The Situation of Railway Transportation in Thailand and its Prospective Role in Future Inland Transportation

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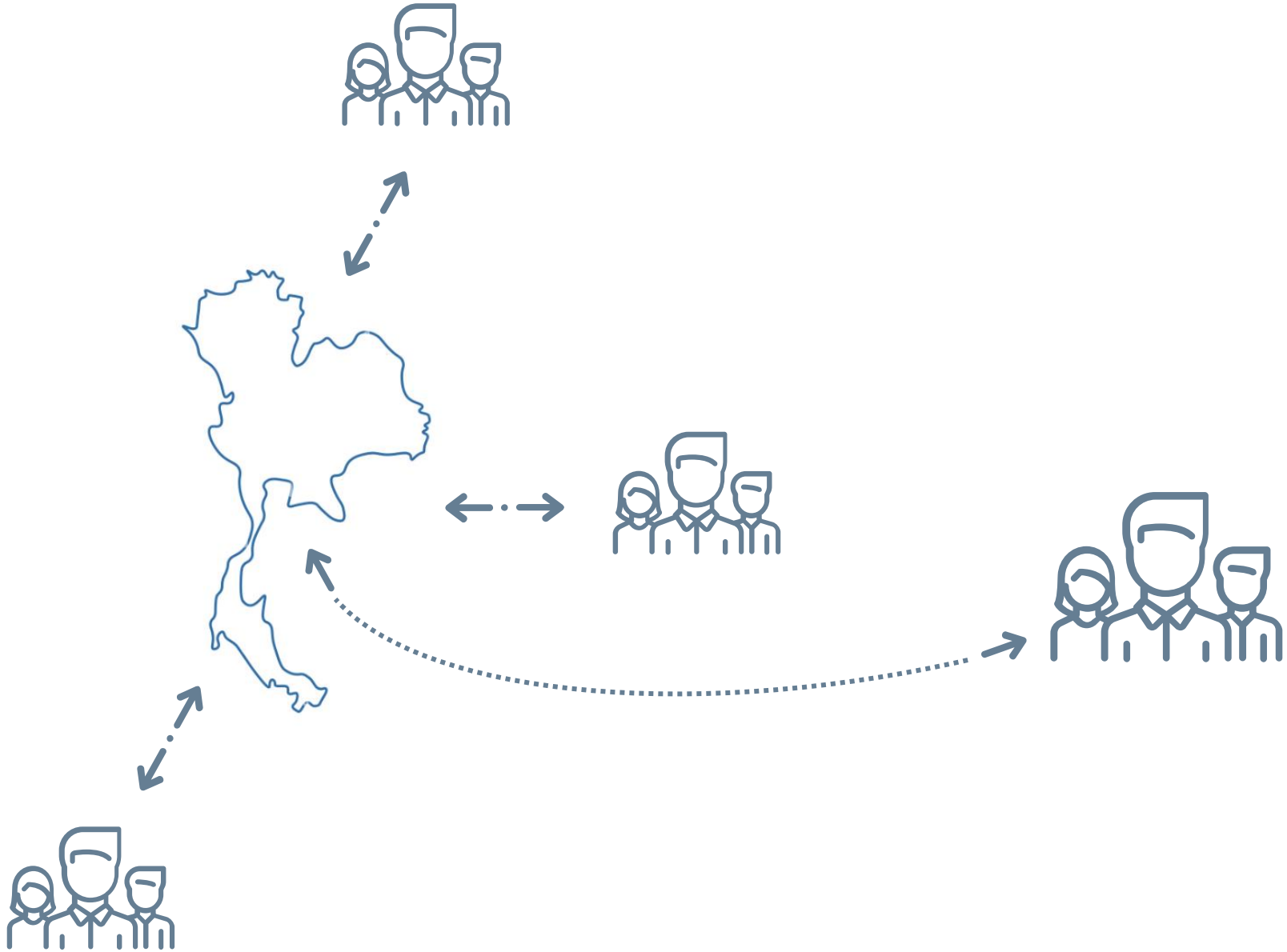
The National Economic and Social Development Plan No.13 (2023)

