

The ASEAN Steel Industry Development: Investment and Green Industry Challenges

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Secretary General

South East Asia Iron and Steel Institute

Singapore ▪ Malaysia ▪ Indonesia ▪ Myanmar ▪ Philippines ▪ Thailand ▪ Vietnam | Australia ▪ South Korea ▪ Taiwan

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Industry,
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>400
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**Research
& analysis**

in
ASEAN

OUTLINE:

ASEAN Economies
amid COVID19

- COVID19 Status
- Vaccination Plans
- Economic Impacts

The ASEAN Steel
Industry Situation

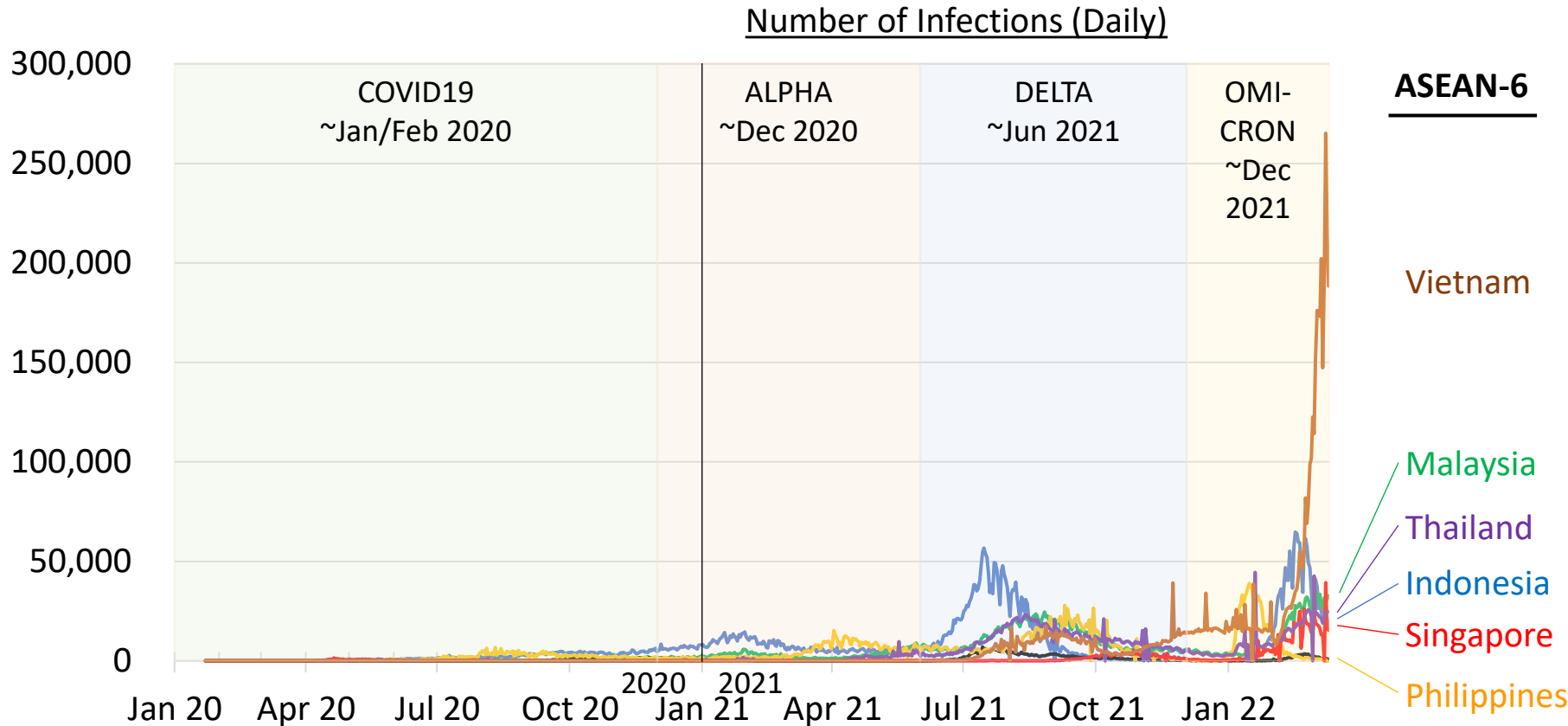
Key Developments

Appendix

COVID19 PANDEMIC IN ASEAN

2021 was the year of the variants as ASEAN countries were hit by fresh outbreaks from loosening restrictions; Borders continue to open as vaccination rates increase as Omicron effects appear to be less severe

11 Mar 2022	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam	Daily Cases
	16,110/d	32,800/d	583/d	15,345/d	24,592/d	188,440/d	
	5.8m	3.8m	3.7m	917k	3.2m	5.4m	Total Cases
	54.9%	79.6%	57.7%	90.7%	71.3%	79.1%	Fully Vaccinated



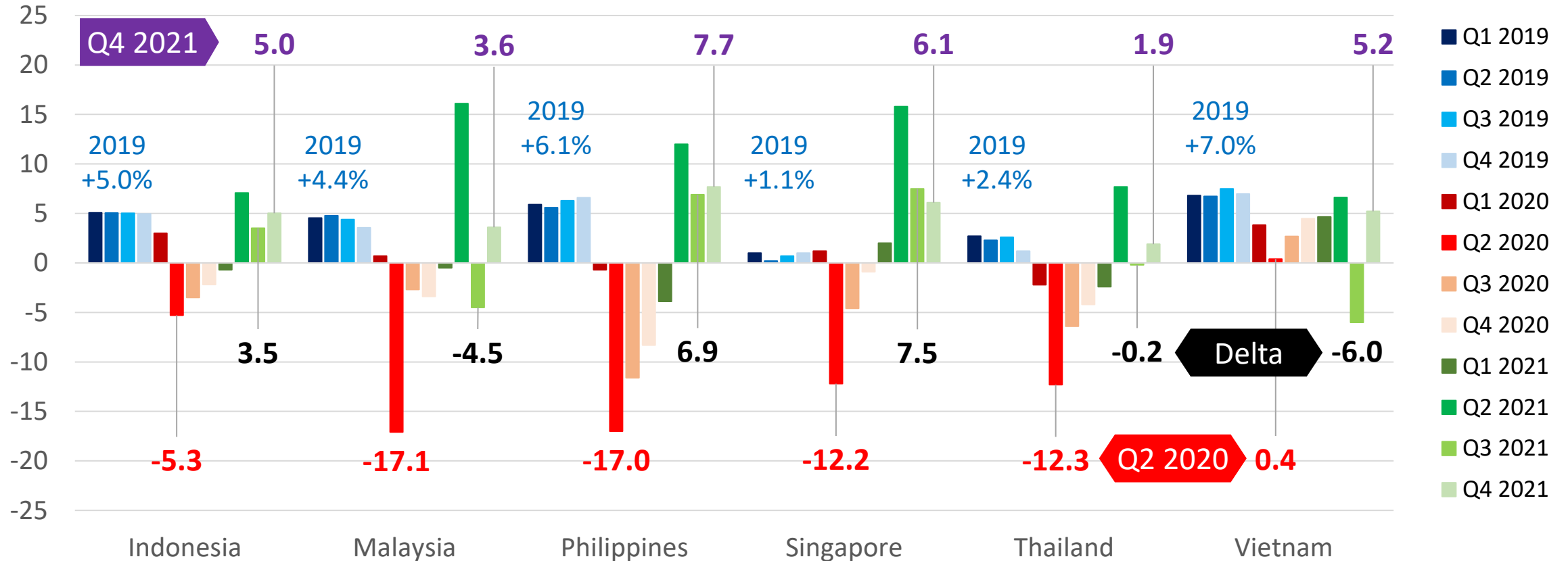
- Omicron although more infectious, is less severe
- Hospitalization rates are declining
- Higher vaccination rates are encouraging border reopening across ASEAN
- Migrant labour is expected to slowly return in 2022
- Tourism sector will begin to recover in 2022

Source: Harvard Dataverse, Our World in Data

HOW ARE ASEAN-6 ECONOMIES DOING?

Since major economic contractions in Q2 2020 due to lockdowns, ASEAN-6 economies have been improving; Delta hit most ASEAN countries in Q3, slowing growth; Omicron effect not fully known yet

Quarterly GDP Growth from Q1 2019 to Q4 2021 (year-on-year %)



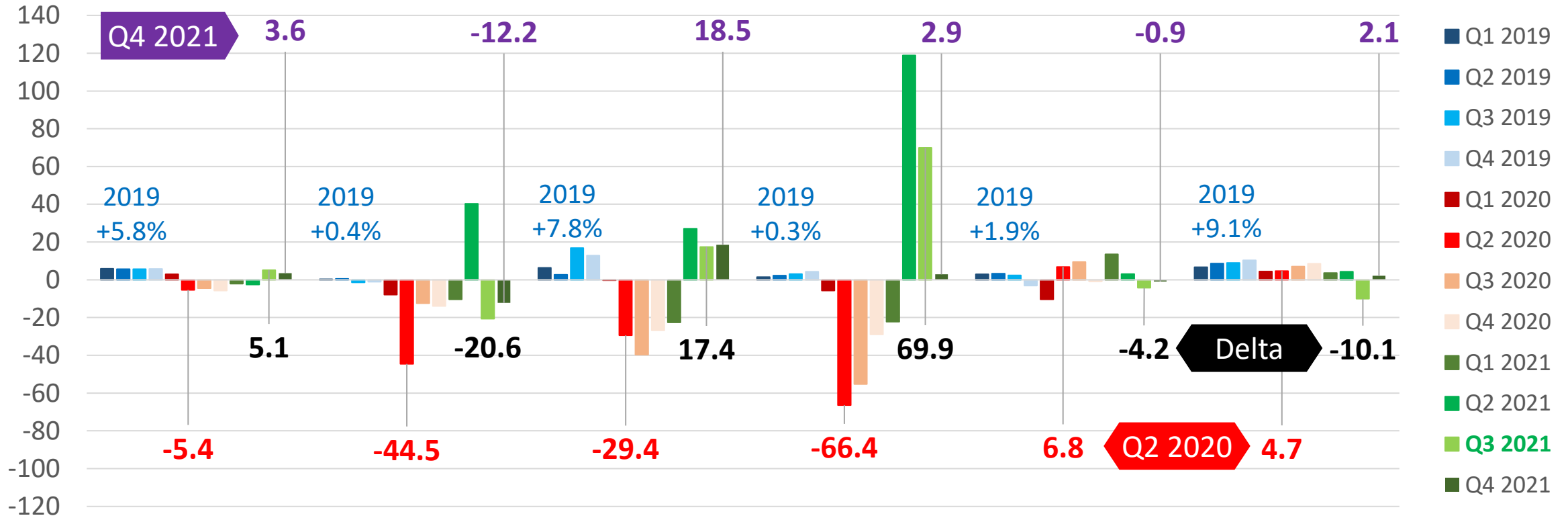
	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
2020	-2.1%	-5.6%	-9.5%	-5.8%	-6.1%	+2.9%
2021	+3.7%	+3.1%	+5.6%	+7.6%	+1.6%	+2.6%

Source: Various ASEAN country statistics

HOW ARE ASEAN-6 ECONOMIES DOING?

Renewed restrictions in Q3 2021 in Malaysia, Vietnam & Thailand resulted in further contraction in their Construction Industry activities in Q3 2021; Largest industry contractions were in Q2 2020

Quarterly Construction Growth from Q1 2019 to Q4 2021 (year-on-year %)

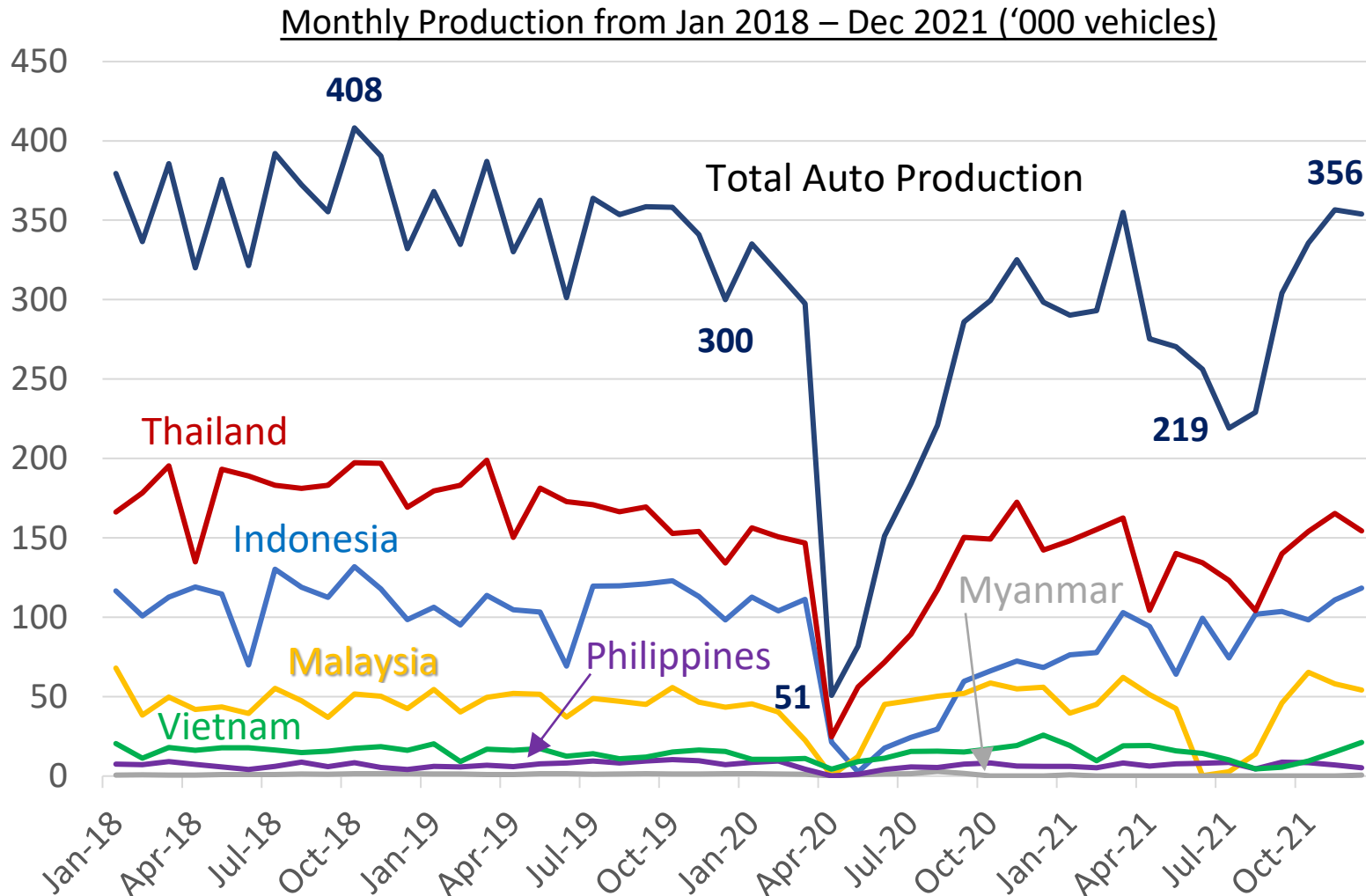


	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
2020	-3.3%	-19.4%	-26.0%	-38.4%	+2.0%	+6.4%
2021	+2.8%	-5.2%	+9.8%	+20.1%	+2.7%	+0.6%

Source: Various ASEAN country statistics

HOW ARE ASEAN-6 ECONOMIES DOING?

