



VIETNAM STEEL ASSOCIATION

CONSTRUCTCO – 2022
Construction Country Report
VIETNAM

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- Technologies in 2021
- Current issues



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PART I

BASIC INFORMATION



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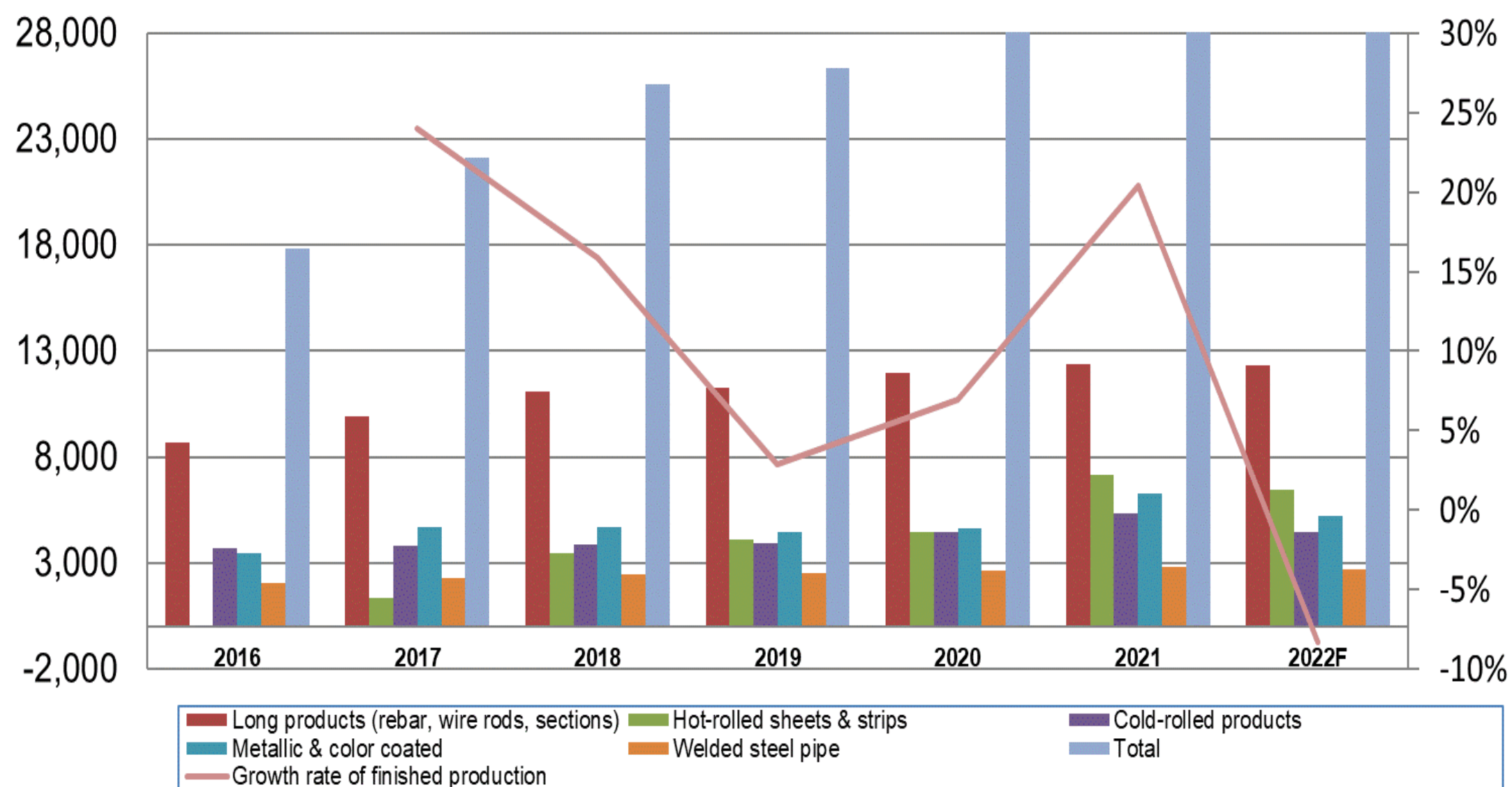
BASIC INFORMATION

Steel Production & Consumption 2021- 2022F

- Crude Steel Production reached nearly 22.5 million tons, down 3% y-o-y.
- Finished Steel Production reached nearly 32 million tons, down 8.3% y-o-y

- Apparent steel consumption reached more than 21.6 million tons, down 1.8% compared with 2021.
- Steel export in 2022F also achieved negative results, reaching nearly 10 million tones, decreased about 30-34% y-o-y.