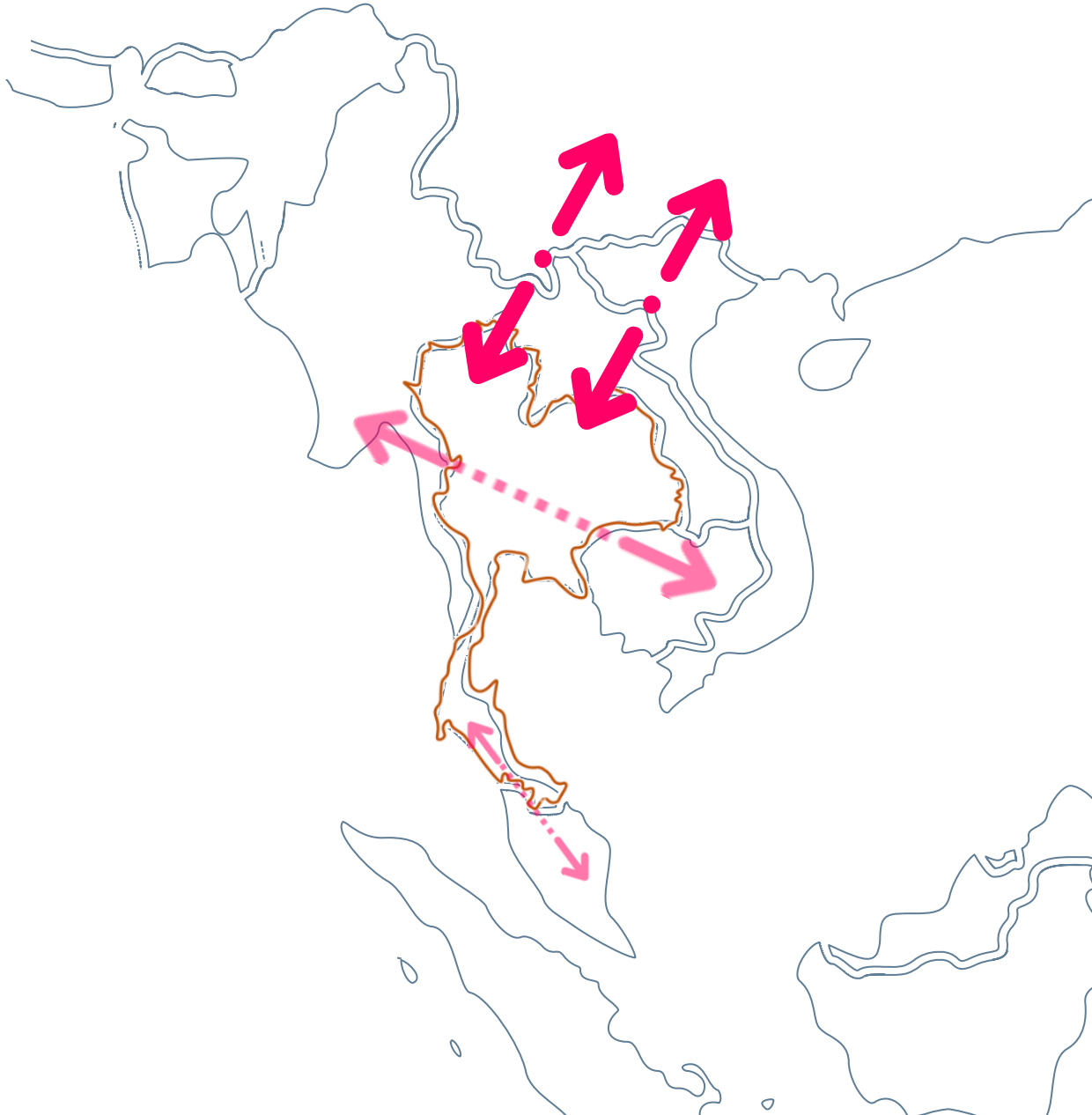
Objective No. 5

Thailand as a gateway for trade, investment, and key logistics strategy of the region



Strategy No. 2, Developing infrastructure and supporting factors as a gateway for trade, investment, and important economic base of the region."