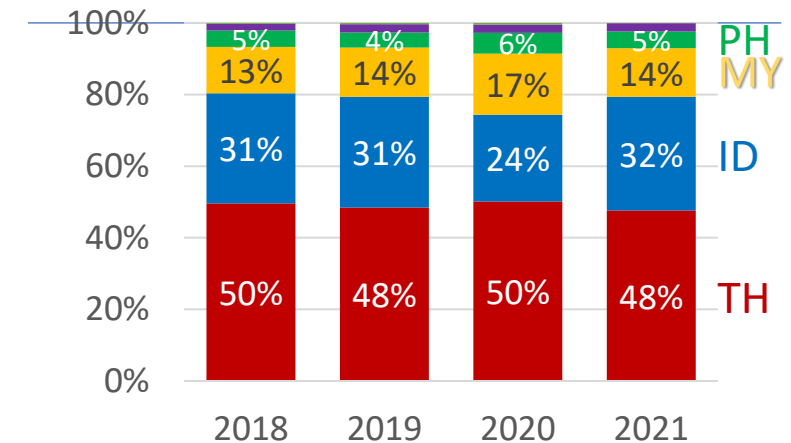
Auto production recovered to 3.5m vehicles, up more than 24% from 2.8m in 2020; However, this is short of the 4.2m vehicles before the pandemic; Monthly production reaching pre-pandemic levels; Challenges remain



Annual Production ('000 vehicles)

Country	2019	2020	2021
Indonesia	1,287	690	1,122
Malaysia	572	485	482
Myanmar	15	12	2
Philippines	95	67	84
Thailand	2,014	1,427	1,686
Vietnam	176	166	163
Total	4,159	2,847	3,538

Proportion of Production (%)

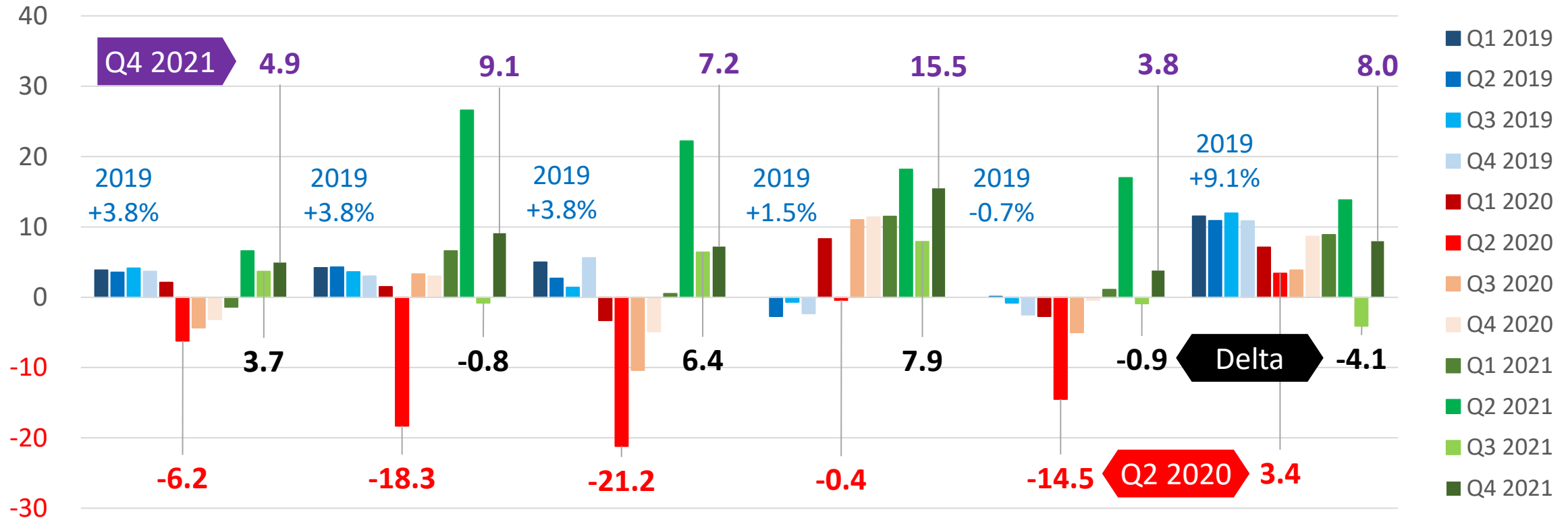


Source: Various ASEAN automotive sector statistics

HOW ARE ASEAN-6 ECONOMIES DOING?

Similarly, the Manufacturing sector was equally impacted in Malaysia, Thailand and Vietnam in Q3 2021; However, the sector has continued to expand since then

Quarterly Manufacturing Growth from Q1 2019 to Q4 2021 (year-on-year %)



2020
2021

	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
2020	-2.9%	-2.6%	-9.8%	-7.5%	-5.7%	+6.4%
2021	+3.4%	+9.5%	+8.6%	+13.2%	+4.9%	+0.6%

Source: Various ASEAN country statistics

OUTLINE:

- ❑ ASEAN Economies amid COVID19

- ❑ The ASEAN Steel Industry Situation

- ❑ Key Developments

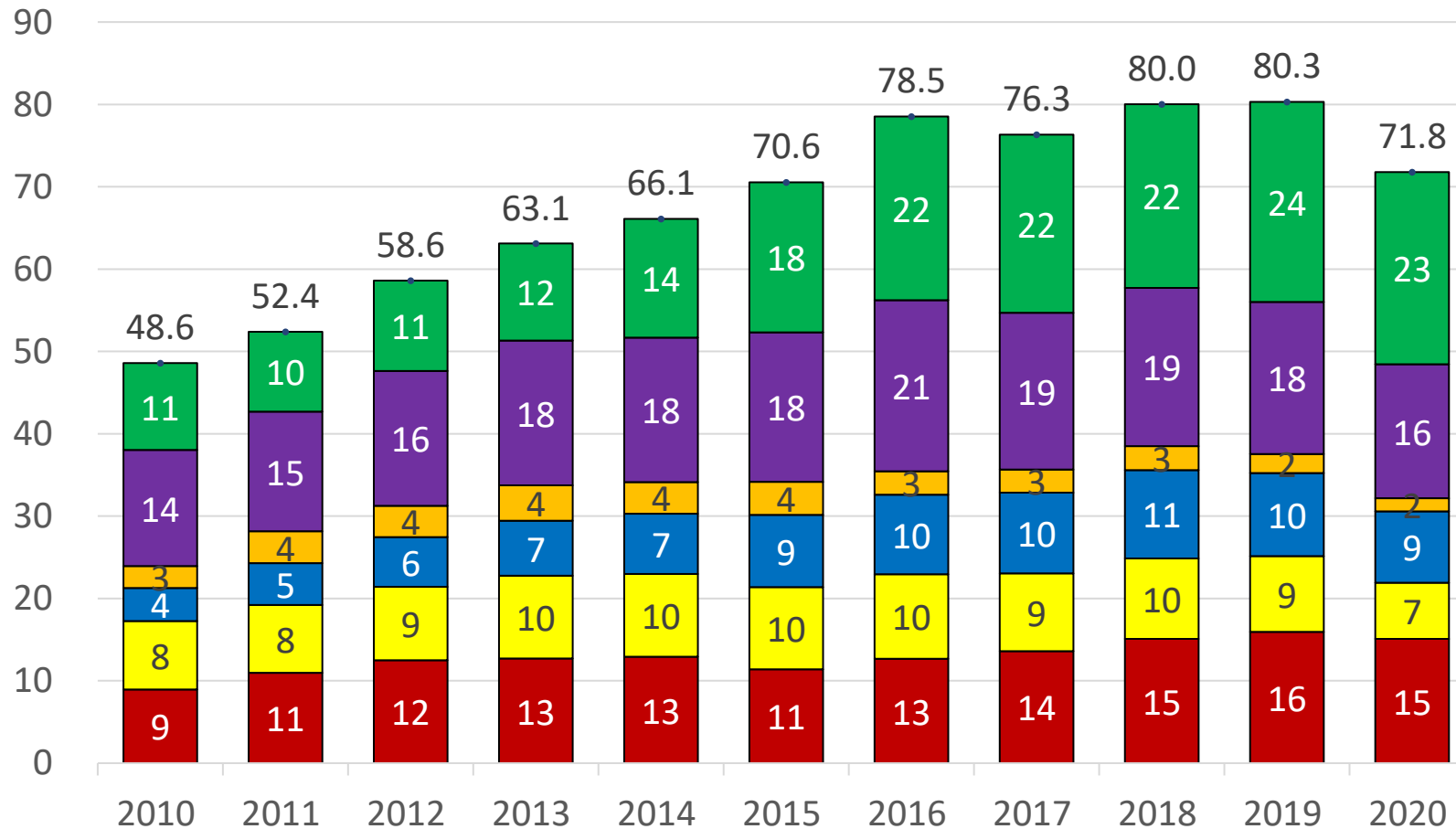
- ❑ Appendix

- Steel Consumption
- Production
- Imports
- Exports
- Projection for 2021

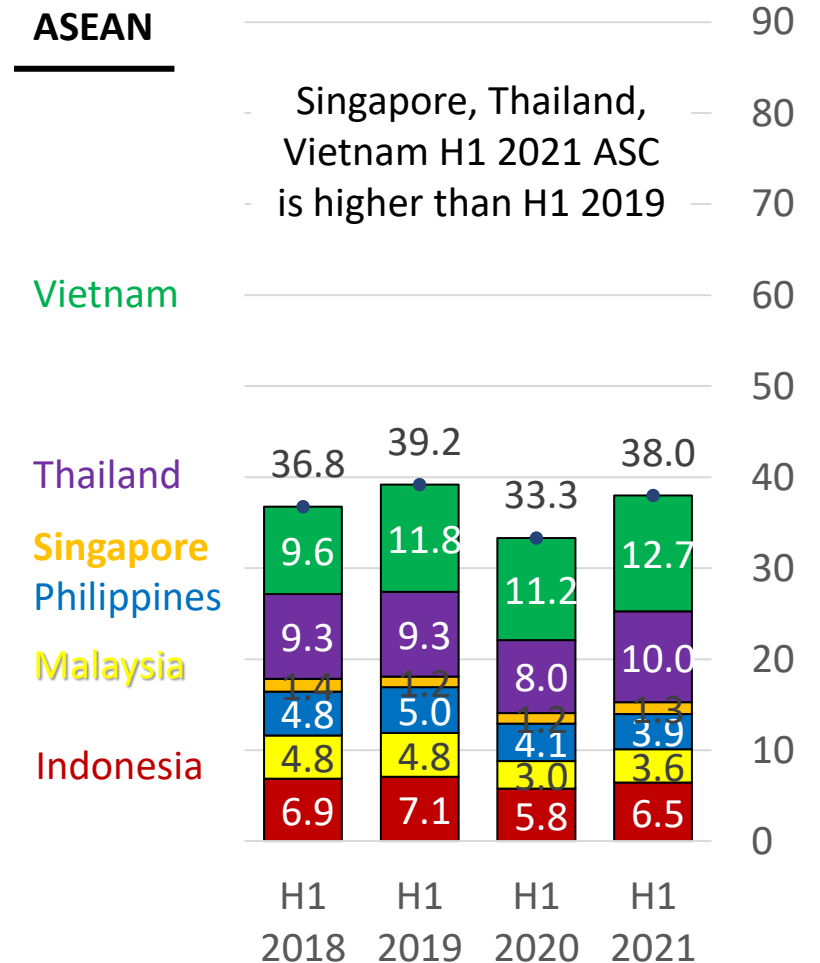
ASEAN-6 STEEL DEMAND / CONSUMPTION

ASEAN-6 steel consumption in 2020 was 71.8 million tonnes; H1 2021 consumption was 38 million tonnes, up 14.1% from H1 2020; Indonesia, Singapore and Vietnam at pre-pandemic levels in H1 2021

ASEAN 6 – Apparent Steel Consumption (million MT)



ASC Half Year Figures (million MT)

