billet.

The rolled billet is pre-cut in **DIVIDING SHEAR** due to cooling bed limited length capacity of 80 meters.



BRAKING PINCH ROLL is used to decelerate and to control the bar landing in cooling bed.

The precut rebars land in **COOLING BED**. The bars are cooled under normal condition, and necessary in-process sampling is done. Rebars are aligned and gathered in this area for batching and cut into commercial length required through **COLD SHEAR**.

The commercial length rebars are sub-bundled on **INSPECTION TABLE**, and able to be hand carry by the customers. The group of sub-bundles are then combined to a large bundle.

2. TECHNOLOGY DESCRIPTION

Processes involve in the melting and rolling operations are as follows:

Table 0.1 Melting And Rolling Mill Processes

Process	Description	Equipment	Input	By-product
Receiving of Scrap	Local and imported scrap are delivered by trucks, weighed and then unloaded in the scrap yard.	Cranes, Backhoe with Grabber, Forked Loader, Dump Trucks	Material input: Scrap	
Scrap Sorting	Scrap is visually inspected and then sorted according to scrap density classification.			Non-ferrous scrap

Process	Description	Equipment	Input	By-product
Scrap Preparation	Different types and quantities of scrap are mixed in buckets to achieve the target charging mix.			
Scrap Pre-heating	Scrap is pre-heated using the exhaust heat coming from the Electric Arc Furnace (EAF).			
Scrap Charging	Scrap is loaded in the EAF.			
Melting	Scrap is melted into liquid steel using electric current.	Electric Arc Furnace (EAF), Dust Collector	Process input: Power	Slag, Dust
	Oxygen and Carbon are injected to help increase the temperature inside the EAF.	Oxygen Injection, Supersonic Carbon Injection	Process input: Oxygen, Carbon	
	Burnt lime is added to remove impurities in the form of slag.		Material input: Burnt lime	
Tapping	The melt is transferred to a Ladle Furnace for refining.	Cart (for bucket transfer)		
Refining	After transferring the melt, the skull (composed of slag and steel) that is left in the furnace is removed from the EAF.			
Alloying	Ferro-manganese and/or ferro-silicon are added to the melt to adjust the chemical composition and to achieve the desired chemistry and strength grade.	Ladle Furnace (LF)	Process input: Power Material input: Ferro-manganese , ferro-silicon	
Bubbling	Melt is stirred to release trapped gases and to ensure homogeneity of the melt.	Ladle Furnace (LF)	Process input: Nitrogen Gas	

Process	Description	Equipment	Input	By-product
Teeming	Melt is released from the Ladle Furnace into the casting machine.			
Continuous Casting	The melt is collected in a tundish then cast in a copper mold.	Continuous Casting Machine (CCM), Overhead Crane, Shear, Cooling Bed, Billet Transfer Machine	Process input: Water	
Billet Charging	The resulting billet is passed through straightening rolls and then cut into the desired dimension.			
Cold Charging	Stored billets are loaded and re-heated in a furnace to achieve the required temperature for rolling.	Re-heating Furnace	Process input: Fuel (Bunker C)	Scale
Hot Charging	Pre-heated billets are loaded and re-heated in a furnace for a short period of time to achieve the required temperature for rolling.	Re-heating Furnace	Process input: Fuel (Bunker C)	Scale
Direct Charging	Straight from the casting machine, hot billets pass through a furnace in preparation for rolling.	Induction Furnace	Process input: Power	
Rolling				
Roughing	The billet passes through pairs of rollers which reduce the cross-section, resulting to the elongation of the billet.	Rougher Rolling Stands	Process input: Power, water, lubrication, compressed air	Crop ends

Process	Description	Equipment	Input	By-product
Intermediate Finishing	The billet passes through a second set of rollers, which further reduces the cross-section and elongates the billet.	Intermediate Rolling Stands	Process input: Power, water, lubrication, compressed air	Crop ends
Slitting	The billet is split into two for improved productivity.	Rolling Stands	Process input: Power, water, lubrication, compressed air	
High Speed Block (HSB)	The billet passes through twin high speed blocks where marks, notches and deformations are formed for small rebar sizes.	Rolling Stands	Process input: Power, water, lubrication, compressed air	
Thermomechanical Treatment	The steel bars pass through a quenching system where it is rapidly cooled by a high pressure spray of water to alter its strength grade.	Quenching System	Process input: Power, water, lubrication, compressed air	
Cutting	Bars are cut into 7 commercial lengths.	Cold Shear	Process input: Power, compressed air	
Bundling and Tagging	Depending on the size, rebars are bundled into a standard count and properly labeled for easy storage and handling.	Bar Counting Machine, Bar Bundling Machine	Process input: Power, water, lubrication, compressed air	
Storage	Bundled rebars are properly stored in a warehouse.	Cranes		

3. KEY ENVIRONMENTAL IMPACTS AND MANAGEMENT/ MONITORING PLAN

3.1 IMPACT MANAGEMENT PLAN

Shown below is the environmental management program to be implemented by the company to mitigate the projected impacts of the project.