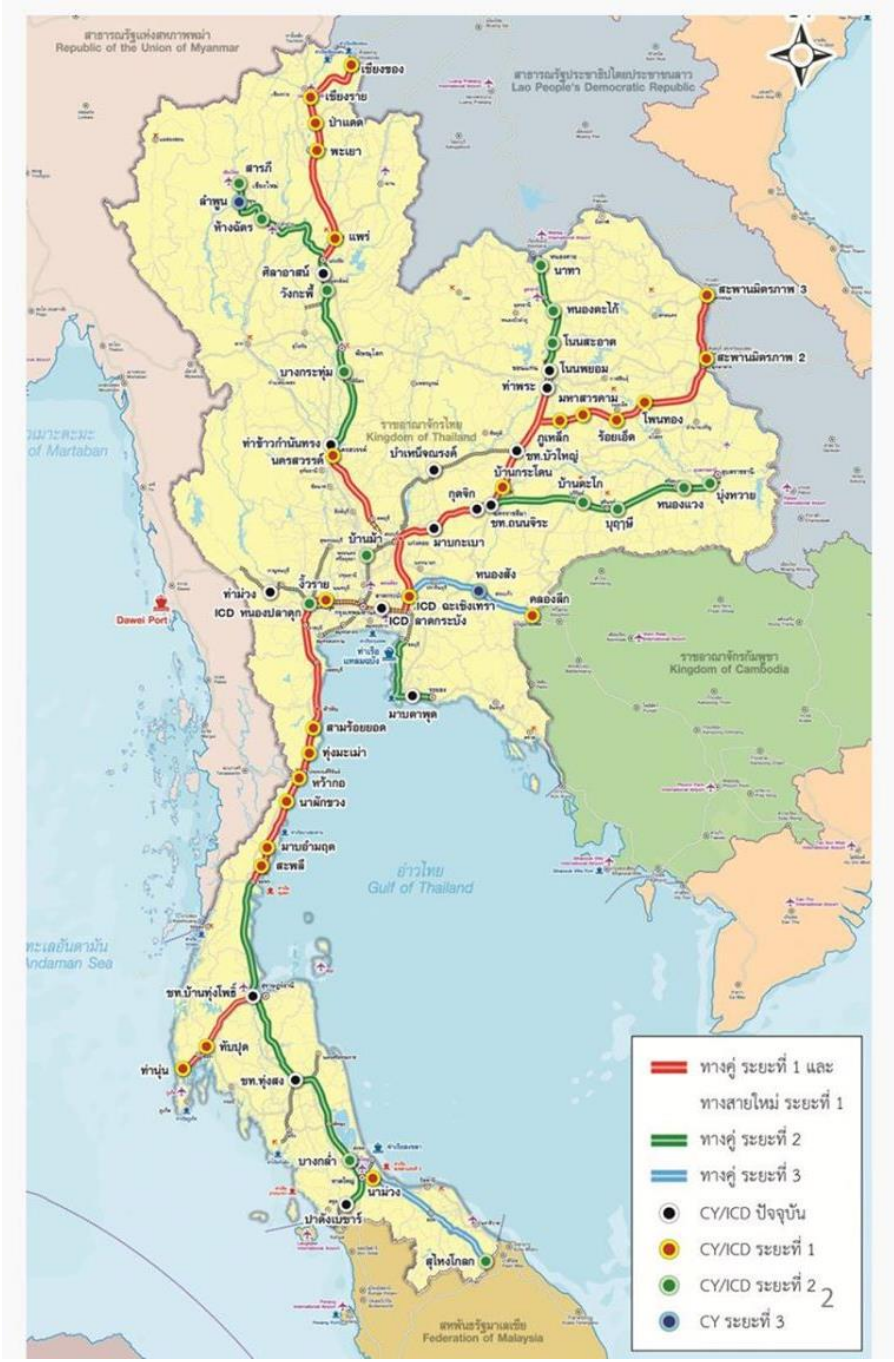
- Continuous development of the rail transport system, making it the primary transportation network of the country.
- Connecting with regional and sub-regional logistics networks to reduce logistics costs.
- Enabling convenient access to China and countries in the Mekong sub-region by supporting connectivity between Thailand, Laos, and China in Nong Khai and Chiang Rai provinces, as well as supporting connectivity with the domestic economy in the Northern, Northeastern, Central, Eastern, and Southern regions."