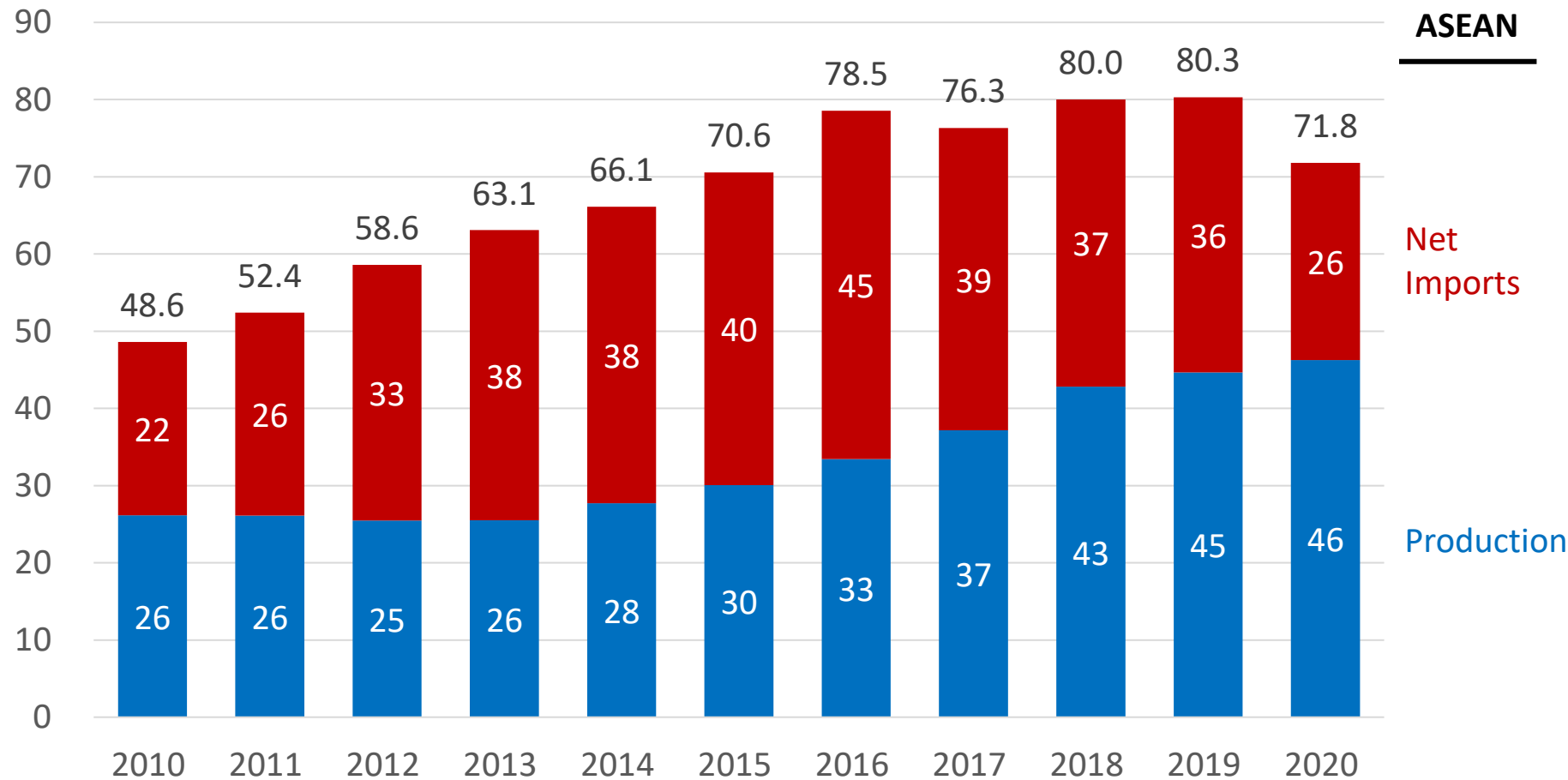


Singapore, Thailand, Vietnam H1 2021 ASC is higher than H1 2019

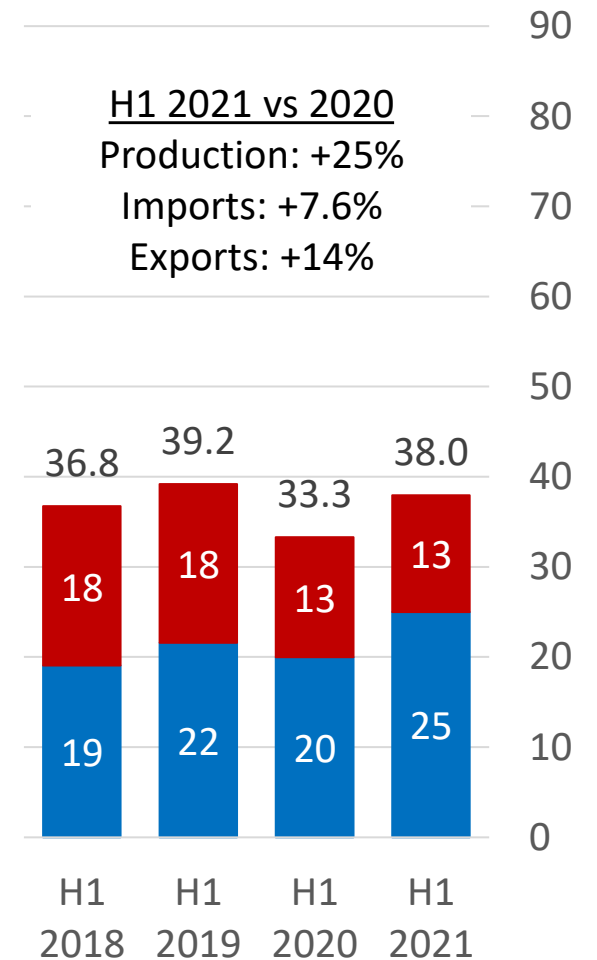
ASEAN-6 STEEL PRODUCTION

In 2020, domestic production increased 3.7% to support the short fall in imports from supply chain disruptions; Production growth continued in H1 2021, up 25% compared to H1 2020; Net imports flat in H1 2021

ASEAN 6 – Apparent Steel Consumption (million MT)



ASC Half Year Figures (million MT)

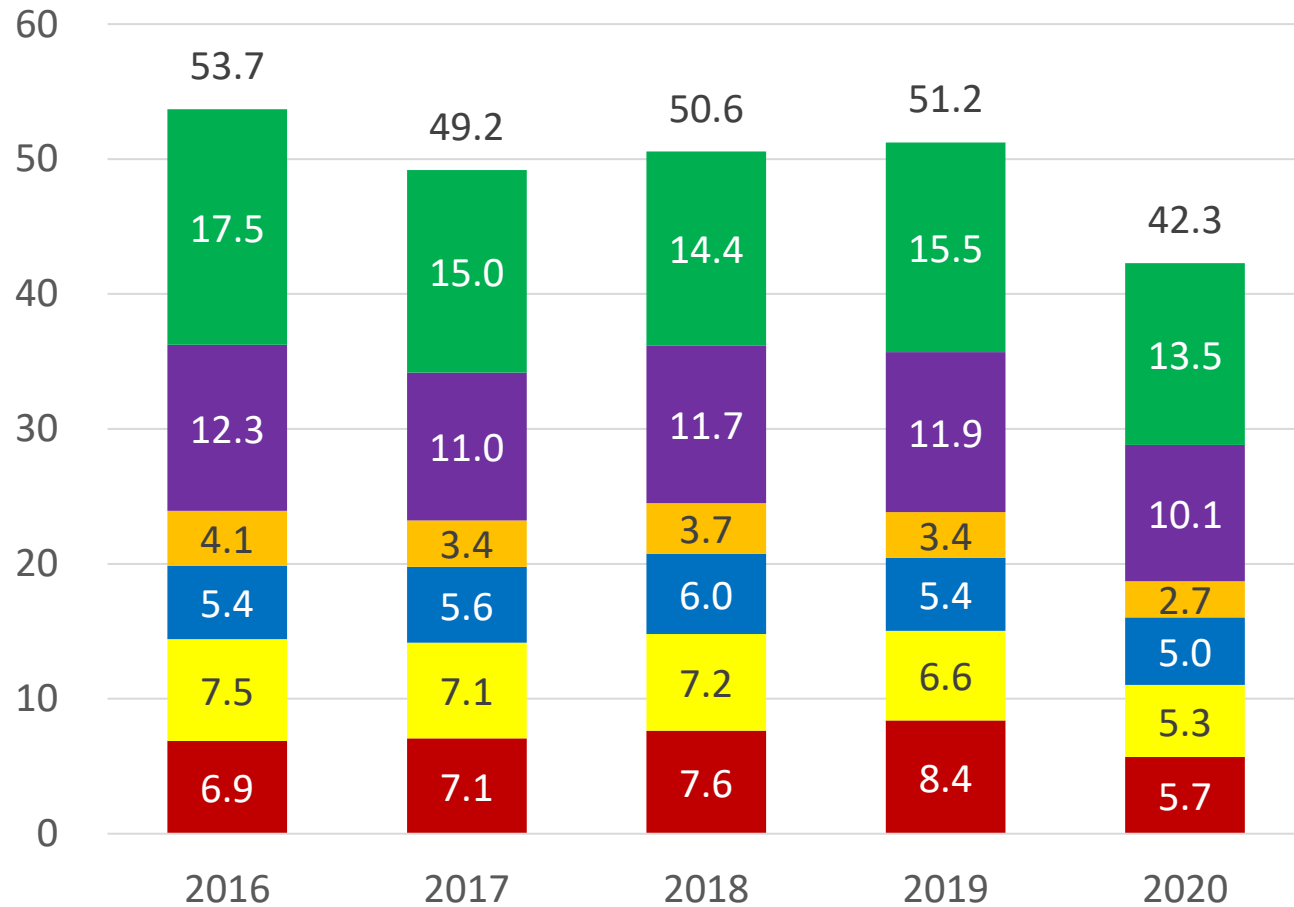


Source: SE AISI Statistics, STECO

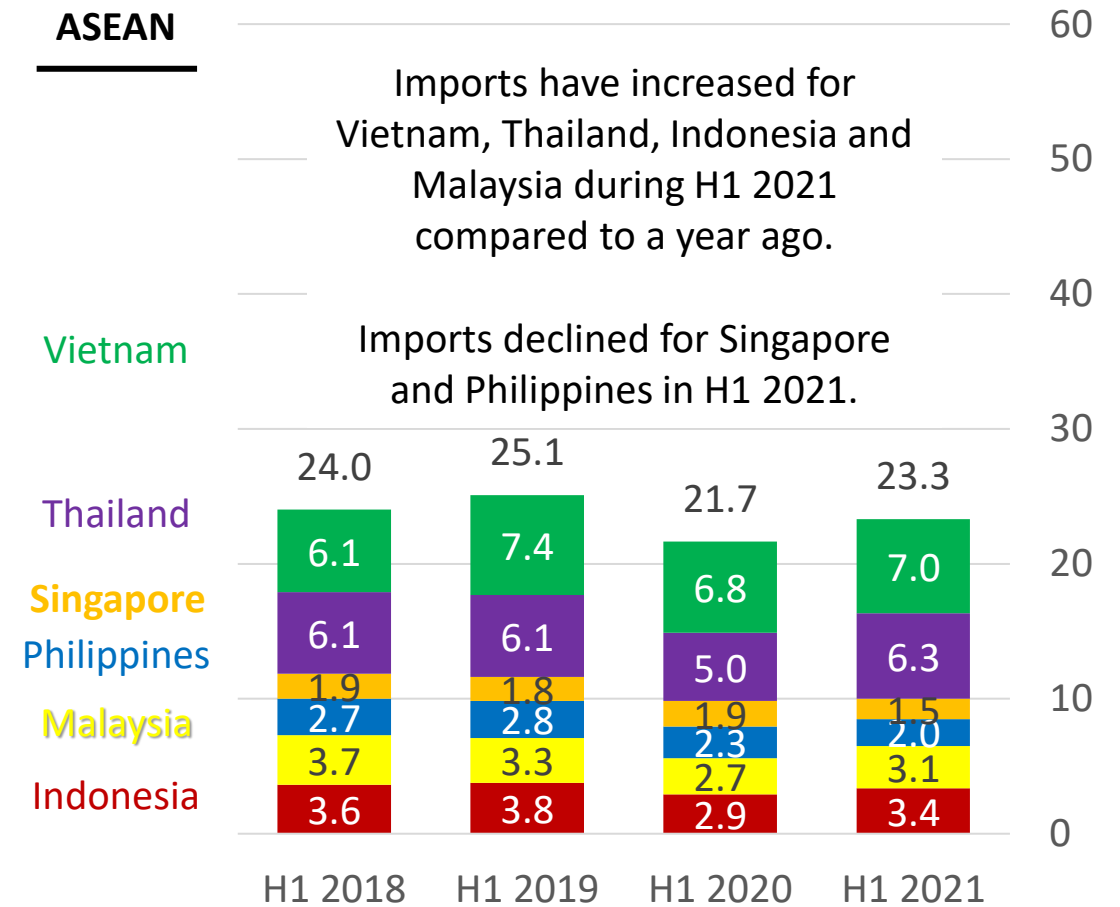
ASEAN FINISHED STEEL IMPORTS

In 2020, imports fell to 42.3 million tonnes from 51.2 million tonnes a year ago; Vietnam and Thailand are the largest importers of steel; During H1 2021, imports rose 8% from the same period a year ago

ASEAN 6 – Imports (million MT)



