

VIETNAM'S CEMENT INDUSTRY – CURRENT STATUS AND DEVELOPMENT PLAN

Assoc Prof., Dr. Lương Đức Long –
Vietnam Cement Association



CONTENTS

- I. OVERVIEW OF VIETNAM CEMENT INDUSTRY**
- II. EMISSIONS REDUCTION IN CEMENT PRODUCTION**
- III. VIETNAM BUILDING MATERIALS DEVELOPMENT STRATEGY FOR 2021-2030, WITH A VISION TOWARDS 2050 AND ABILITY TO ACHIEVE GOALS**
- IV. CONCLUSIONS**



I. OVERVIEW OF VIETNAM CEMENT INDUSTRY

A. SCALE BY DESIGN CAPACITY

1. National designed capacity (under operation):

Clinker, ton/year	Cement, ton/year
95,000,000	112,000,000

2. Number of existing cement factories (with clinker production): 57 factories

3. Number of production lines under operation: 83 lines

4. Scale by designed capacity (production lines – for clinker)

≥ 3000 tpd	2500 tpd	< 2000 tpd
47	13	23

I. OVERVIEW OF VIETNAM CEMENT INDUSTRY

B. DISTRIBUTION OF CEMENT FACTORIES BY REGION IN VIETNAM

Content	Number of factories (with clinker production) by region		
	North	Middle (Nghệ An – Quảng Nam)	South
Number of factory	43	10	4
Cement design capacity (mil. ton/year)	86.87 (77.47%)	17.2 (15.34%)	8.06 (7.19%)



I. OVERVIEW OF VIETNAM CEMENT INDUSTRY

PRODUCTION IN THE LAST FIVE YEARS (2018 – 2022)

Product	Production (mil. ton/year)				
	2018	2019	2020	2021	2022
Clinker	77.6	78.4	80	86.4	79.8
Cement	97	98	100	108	99,7

EXPORT IN THE LAST FIVE YEARS (2018 – 2022)

Product	Xuất khẩu (mil. ton/year)				
	2018	2019	2020	2021	2022
Clinker	22.90	22.69	23.21	28.89	15.95
Cement	9.10	11.40	14.81	16.81	15.99