Environmental Component	Projected Impact	Mitigating Measures		Effective		Plan of Action
		Planned	Actual	Yes	No	
WATER	Water Supply Exhaustion	Provision of water treatment facility to facilitate recycling	Water Treatment Plant will be maintained to facilitate water recycling.	■		For implementation
WATER	Water Quality Deterioration	Consistent water quality monitoring will be implemented.	Effluent quality will be monitored by an accredited third party laboratory every quarter. Moreover, in-house testing for water quality in the WTP will be done twice a week for self-monitoring purposes.	■		For implementation
WATER	Domestic Wastewater Generation	Provision of Sewerage Treatment Plant.	All domestic wastewater goes through the settling pond subject for filtration prior to disposal to public canal.	■		For implementation

AIR	Dust Generation during EAF charging	Installation of dust collection system.	Dust collection system will be properly maintained to ensure efficient operation.	■		For implementation
AIR	Greenhouse Gas Emissions	Installation of Continuous Emission Monitoring System (CEMS).	CEMS will be installed	■		For implementation
AIR	Noise Generation	Construction of a perimeter wall with a sufficient height and provision of a buffer zone with trees.	A perimeter wall of sufficient height will be constructed	■		For implementation
PEOPLE (Health and Safety)	Solid Waste Generation	Practice of solid waste segregation	Segregation of solid wastes will be done. Collection and disposal will be coordinated with concerned Brgy.	■		For implementation
PEOPLE (Health and Safety)	Hazardous Waste Generation	Hazardous wastes will be properly identified, labelled and stored. This will be due for collection to accredited hauler and treater.	Hazardous wastes will be properly identified, labelled and stored.	■		For implementation
PEOPLE (Health and Safety)	Work-Related Hazards	Use of necessary personal protective	Strict implementation on the use of PPE in	■		For implementation

		equipment.	different areas.			

2.DEVELOPMENT PLAN, DESCRIPTION OF PROJECT PHASES AND CORRESPONDING TIMEFRAMES

2.1.1 Pre-Construction/Pre-Operational

This stage will include the preparation of Environmental Impact Statement (EIS) as a requirement for ECC application for the proposed project in the previously issued conditions.

2.1.2 CONSTRUCTION/DEVELOPMENT

There will be a civil works involved in the proposed project using heavy equipment's especially earth moving activities. The construction of the proposed project is estimated to finish around 8 to 9 months.

2.1.3 OPERATIONAL

This phase involves the processing of desired product. Detailed process is shown in the flowchart below. As previously mentioned, there will be no change in the process itself but mostly in the automation and instrumentation upgrade to further achieve a larger production.

3.PROJECTED TIMEFRAME AND PROJECT COST

Construction will only start after the issuance of the Environmental Compliance Certificate (ECC) from the Office of the Environmental Management Bureau Central Office. The estimated project cost is two hundred million (200,000,000.00) pesos, the proposed project is expected to be completed by the 1st quarter of 2021 and construction works will take about one year.

4 Social Development Plan

4.1 The Proponent will be undertaking the Social Development Plan (SDP) in consonance with its Corporate Social Responsibility (CSR) mission, which includes but not limited to the following:

- Skills training in order to prepare the host community for employment opportunities during the construction and operation phases of the project
- Identify and sustainable livelihood training programs
- Environmental/Climate Mitigation Actions: Reforestation and Carbon Sink Program in coordination with the local DENR Offices (Regional, Provincial and Community)

The SDP Framework provided below shows programs needed by the community based on the perception survey conducted.