Strategy No. 2, Developing infrastructure and supporting factors as a gateway for trade, investment, and important economic base of the region."

- Emphasis on integrating the investment plans into the main freight transportation corridors by supporting investment in logistics service centers, such as container yards, truck rest areas, dry ports, and cargo transfer centers.

- Setting appropriate service rates to incentivize the transformation of transportation systems towards rail-based systems.

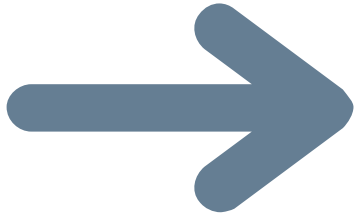


Source: The Department of Rail Transport (2023)

Thailand's 20-Year Strategy for Transport Infrastructure Development (2018 – 2037)

Increase the proportion of rail freight transportation volume

1.4 %
(in 2015)

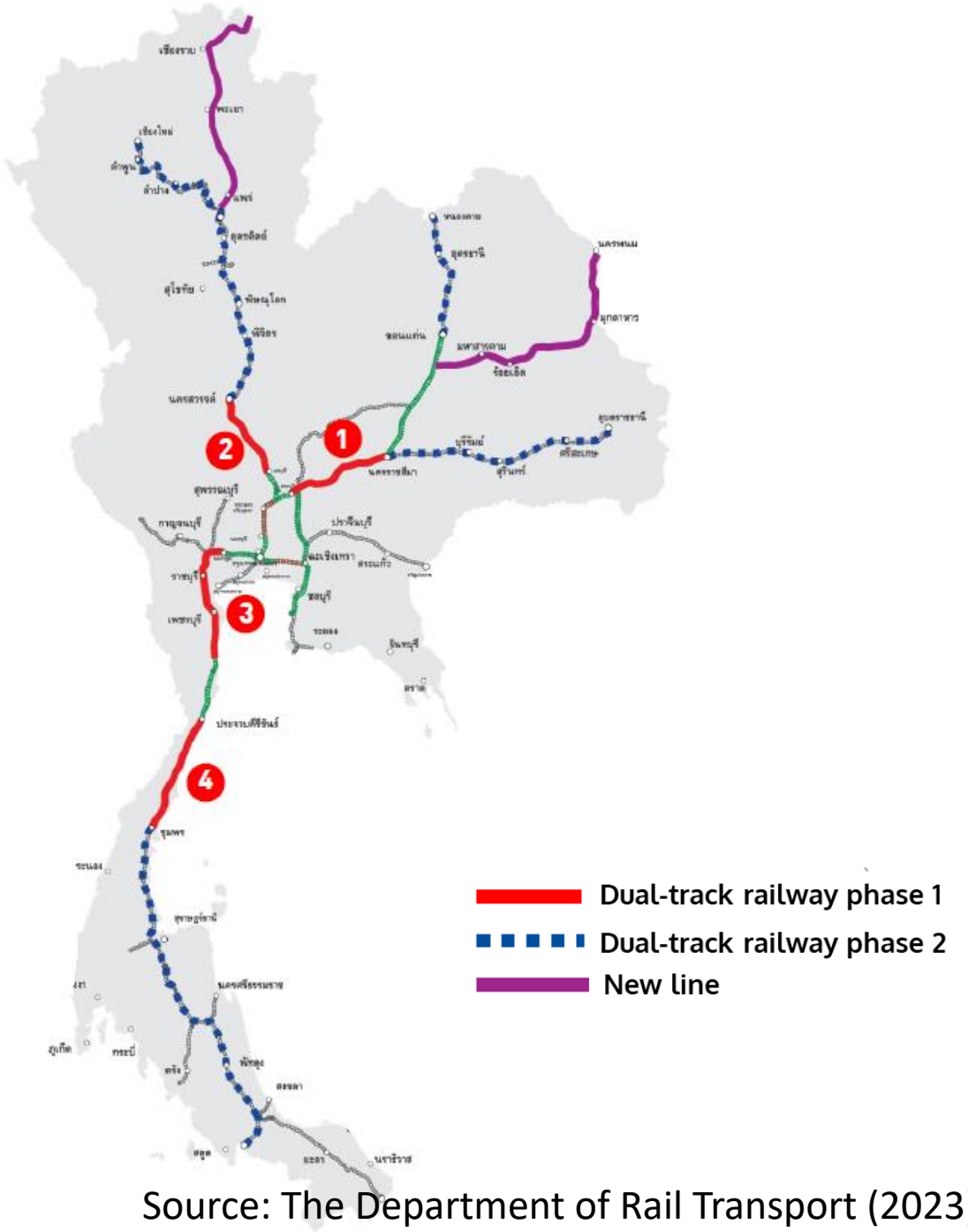


10 %
(in 2036)

Develop intercity rail systems for the transportation of both goods and passengers

Dual-track railway phase 1: Under construction

Dual-track railway phase 2: Pending project approval



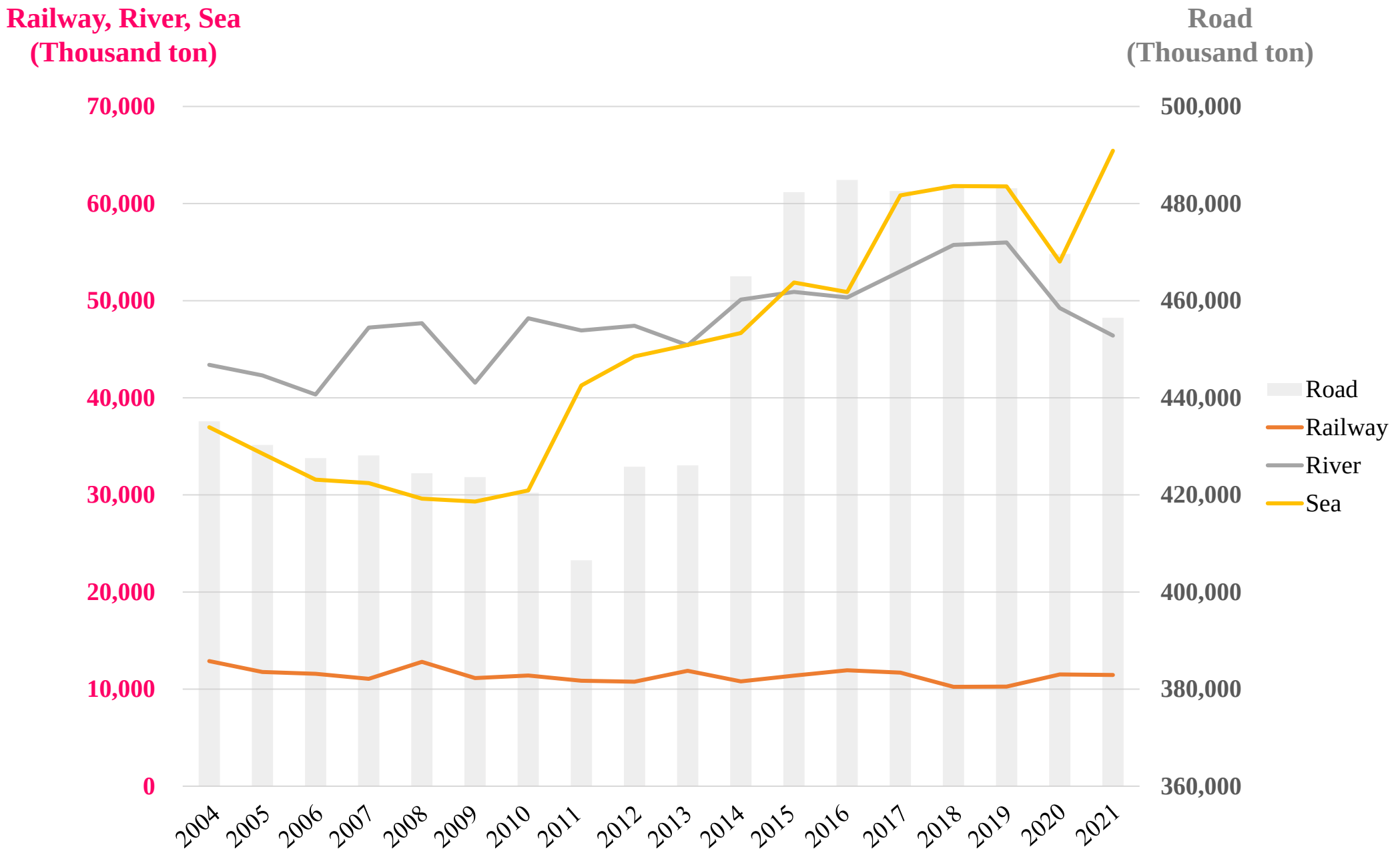
Source: The Department of Rail Transport (2023)