Ghi chú (*): Tỉ lệ clinker/xi măng = 0.80

II. EMISSION REDUCTION MEASURES IN CEMENT PRODUCTION

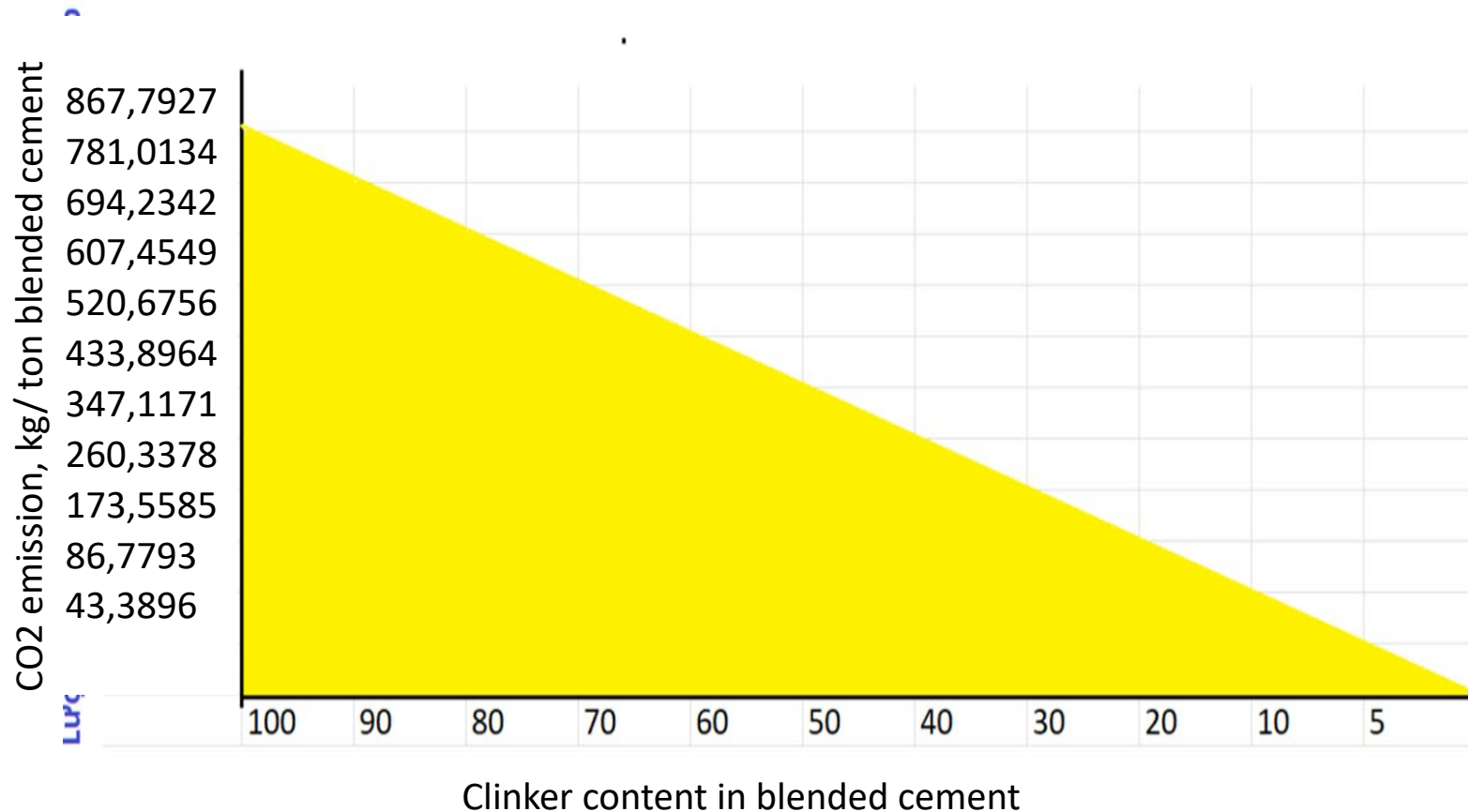
B. EMISSION INTENSITY REDUCTION IN CLINKER PRODUCTION

- 1) Reduce clinker burning heat (Maximum 201 kg CO₂/kg clinker).**
- 2) Reduce power consumption of all equipment in the production line.**
- 3) Use alternative fuels.**
- 4) Produce another type of clinker, not Portland clinker.**

II. EMISSION REDUCTION MEASURES IN CEMENT PRODUCTION

C. Emission intensity reduction in Portland cement production

- 1) Reduce power consumption in cement grinding system
- 2) Use additives (Produce blended cements)



Clinker content in blended cement in some countries

- EU: Approximately 77 – 80% clinker.
- Viet Nam: Approximately 70 – 75% clinker.

Notes: Most of Vietnam's cement exports meet CEM I (EN 197-1) or Type I (ASTM C150) standards with clinker content from 90 to 95%.

III. VIETNAM BUILDING MATERIALS DEVELOPMENT STRATEGY FOR 2021-2030, WITH A VISION TOWARDS 2050 (DECISION 1266/QD-TTG, 2020)

A. Ability to achieve goal according to Decision 1266

Emission sources	Level			Data sources
	Recent (*)	Target 2021-2030	Target 2031-2050	
CO ₂ from raw material, kgCO ₂ /ton clinker	525	525	525	IPCC
Heat consumption for clinker, kcal/kg	820	730	700	Decision 1266
Emission coefficient for anthracite	0.41 kg CO ₂ /kcal			IPCC
Electricity consumption for clinker production, kWh/ton	65	65	60	Decision 1266
Electricity consumption for cement grinding, kWh/ton	35	30	20	Decision 1266
Emission coefficient for electricity	0.8041 kg CO ₂ /kwh			MONRE

III. VIETNAM BUILDING MATERIALS DEVELOPMENT STRATEGY FOR 2021-2030, WITH A VISION TOWARDS 2050 (DECISION 1266/QD-TTG, 2020)

B. Ability to achieve goal according to Decision 1266

Emission sources	Level			Data sources
	Recent (*)	Target 2021-2030	Target 2031-2050	
Total emissions, kg CO ₂ /ton clinker	913.47	876.57	860.25	Calculation
Content of clinker in cement	70%	65%	60%	Decision 1266
Total emissions, kg CO ₂ /ton cement	667.57	593.89	532.30	Calculation
Target according to Decision 1266, kg CO ₂ /ton cement	-	650	550	

Notes:

- (*) Data of VNCA in 2023.

- When using energy from WHR and alternative fuels from industrial waste, total CO₂ emissions will be reduced.

IV. CONCLUSIONS

- 1) Vietnam is a big country in cement production and can produce over 100 million tons of cement per year.
- 2) In the process of development, Vietnam's cement industry has constantly modernized production technology, reduced consumption of raw materials, fuel and electricity and achieved good initial results.
- 3) The Government of Vietnam has set specific targets for the milestone years 2030 and 2050 in terms of the degree of technological modernization, the reduction of production costs, and the reduction of GHG emissions.
- 4) When the EU applies CBAM, Vietnam's clinker/cement exports to the EU will be subject to a very large carbon tax due to the high emission rate because of the high cost of production energy and the lower rate of renewable energy usage compared to the EU.

IV. CONCLUSIONS

5) Adaptation measures for CBAM:

- Promote technological innovation and reduce emissions as described above.
- Build a carbon offset mechanism for the use of alternative fuels and raw materials including domestic waste use, WHR as clinker alternatives and promote renewable energy.
- Develop domestic carbon market and support cement factories to use waste to produce cement and invest in WHR.

*THANK YOU FOR
YOUR ATTENTION!*