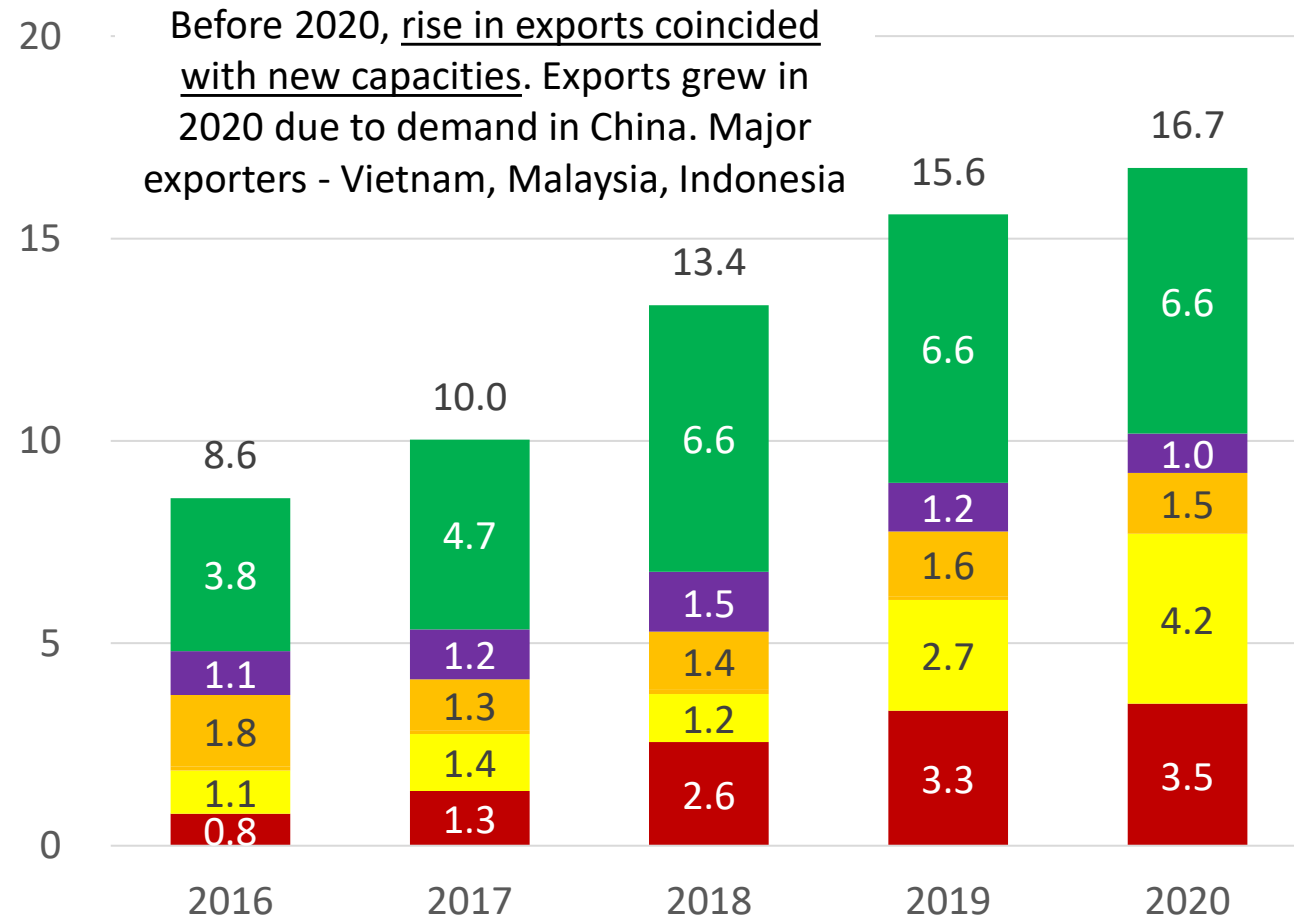
Imports – Half Year Figures (million MT)



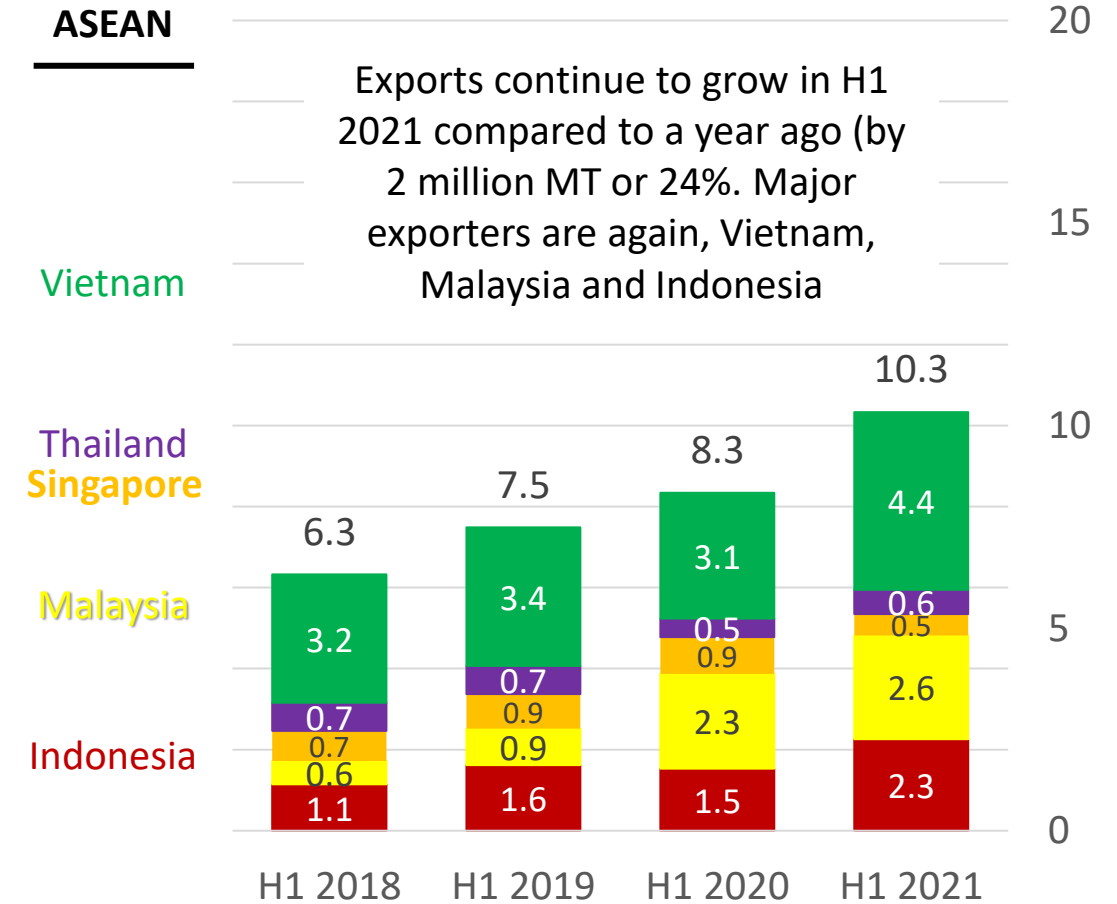
ASEAN FINISHED STEEL EXPORTS

In 2020, exports rose to 16.7 million tonnes from 15.6 million tonnes a year ago; Major exporters are Vietnam Malaysia and Indonesia; During H1 2021, exports grew 2 million tonnes or 24% from a year ago

ASEAN 6 – Exports (million MT)

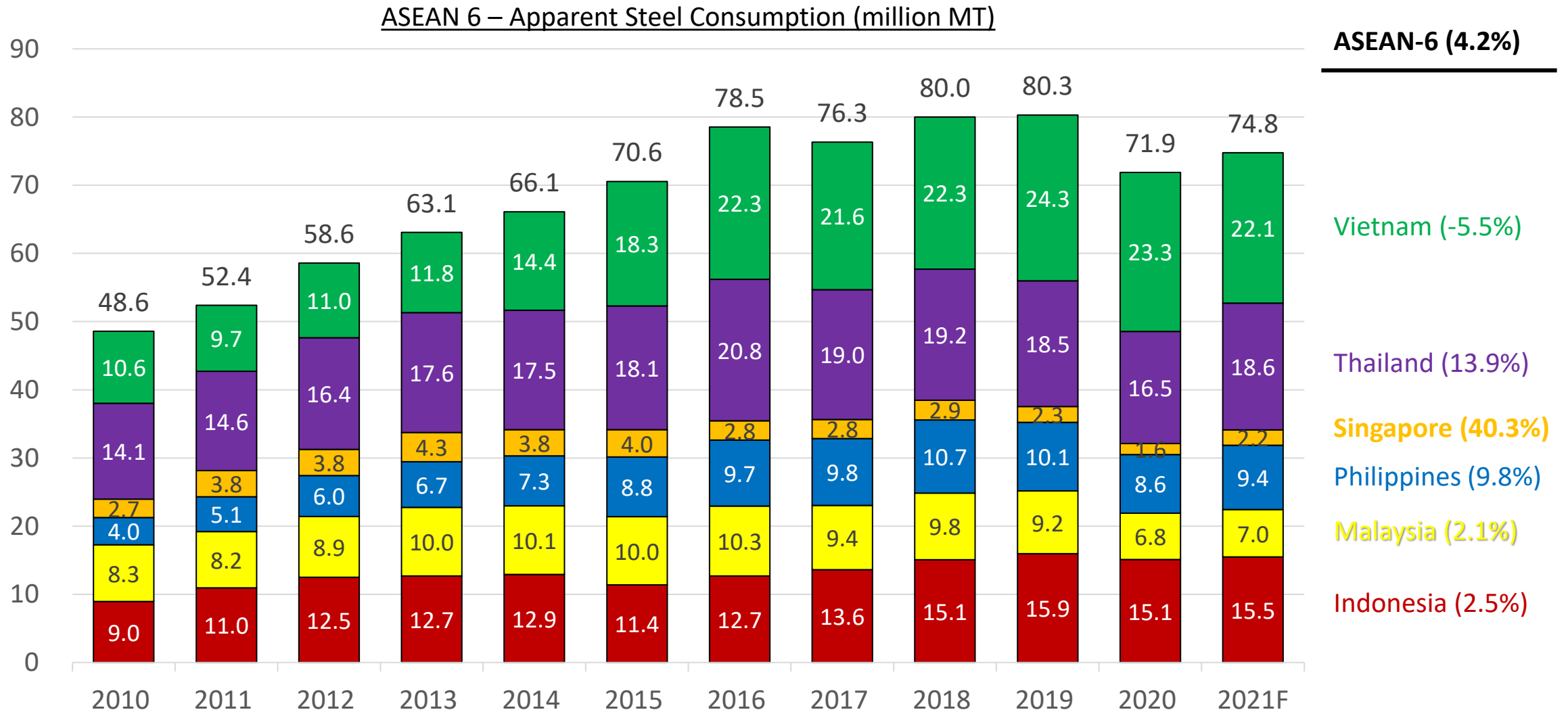


Exports – Half Year Figures (million MT)



ASEAN-6 STEEL DEMAND FORECAST

ASEAN-6 steel demand is projected to reach 74.8 million tonnes in 2021, with a downward revision from previous forecast due to the impact of the Delta variant in Q3/Q4 of 2021



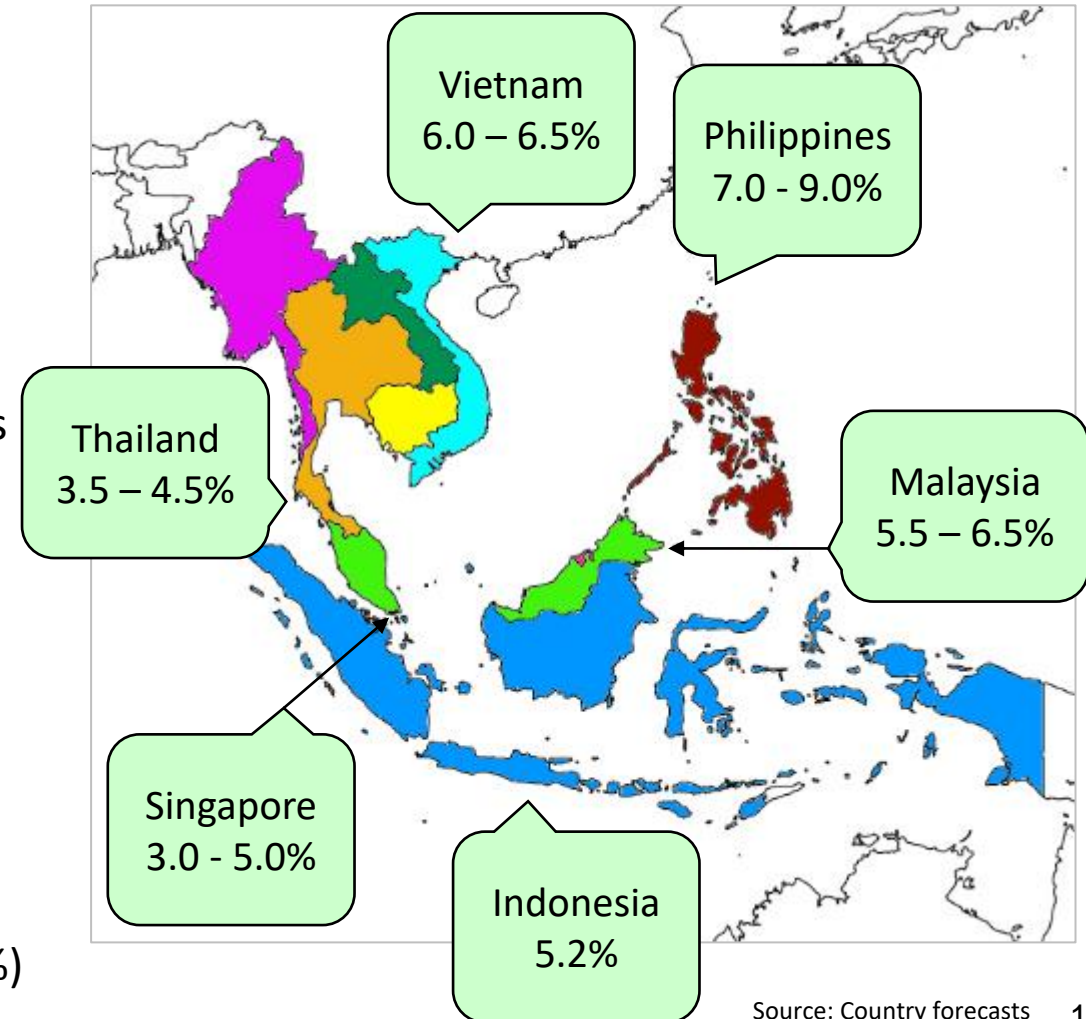
Source: SEASI Statistics, STECO

DEVELOPMENTS IN ASEAN-6

2022 appears to be a better year as efforts are underway to boost economic recovery in ASEAN-6 countries; Challenges remain due to volatile commodity and energy prices and impacts from the Russian Ukraine war