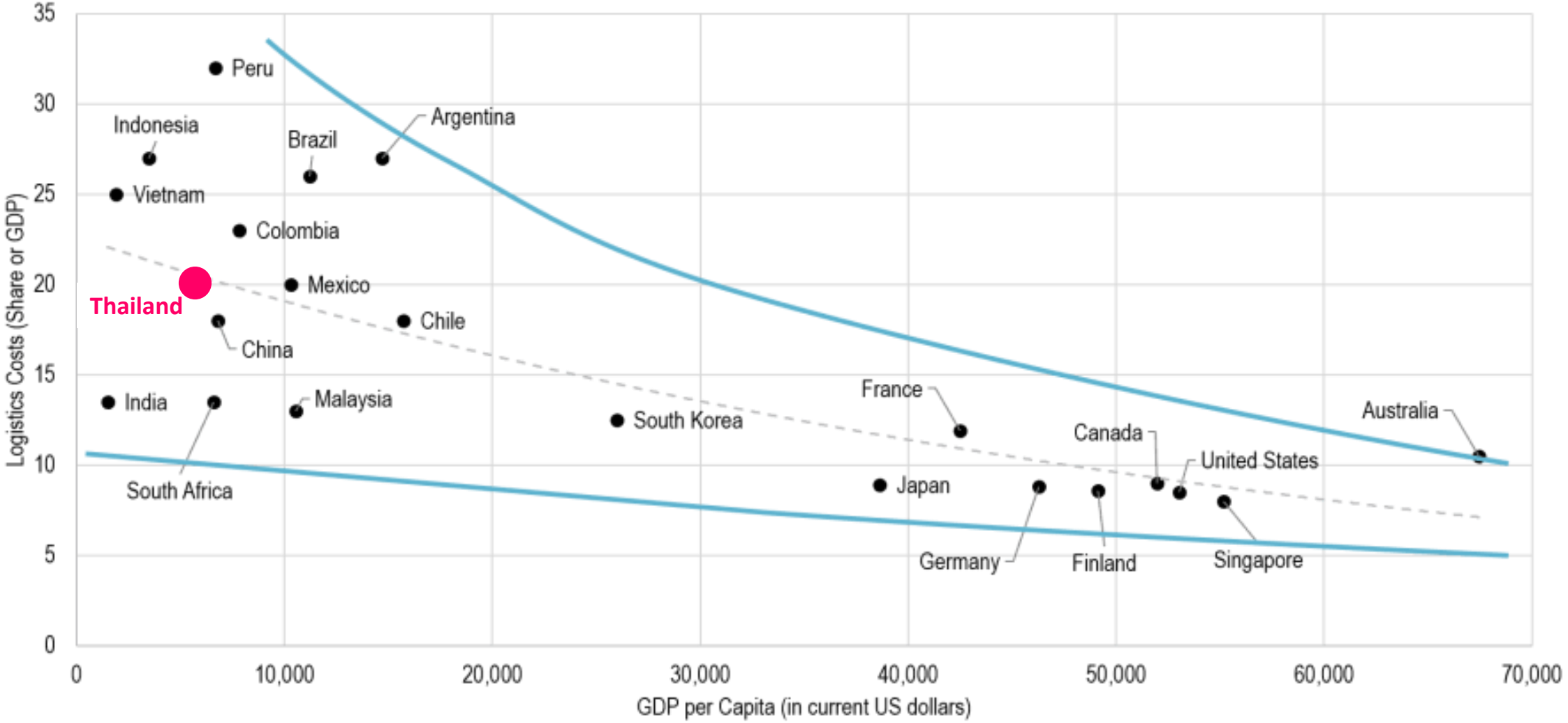
Develop an energy-efficient and environmentally friendly transportation system