Finished Steel Output by Products 2022F



Source: VSA



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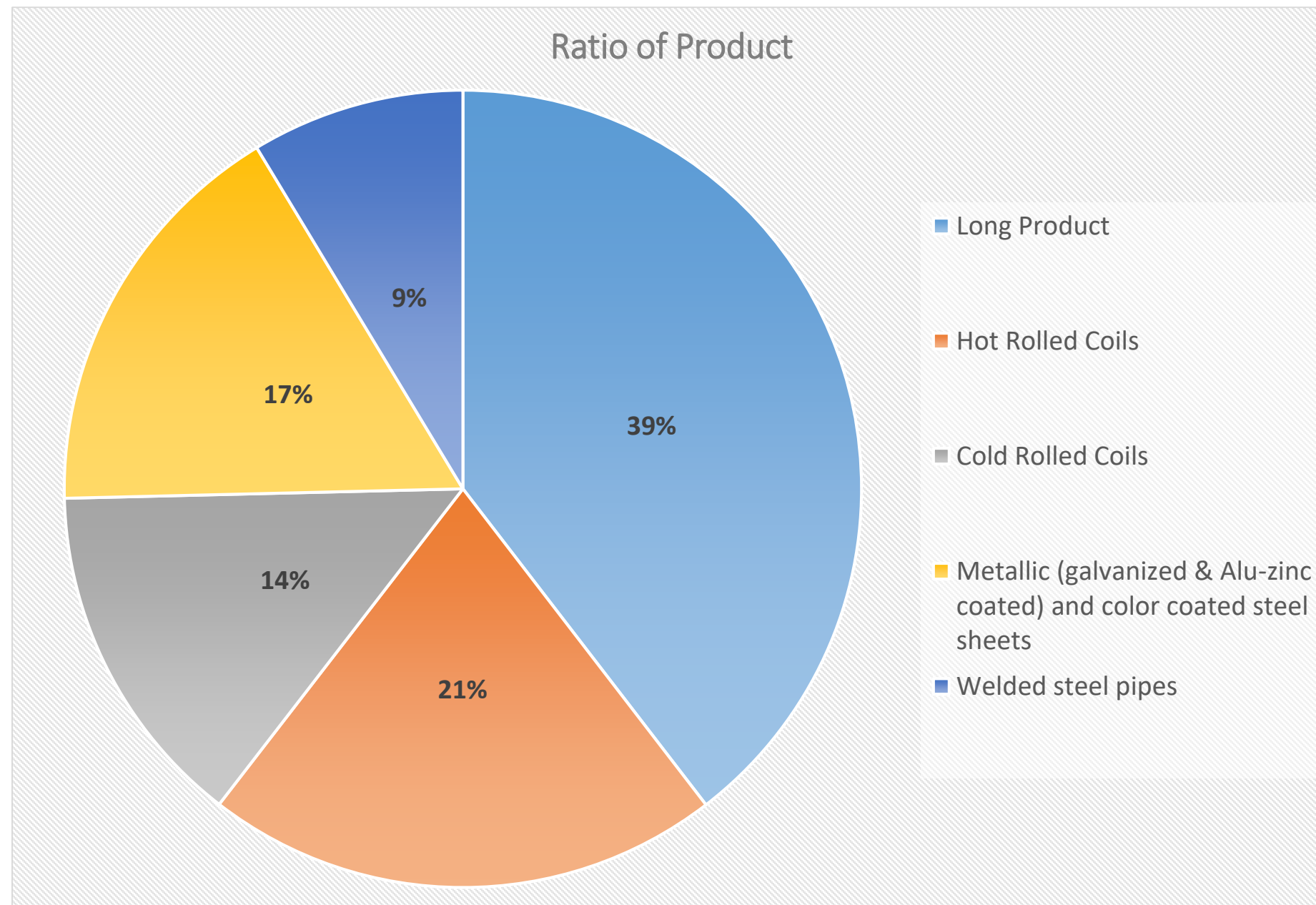
The product range and quantities covered 2021- 2022F

- Long product: 12.3 mil. tons
- Hot rolled coils: 6.5 mil. tons
- Cold rolled coils: 4.4 mil. tons
- Metallic (galvanized & Alu-zinc coated) and color coated steel sheets: 5.2 mil. tons
- Welded steel pipes: 2.69 mil. tons.