- Vaccination efforts in ASEAN countries well underway
- ASEAN economies continue grow as borders re-open
- Public construction is expected to drive construction recovery
- Challenges for construction sector remain due to:
 - Social distancing restrictions, new variants (?)
 - How soon can migrant labour / expertise return?
- Volatile steel prices affecting Contractors in fixed term contracts
- Global shipping operations disruption continues
- The Russian – Ukraine war’s impacts
 - Volatile oil and gas prices which will increase inflation
 - Chip shortage to hit auto industry (shortage of semiconductor grade neon gas)
 - ASEAN-6 imported only about 4% (~6.5 m MT in 2021) of steel processing related materials from Ukraine & Russia (coking coal 57%, iron ore 13%, semis 22%, HRC & Plates 8%)

ASEAN-6 GDP Forecast for 2022



OUTLINE:

ASEAN Economies
amid COVID19

The ASEAN Steel
Industry Situation

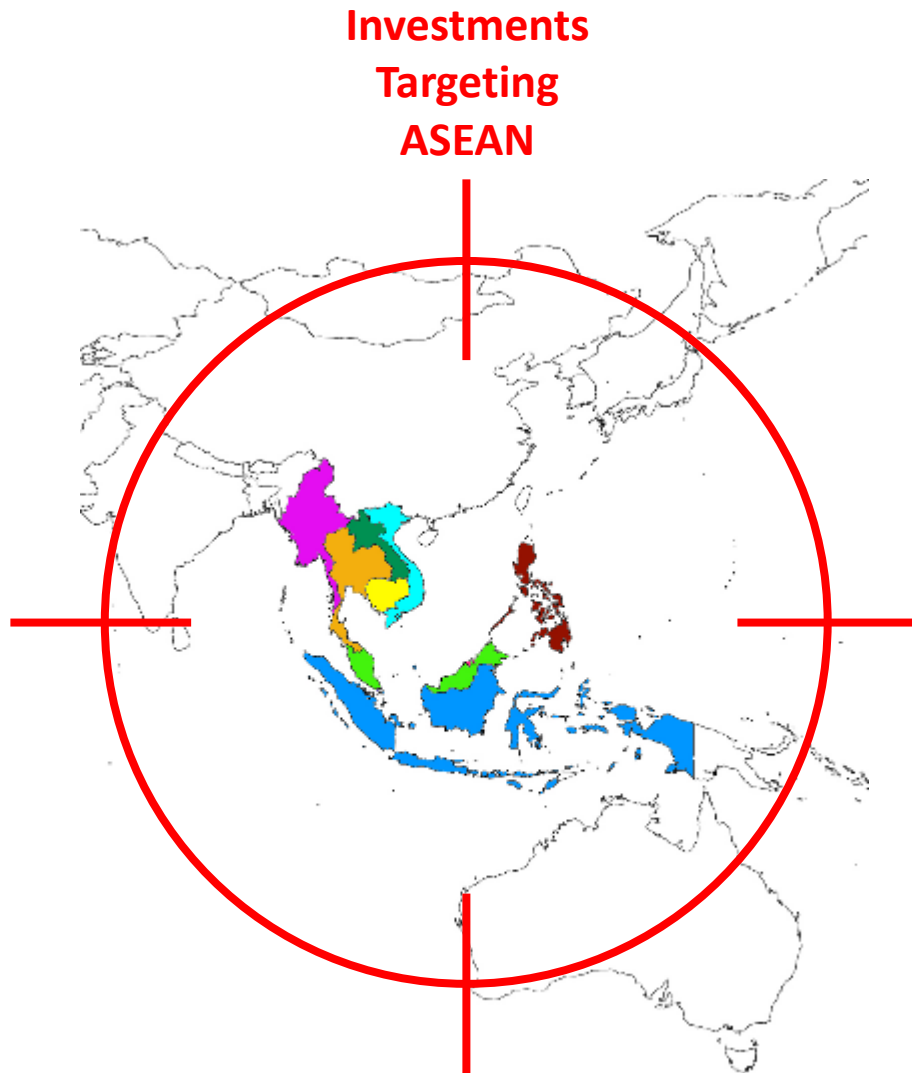
Investment Update

Appendix

- Investments
 - Overcapacity Issues
 - A Sustainability Issue

KEY FACTORS LEADING TO INVESTMENT IN ASEAN (STEEL PROJECTS)

Push and Pull factors encouraging investments in Steel Projects in ASEAN, which is still ongoing despite the pandemic



1 Attractive Markets

- Growth Region
- **Minerals Advantage**
- Government Incentives
- Less Strict on Environment

2 China Supply Reforms

- **Capacity Reduction**
- Compensation for Closure

3 Export Markets

- **ASEAN FTAs encourages trade**
- **Able to export back to China (for Chinese investments in ASEAN)**

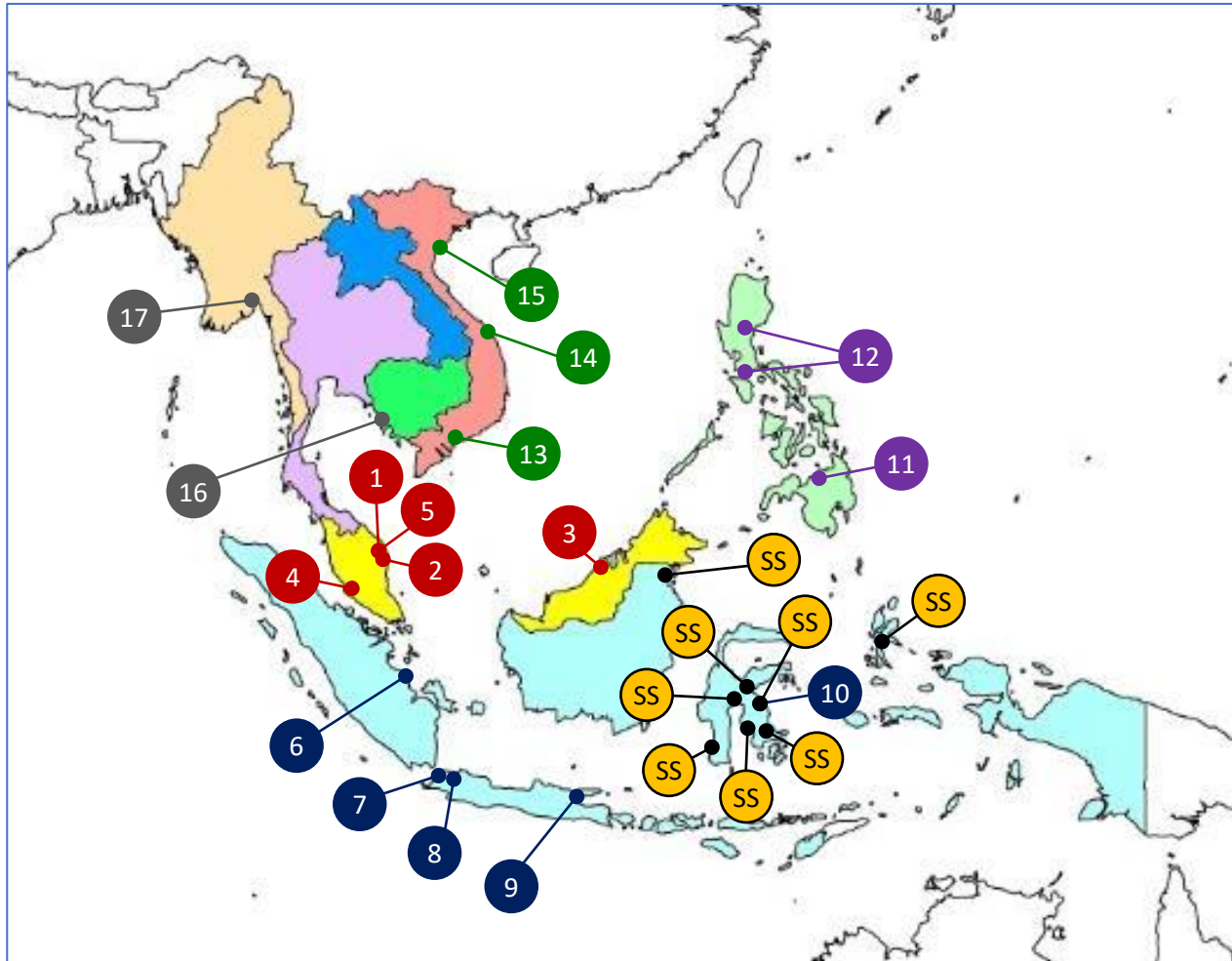
4 Other Factors

- RCEP supports Investments
- Belt & Road Initiatives

STEEL INVESTMENTS IN ASEAN

Steel investments in ASEAN are focused on Indonesia, Malaysia, Vietnam and Philippines, and these are dominated by investments from China; Of late there are many stainless steel investments in Indonesia

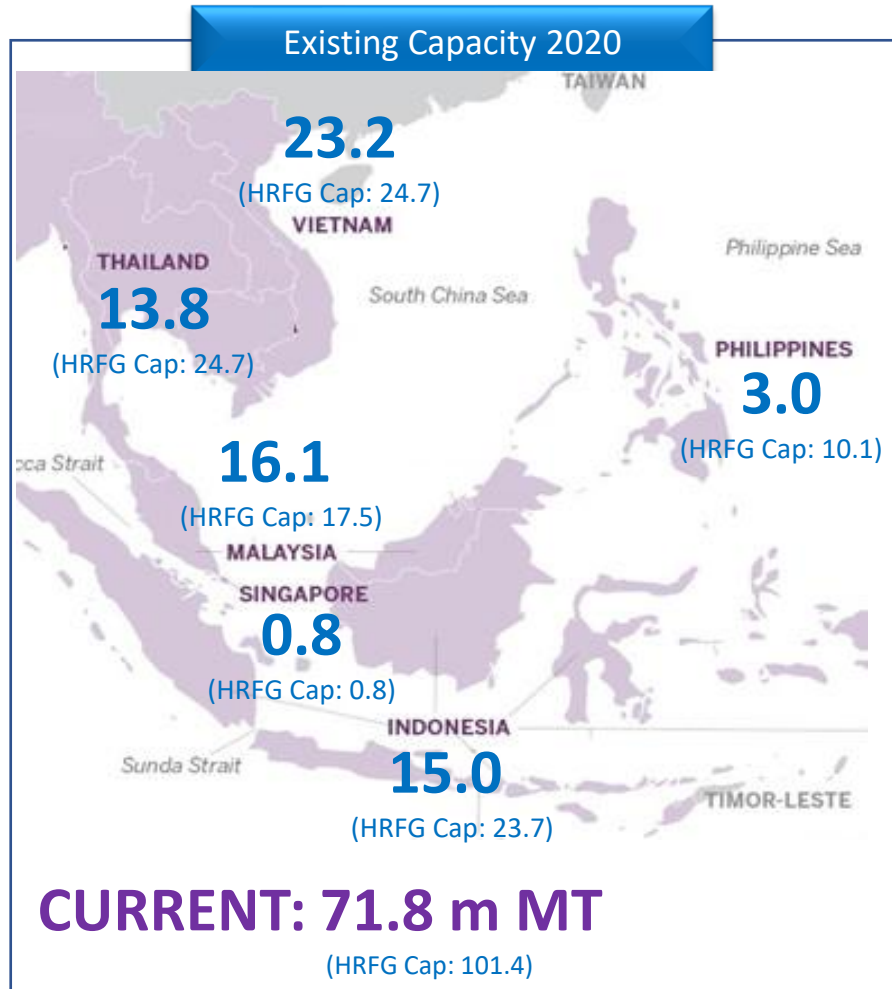
MegaMill Investments and Stainless Steel Projects in ASEAN



	Company (Country)	Prod	ExCap	New	Schedule	Status	
1	Eastern Steel (MY)	FLP	0.7	2.0	2024	Announced	🇨🇳
	Eastern Steel (MY)	FLP	-	2.3	?	Planning	
2	Alliance Steel (MY)	LP	3.5	6.5	-	Planning	🇨🇳
3	WenAn Steel (MY)	FLP	-	10.0	2024	Construction	🇨🇳
4	Oriental Shield (MY)	FP	3.0	2.5	2024?	Announced	🇨🇳
5	JXR / Perwaja (MY)	LP	-	7.0		Reported	🇨🇳
6	Fuhai Indo (ID)	LP	-	3.0		Construction	
7	Krakatau Steel / Krakatau POSCO (ID)	FLP	4.8	5.2	2026	Announced	
8	Gunung Group (ID)	FP	-	1.5	2021	Construction	
9	Hebei Bishi Group (ID)	LP	-	3.0	2023e	Construction	🇨🇳
10	Dexin Steel (ID)	LP	3.5	2.5	2022	Construction	🇨🇳
	Dexin Steel (ID)	FLP	-	14.0	?	Announced	
11	Panhua Group (PH)	FP	-	10.0	2024	Construction	🇨🇳
12	SteelAsia Group (PH)	LP	2.0	2.2	2024	Planning	
13	Pomina Steel (VN)	LP	-	1.0	2021	Operations	
14	Hoa Phat Group (VN)	FLP	5.2	5.6	2024	Construction	
15	Formosa Ha Tinh (VN)	FLP	7.5	14.0	?	Planning / FS	
16	Baowu Steel (KH)	LP	-	3.0	?	Planning / FS	🇨🇳
17	Kunming Steel (MM)	LP	-	4.0	?	Planning / FS	🇨🇳
SS	Stainless Steel Projects	-	-	-	-	-	