Source:
1. https://www.dailynews.co.th/news/2015618/
2. https://techsauce.co/news/mine-locomotive-ev-on-train-by-ea-and-crrc-dalian

Challenges

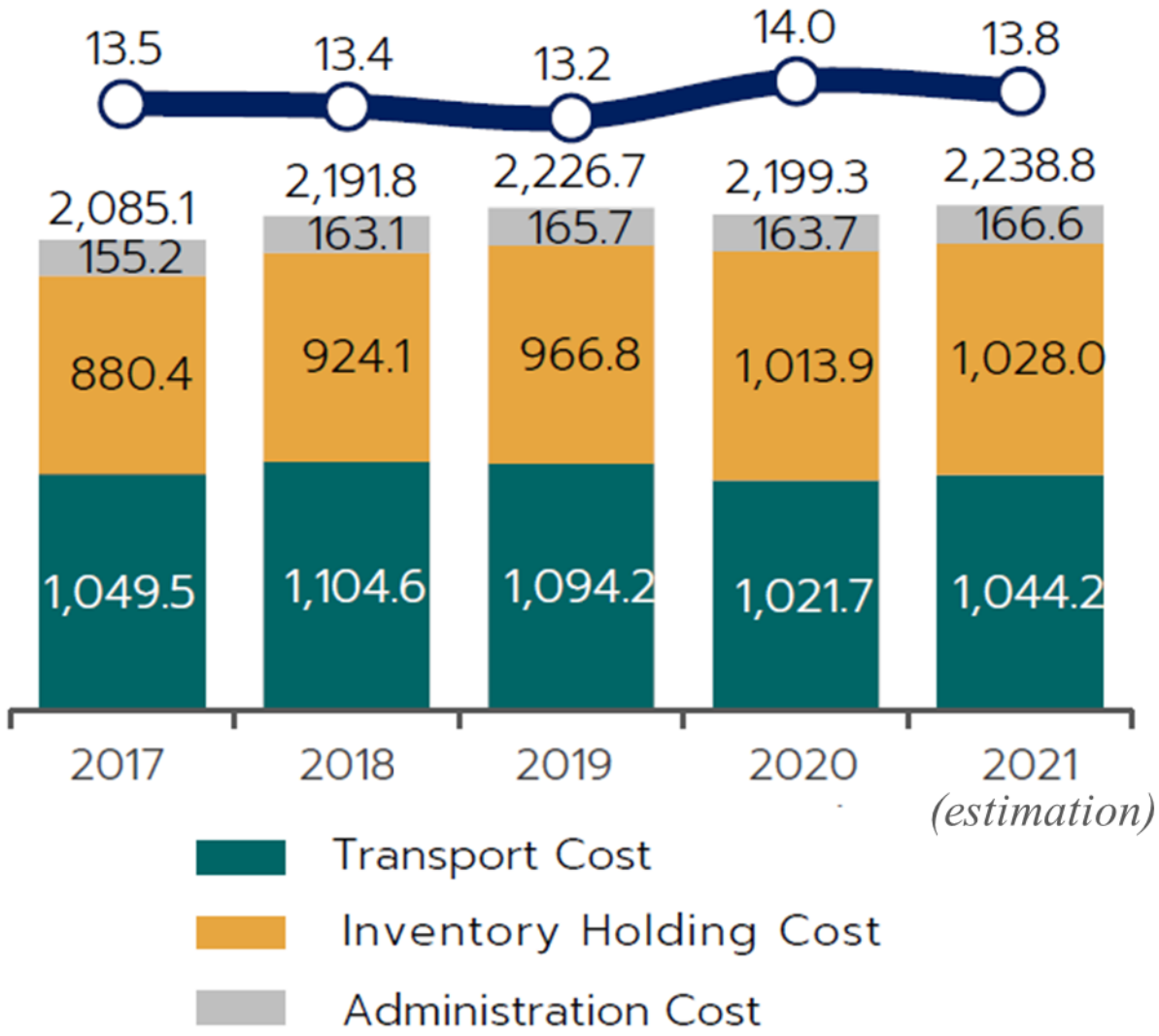
Domestic Freight Transport by Mode 2004 - 2021