BASIC INFORMATION

The product range and quantities covered 2021- 2022F



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BASIC INFORMATION

The top projects for coming years:

- Hoa Phat Dung Quat No.2 steel integrated complex project with a design capacity of 5.6 million tons of hot rolled coils per year, is expected to be completed and put into operation by 2024 [Flat product].
- No. 2 Nghi Son Steel Rolling Factory, with a capacity of 3 million tons/year, divided into 2 investment phases. In which, the first phase of the project with a capacity of 1.5 million tons of steel billet/year will be deployed for construction investment from January 2022 to March 2023; Phase 2 with a capacity of 1.5 million tons of steel billet/year and 1.5 million tons of rolled steel/year, will be deployed from July 2022 to March 2025 [Long product].



BASIC INFORMATION

The top Construction projects for the years:

- ✓ The National Assembly approved the investment policy of 12 North-South expressway projects in the 2021-2025 period. With a new construction plan of 729 km, the north-south expressway east of 2,000 km long from Lang Son to Ca Mau will be completed.
 - ✓ Long Thanh International Airport Project is an international airport under construction in Long Thanh district, Dong Nai province. With a capacity of up to 100 million passengers/year when all 3 phases are completed, this will be the largest airport in Vietnam in the future. The project is implementing Phase 1 with a capacity of 25 million passengers and 1.2 million tons of cargo per year. The total investment of phase 1 is about 5.45 billion USD. By 2025 at the latest, phase 1 will be completed and put into operation.
 - ✓ In June 2022, the National Assembly passed a resolution on investment policy in the Belt 4 construction project in the capital region. The route is 112.8 km long, divided into 7 component projects, passing through Hanoi, Hung Yen and Bac Ninh; land use demand of more than 1,300 ha
- => *These are big projects, consuming a large amount of construction steel in the near future*



Three key areas of R&D focus

- High quality products
- Energy saving
- Environmental protection



Product & process development in ROLLING MILL

- Hoa Phat Dung Quat operated the thin slab caster & Hot strip mill (QSP) with capacity 3.5 MTPY from end of 2020, sell the product to the market in 2021, which adds to the Vietnam market a significant amount of HRC.
- Ton Dong A, one of biggest galvanized steel manufacturers in Vietnam, is developing the galvanized sheet product for home appliances, currently it supplies some products for the back plates of refrigerators, TV sets and Washing machines.
- Hoa Phat Group is investing in a Container Factory which will produce the 20' and 40' steel containers with capacity 500,000 TEUs/year (First phase: 200,000 TEUs/year).



Energy saving in IRONMAKING

Usage of excess blast furnace gas for power generation - Energy saving solution in Hoa Phat Hai Duong iron and steel complex:

- Maximum generating capacity is 35MW, the average is 25MW.
- Average monthly electricity generation 18,000,000 kWh/month, annual 216,000,000 kWh/year; bringing in a value of ~15.5 million USD/year.

The self-produced electricity of the Complex from residual heat and BF gas sources provides about 80% of the demand, of which BF gas generation alone accounts for 25% of this total spontaneous electricity. The use of excess BF gas in the Complex for power generation has brought about high efficiency, saving energy, reducing greenhouse gas emissions, and improving production efficiency, product cost reduction



Integrated manufacturing process for iron and steel

- Vietnam has full of the integrated manufacturing process for iron and steel using the blast furnace and basic oxygen furnace (BF - BOF); Electric Arc Furnace (EAF); Induction furnace (IF). Including continuous casting machines produce billet, bloom and slab; rebar, wire rod rolling mills and hot strip mills.
- In downstream side of the iron and steel manufacturing chain, Vietnam has full process such as pickling tandem cold mill (PLTCM), reversing rolling mill (CRM), hot dip continuous galvanizing lines (CGL), continuous color coating lines (CCL), continuous annealing lines (CAL), electrolytic galvanizing line (EGL)...



TECHNOLOGIES IN 2021

Consumption

IRONMAKING	STEELMAKING
Coke rate: 350-420 Kg/THM	BOF- Oxygen consumption: 48-55 m ³ /Ton
Pulverized Coal Injection Rate: 100-160 Kg/THM	EAF- Electric consumption: <300 kWh/ton
Energy Consumption: 10-14.8 GJ/THM	



CURRENT ISSUES

- There is an oversupply of construction steel, but there is a significant shortage of high-quality steel products such as: mechanical engineering steel, alloy steel, etc. in the manufacturing industry. Therefore, despite being a major steel exporter in the ASEAN region with about 14 million tons of steel exported, worth more than \$12.7 billion, Vietnam still has to import more than 13 million tons of steel, worth \$12.2 billion (Figures for 2021).
- The input materials such as iron ore, scrap steel, coking fat coal is almost entirely dependent on imports and the world market.
- In the second half of 2022, the demand for construction steel decreased, leading many companies to reduce production, even some had to stop the line for maintenance.





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