THE FUTURE SCENARIO: ADDITIONAL CRUDE STEEL CAPACITY

Should all integrated mill capacities come on stream, there will be more than 80 million MT of steel coming from all the potential integrated mills in ASEAN, should all of them materialise

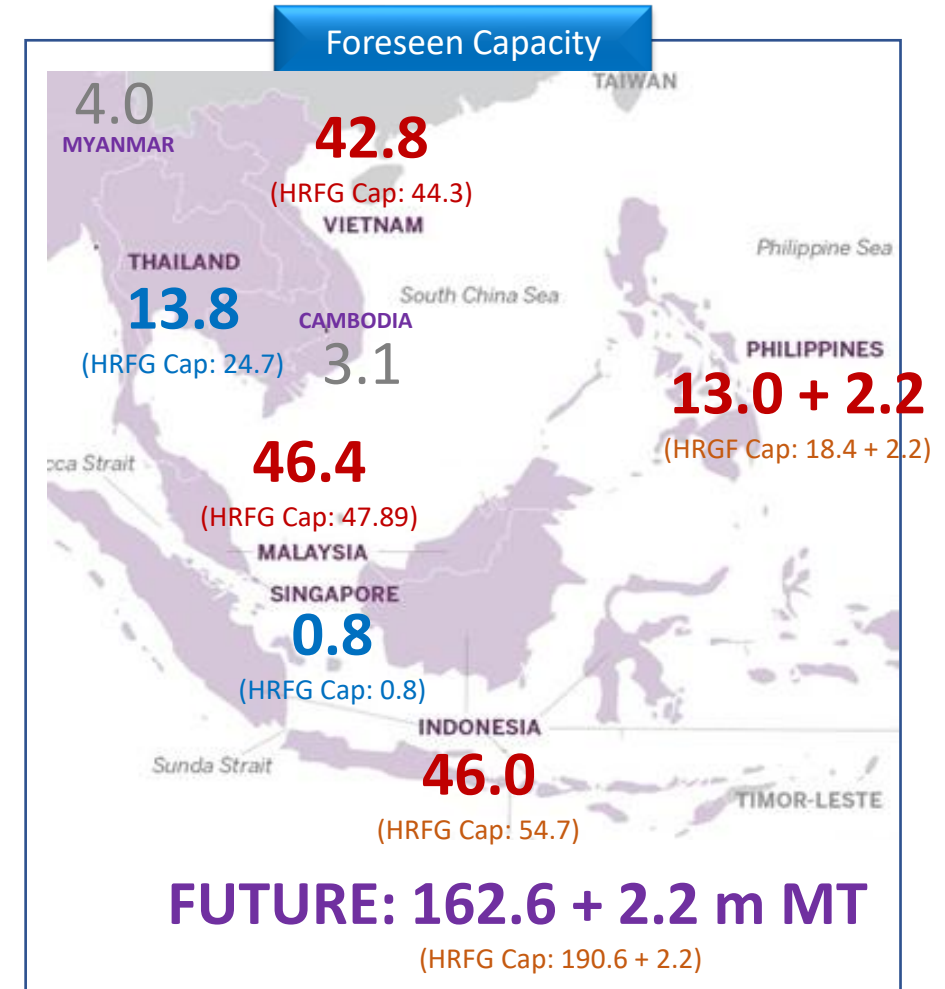


**New Integrated Mill Capacities
+ 90.8 m MT**

Excluding Myanmar & Cambodia

**New Electric Arc Furnace Capacities
+ 2.2 m MT**

Excluding Myanmar & Cambodia

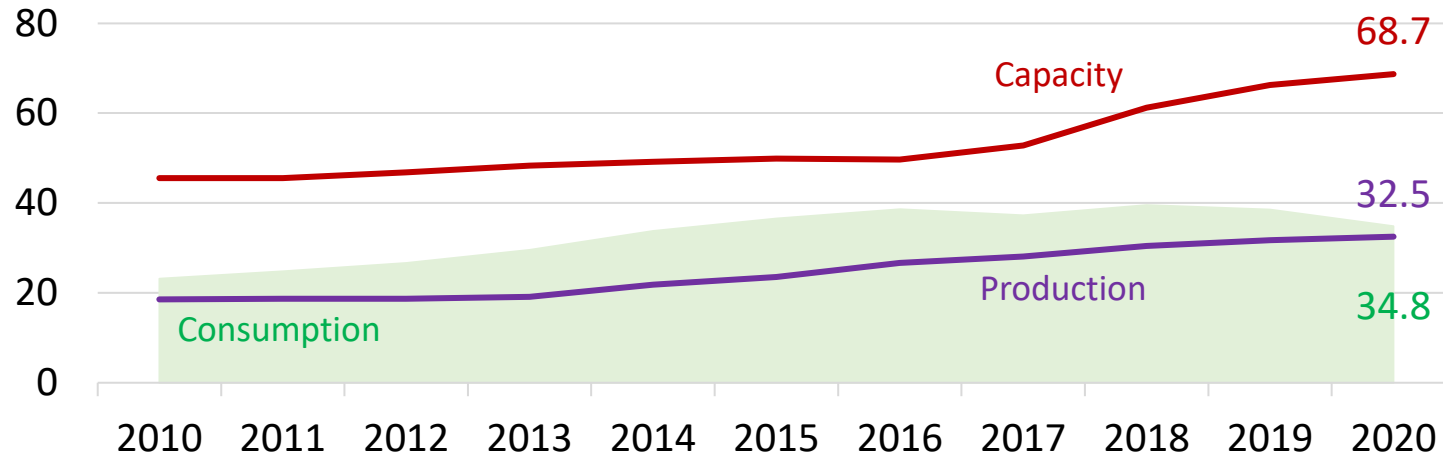


Note: Capacity is defined as crude steel capacity. Additional capacity of 83.9 million MT is from potential integrated mill. EAF capacities are an additional 2.2 million MT Rolling capacities and further downstream capacities are not included.
HRFG Cap = Hot Rolled Finished Goods Capacity equivalent. Hot rolled refers to rails, sections, bars, wire rod, hot rolled coils, plates.

OVERCAPACITY IN LONG AND FLAT STEEL (ASEAN)

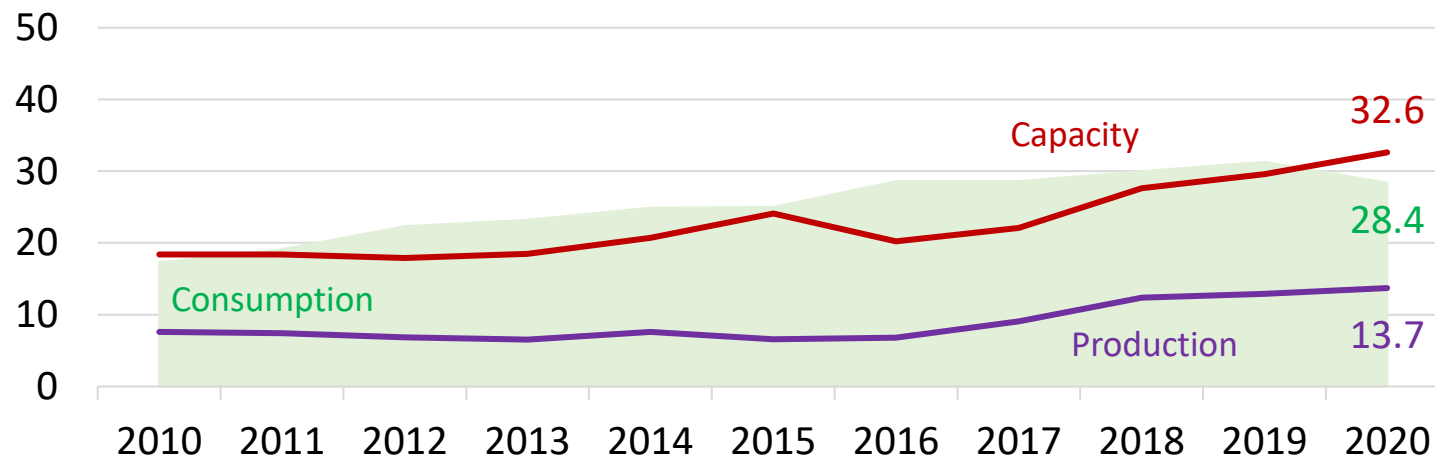
With the growth in capacities, the ASEAN steel industry is at an overcapacity, notably in the Long Products sector; The Flat Products sector is in overcapacity in certain countries; Utilization is low across ASEAN-6

Long Steel Consumption vs Hot Rolled Production and Capacity (million MT)



2020
Capacity Utilisation
47.3%

Flat Steel Consumption vs Hot Rolled Production and Capacity (million MT)

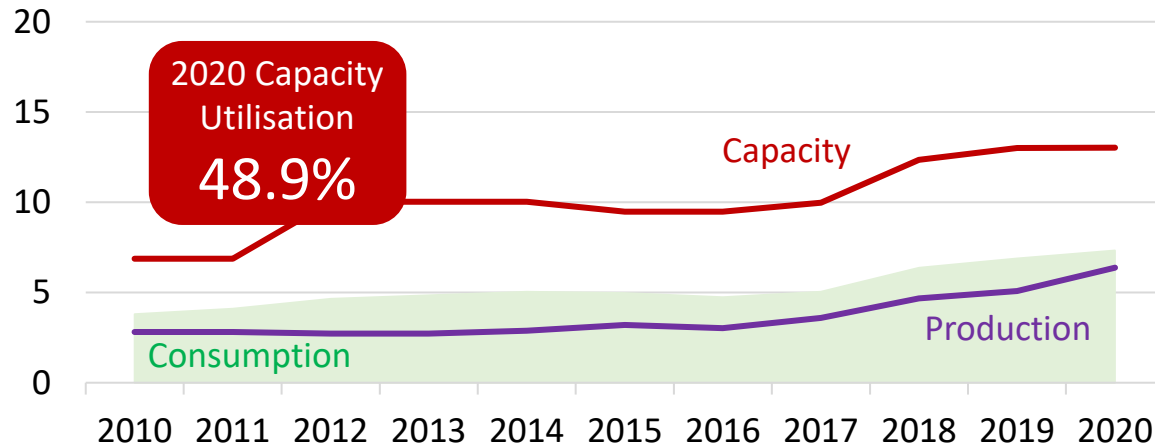


2020
Capacity Utilisation
42.0%

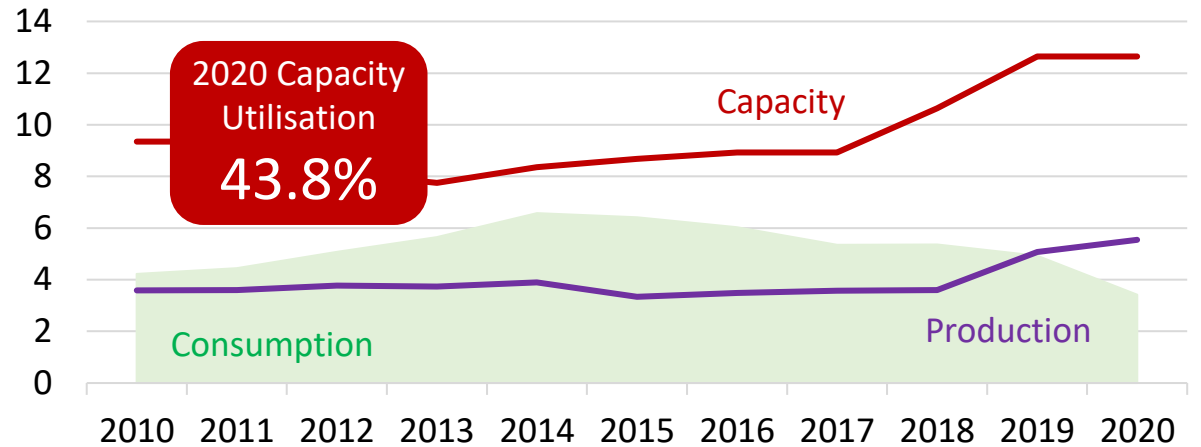
OVERCAPACITY IN LONG STEEL (SELECTED ASEAN)

Capacity utilization is low in ASEAN because of the overcapacity in the long products market; This is mostly due to overinvestments in the long products sector

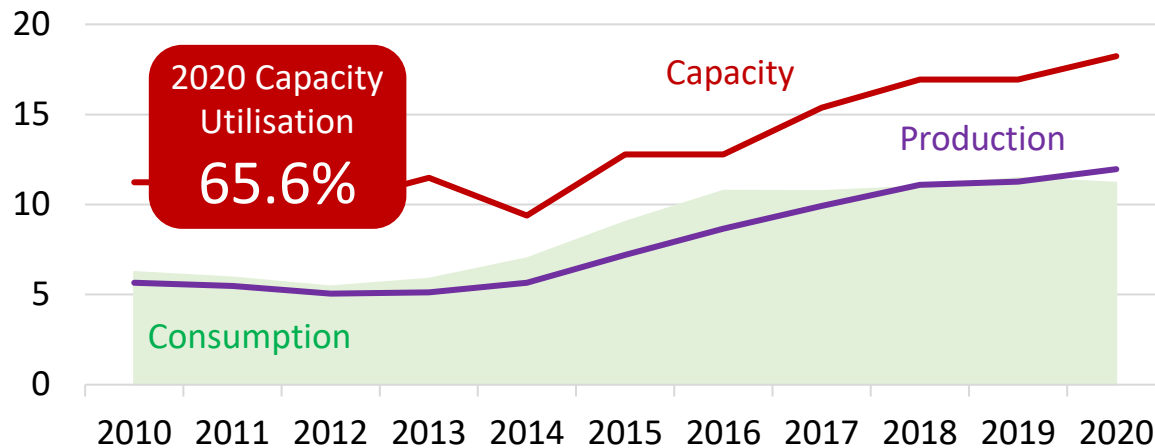
Indonesia Long Steel Consumption vs Production and Capacity (m MT)