CONCERN	Responsible Community Member / Beneficiary	Government Agency/ Non-government Agency and Services	PROPONENT	Indicative Timeline	Source of fund
Livelihood / Employment (Men, Women, Youth & elderly) • Skills training to prepare the community for employment opportunities during the construction phase of the project • Sustainable livelihood training programs	Qualified Project Affected Men, Women, Youth & Elderly	• Barangay Council • Municipal Council • TESDA	Community Relations Officer	• Construction • Operation	Proponent
Education and Recreation	Barangay Committee for Education	• DepEd	Community Relations	• Construction	Proponent

	➢Project-affected Families		Officer	• Operation	
Environment and Sanitation • Reforestation and Carbon-Sink Program • Tree nursery • ClimateChange and Disaster preparedness • Assistance in addressing the environmental related problems of neighboring residents	Barangay Committee for Environment ➢Project-affected Families	• CENRO • Municipal Health Officer	Chief, Security Officer	• Construction • Operation	Proponent
Peace and order	Barangay Committee for Environment • Project-affected Families	• LGU • PNP	Chief, Security Officer	• Construction • Operation	Proponent
Climate Change Adaptation and Disaster Risk Reduction and Management	Barangay and municipal Disaster Risk Reduction and Management Council	• LGU • NDRRMC	Chief, Security Officer	• Construction • Operation	Proponent

4.2 The Information, Education and Communications (IEC) Implementation Plan

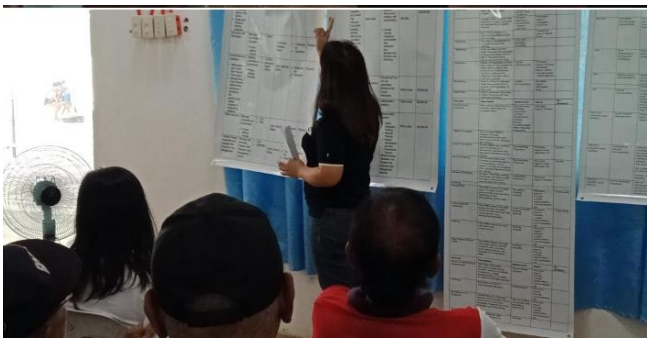
The IEC started as early as 2018 when the Proponent started a series of dialogues with the LGU and land owners and affected community. This IEC will be a continuing process through the life of the project in order that the stakeholders will be properly informed on the different phases and activities in relation to the project.

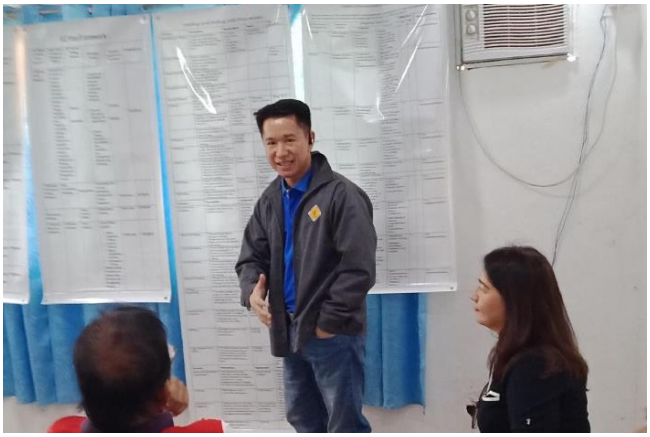
IEC essentially involves several media and forms such as perception surveys, public consultations, interview if key informants or Focus Group Discussions (FGDs) or print media.

The generic IEC Plan/Framework is shown in Table 4.2.

Target Sector Identified as Needing Project IEC	Major Topic/s of concern in Relation to Project	IEC Scheme / Strategy Methods	Information Medium	Indicative Timelines and Frequency	Indicative Cost
1. Residents of Host Barangays	Awareness for the people on the actual impacts & mitigating measures of the Project and concerns related to Climate Change Adaptation and Disaster Risk Reduction (CCA-DRR) including possible effects to the agriculture sector if any, capacity building for Barangay and Municipal Disaster Risk Reduction and Management Council	Sectoral Multi-media	• Stakeholders' Consultative Planning Session / Community Projects Planning Sessions • Informal discussion/ / meeting with stakeholders • Climate Change Adaptation and Disaster Risk Reduction and Management Seminar and workshop	Annually Monthly	50,000.00
2. Elementary School pupils of impact barangays	Basic environmental awareness	Group method	Educational Tour with the elementary schools of the impact barangays	Once a year	50,000.00
3. Stakeholders meetings		Group/ sectoral method	Stakeholders meeting	Once a year	30,000.00
4. BQC Star Steel Corp. employees	Awareness and safety	Group methods	Annual Safety program • Safety Inspectors	Once a year	100,000.00

			Training • First Aid Training • Hazard Identification and Risk Assessment Training Climate Change Adaptation and Disaster Risk Reduction and Management Seminar		






RANDOLL
BARANGAY LUNTAL
BARANGAY OUTPOST

INFORMATION, EDUCATION, COMMUNICATION (IEC)

Date : September 22, 2019

Time : 9:00 AM

Venue : Barangay Hall, Barangay Luntal Tuy, Batangas

NAME OF PARTICIPANTS	OCCUPATION	SIGNATURE
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