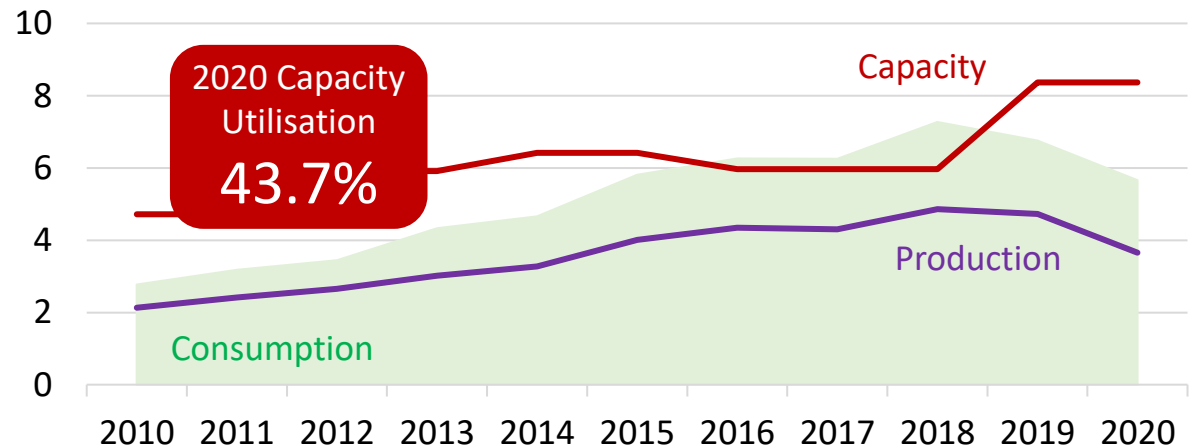
Malaysia Long Steel Consumption vs Production and Capacity (m MT)



Vietnam Long Steel Consumption vs Production and Capacity (m MT)



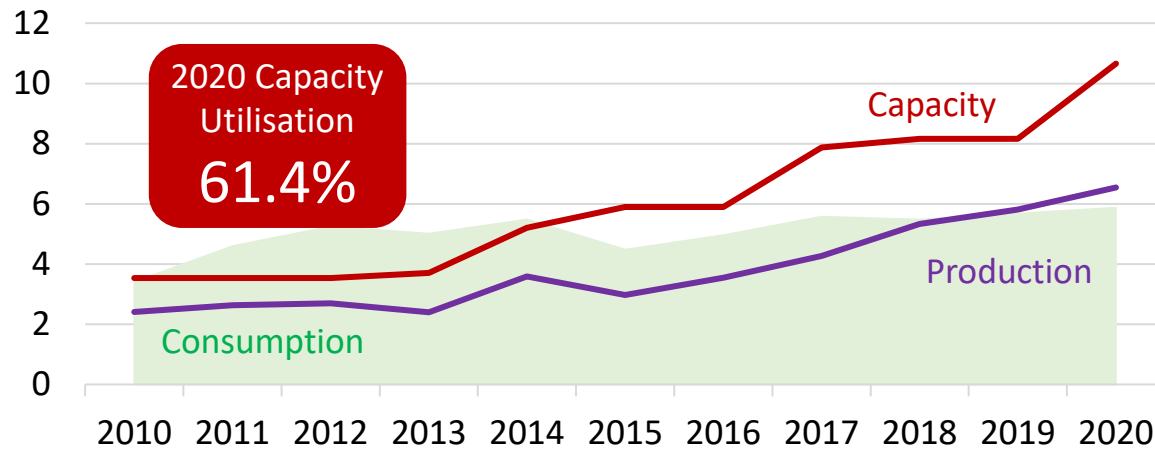
Philippines Long Steel Consumption vs Production and Capacity (m MT)



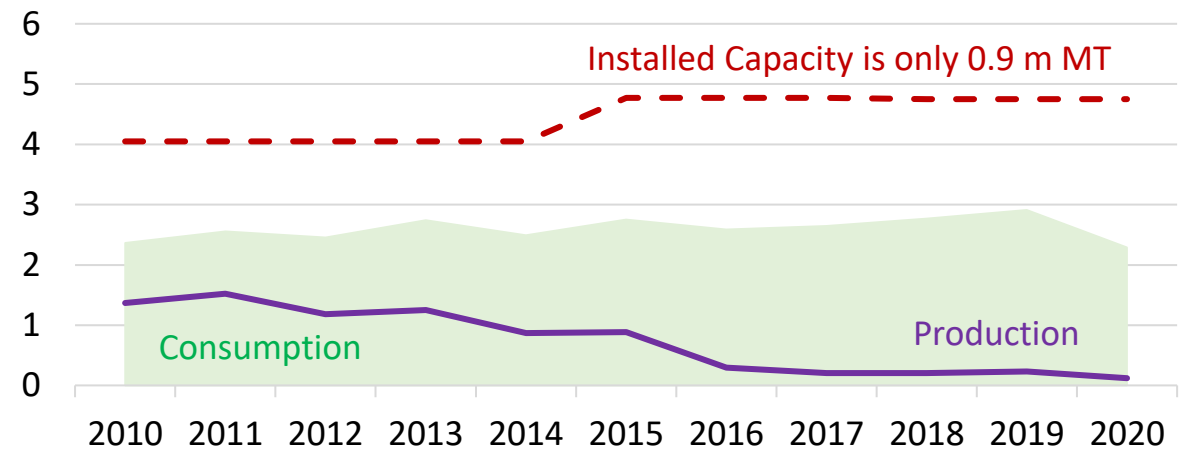
OVERCAPACITY IN FLAT STEEL (SELECTED ASEAN)

Of the countries attracting investments, Vietnam has room to set up new capacity; Philippines and Malaysia have no flat products capacity; **Indonesia's Hot Rolled Flat Products market is in an overcapacity**

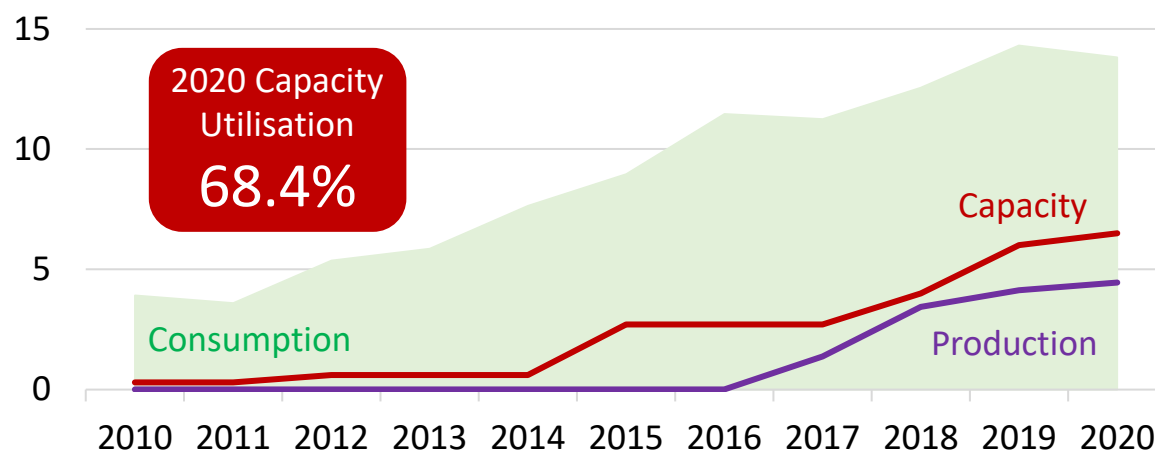
Indonesia Flat Steel Consumption vs Production and Capacity (m MT)



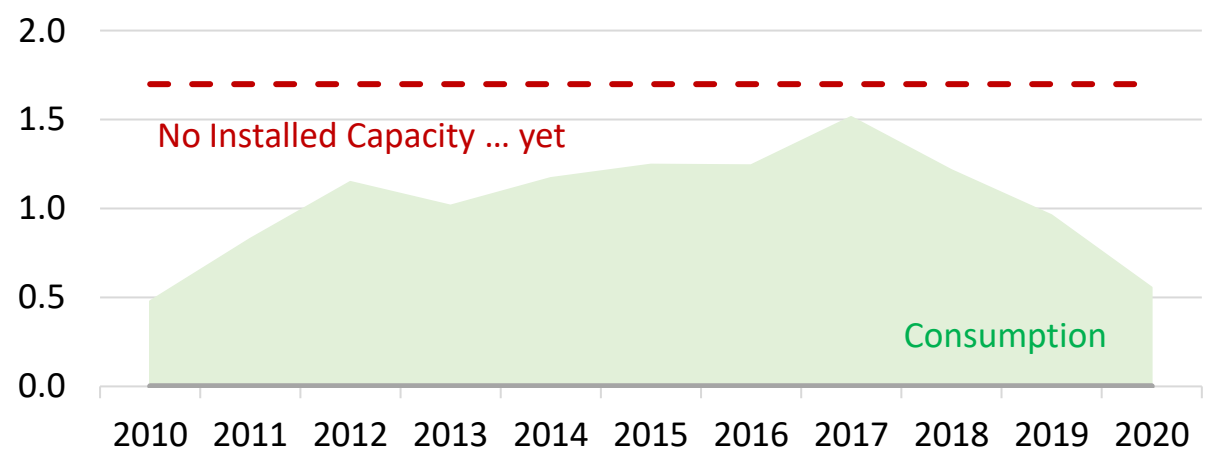
Malaysia Flat Steel Consumption vs Production and Capacity (m MT)



Vietnam Flat Steel Consumption vs Production and Capacity (m MT)



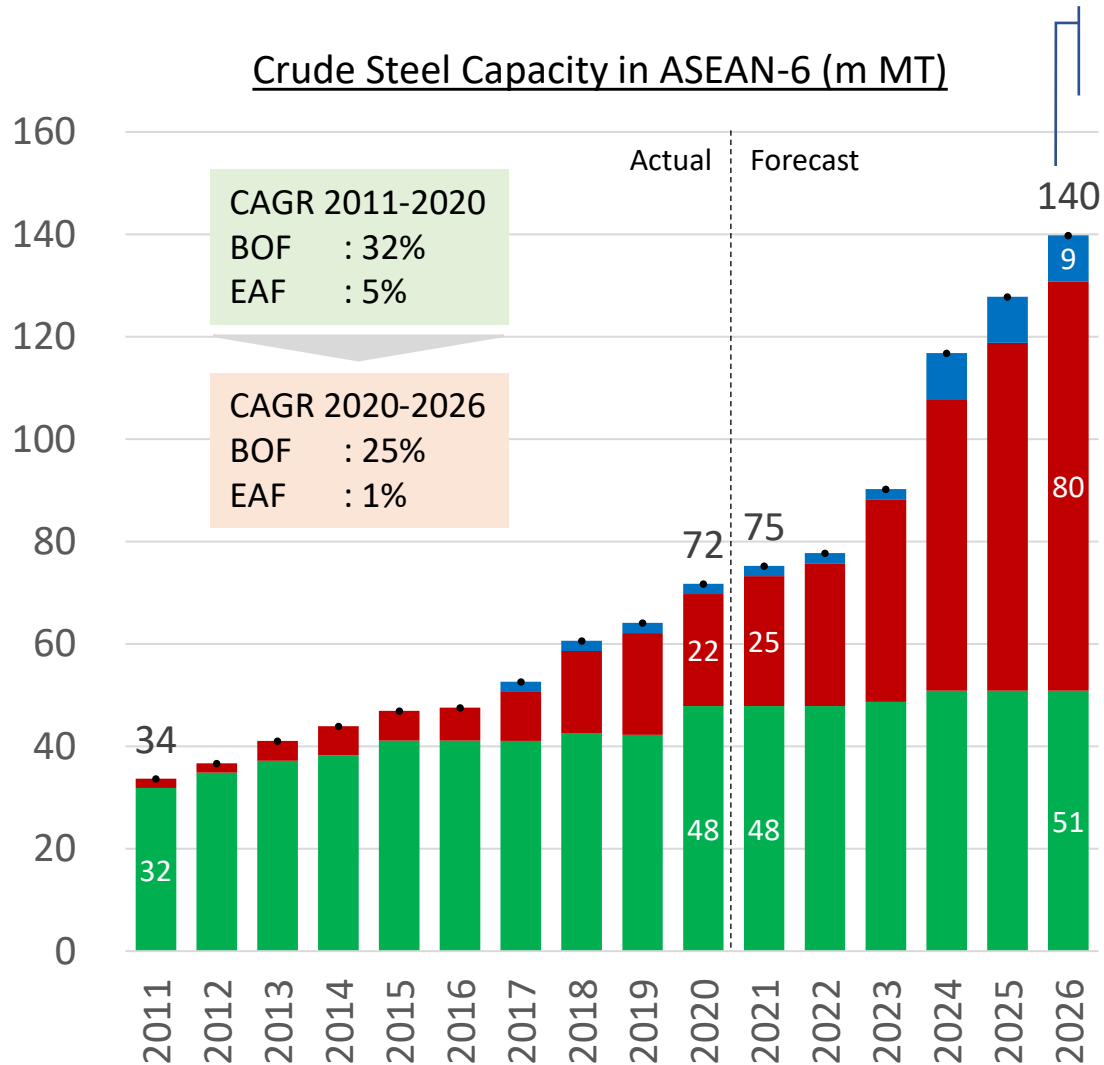
Philippines Flat Steel Consumption vs Production and Capacity (m MT)



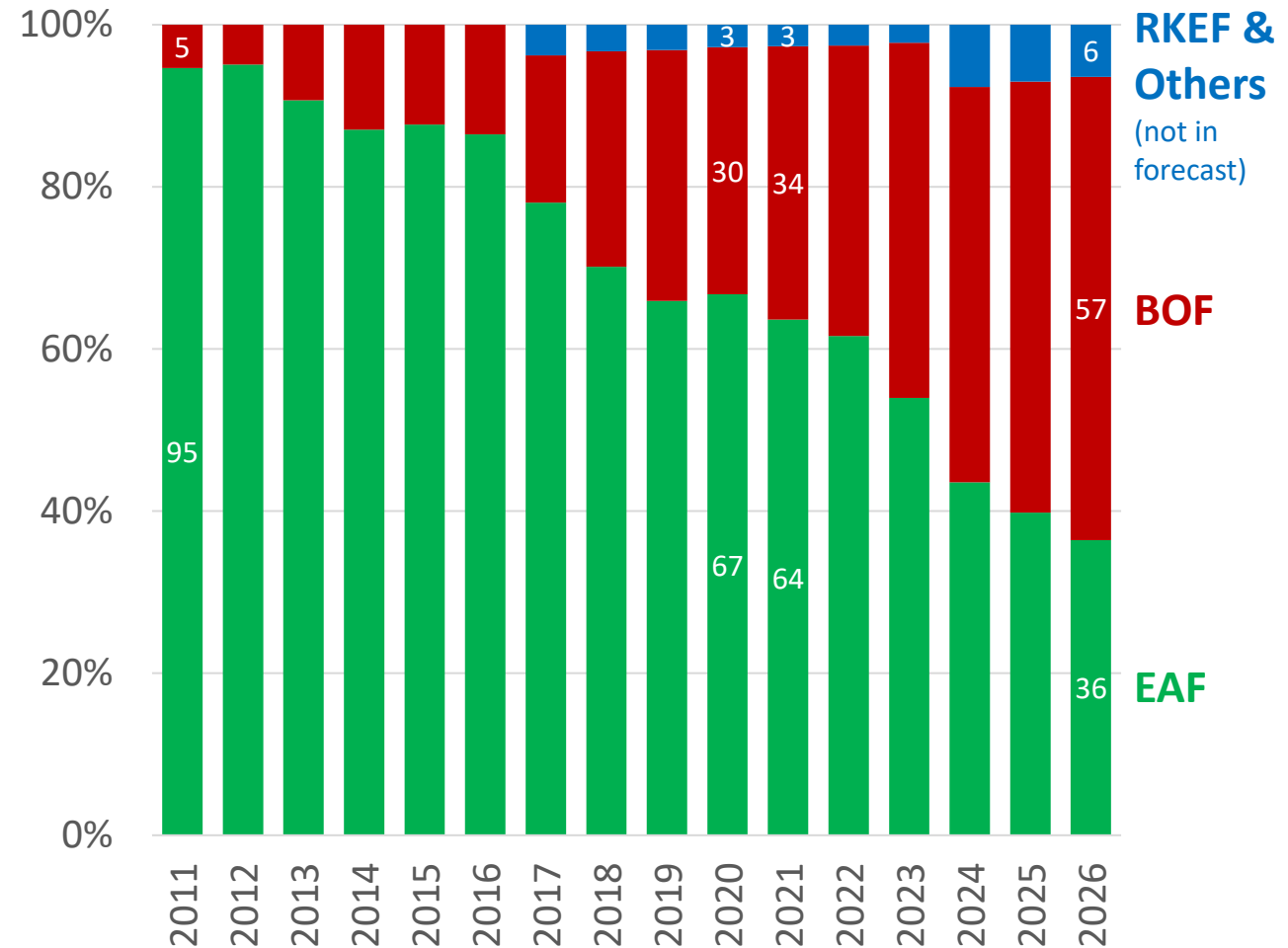
ASEAN IS STILL AN EAF TECHNOLOGY REGION ... BUT NOT FOR LONG

The ASEAN Steel Industry, being relatively young, has been a very green industry, until recently; BF/BOF megamills implementations have been rapid since 2014 and this is likely to continue in the near future

Crude Steel Capacity in ASEAN-6 (m MT)



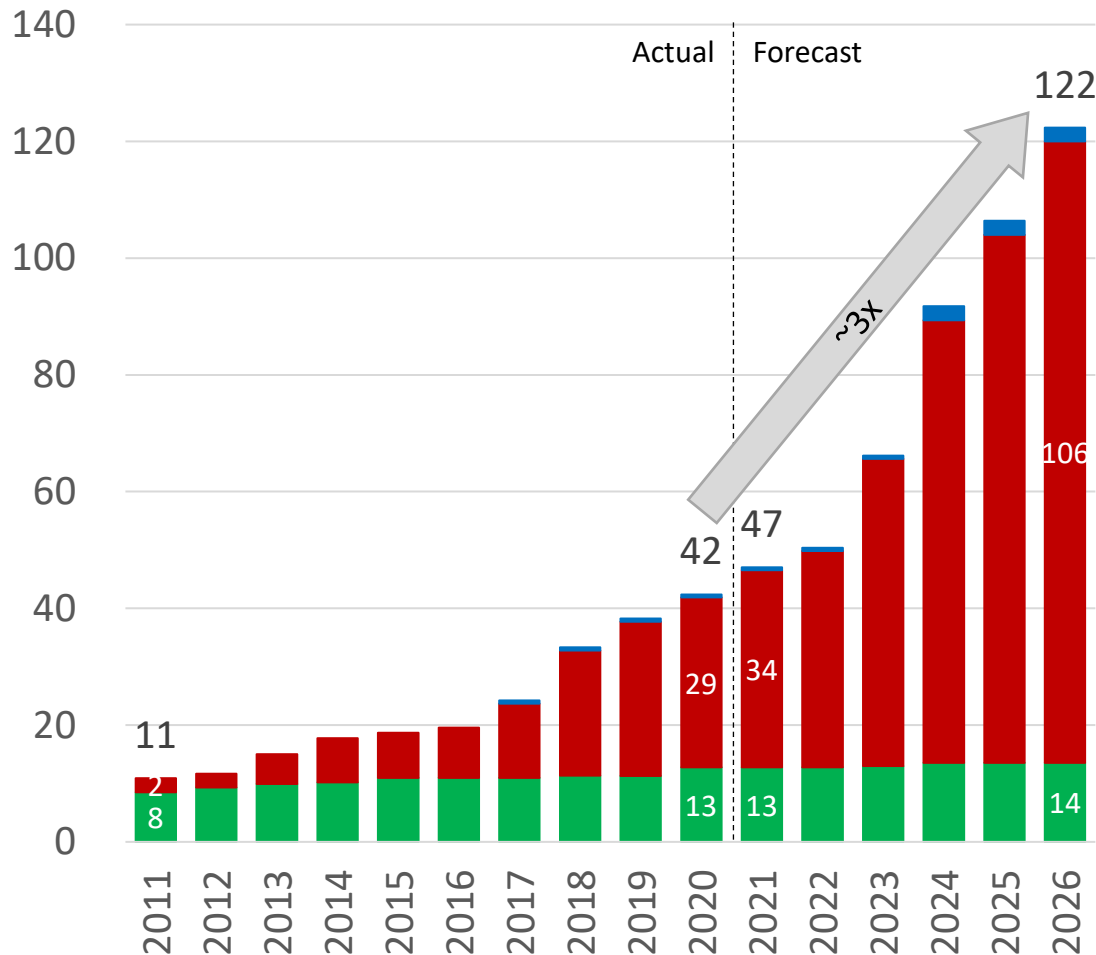
Crude Steel Capacity by Technology (%)



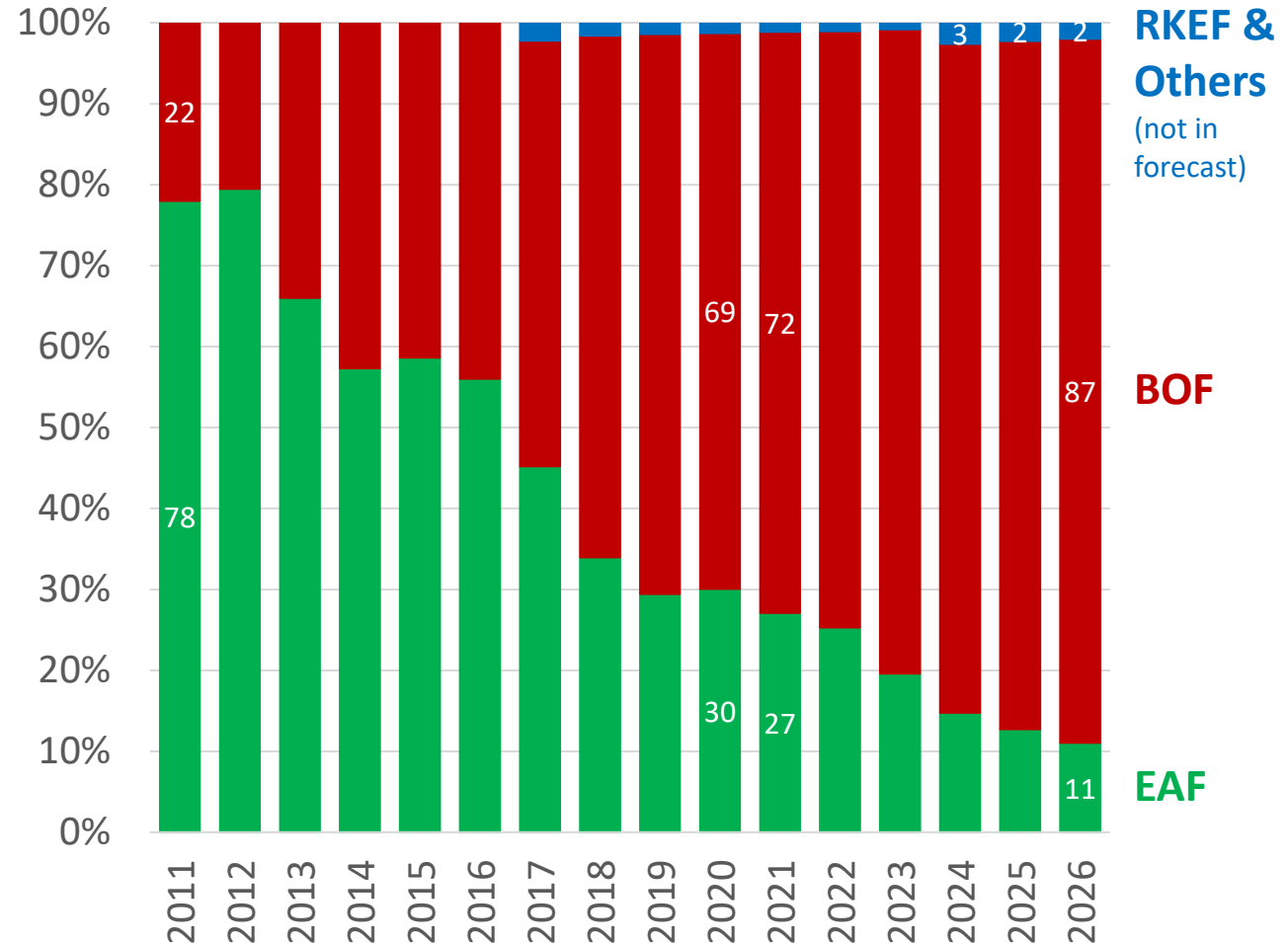
THERE WILL BE AN EXPLOSION OF CARBON EMISSION WITHOUT CCUS

Based on EU benchmarks for Blast Furnaces (1.331 tCO₂e) and EAFs (0.266 tCO₂e), ASEAN will see an explosion (~3x) in Carbon Emissions from its Steel Industry, if CCUS technologies are not implemented

Carbon Dioxide Emissions by Technology (million tCO₂e)



Carbon Dioxide Emissions by Technology (%)



Source: SEASI Statistics, SEASI Research & Analysis, publicly available information

Note: Forecasts are based on available information. They may not be complete and are subject to changes

OUTLINE:

- ASEAN Economies amid COVID19
- The ASEAN Steel Industry Situation
- Key Developments
- Summary

SUMMARY

While the COVID19 and economic situations are improving, the ASEAN Steel Industry is still facing challenges towards a sustainable future, esp. overcapacity issues will limit its transformation towards a sustainable future

1 Economies & Steel Demand

- Recovery from COVID19 ongoing.
- Borders are reopening to the vaccinated: business travellers, migrant labour, tourists,

- Economies are recovering
- Risks from variants, war, geopolitical tensions

2 Investments

- Steel investment focus is on Indonesia, Malaysia, Vietnam, Philippines
- Low utilisation issues in ASEAN-6 countries

- Overcapacity brings issues (profitability, upgrading, innovation)

3 Overcapacity

- ASEAN long products sector in overcapacity
- ASEAN flat products sector overcapacity only in certain countries. Gaps narrowing

- Encourage investments in sectors not in overcapacity
- Support for consolidation

4 Climate Change Issues

- Along with overinvestments, ASEAN-6 steel industry is heading towards de-greening
- Carbon emissions are expected to triple in 2026 from 2020

- Need for green equipment
- Need for green upgrading
- Need for public private partnership

*Thank You
for
Your Kind Attention*



Wee-Jin YEOH

Secretary General

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