Source: World Bank for GDP data via Jean-Paul Rodrigue (2020)

Thailand's Logistics Cost

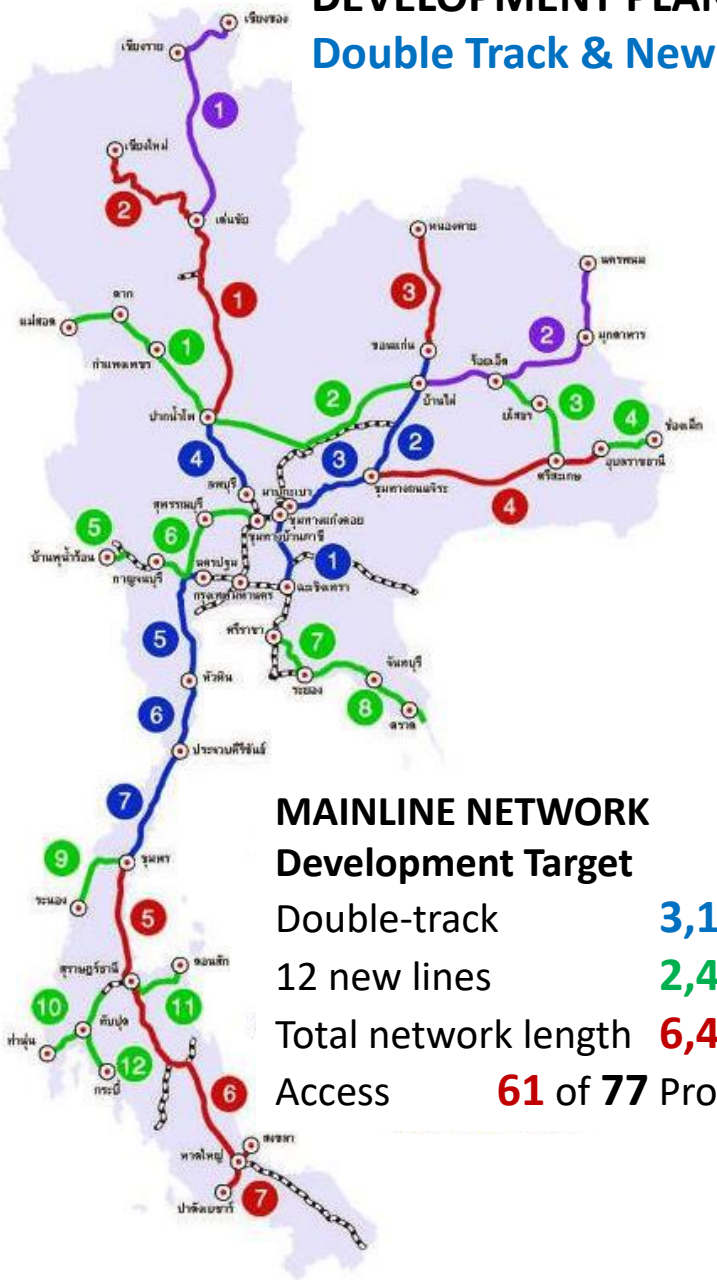


(Unit: Billion Baht)

Source: via Source: Logistics Development Strategy Division, NESDC

Government Initiatives and Future Plans

DEVELOPMENT PLAN:
Double Track & New Lines



MAINLINE NETWORK
Development Target

Double-track	**3,157** km
12 new lines	**2,419** km
Total network length	**6,463** km
Access	**61** of **77** Provinces

Double track

Phase 01 (2017-2021)

1. Chachoengsao Junction - Khlong Sip Kao Kao - Kaeng Khoi ★
2. ChiraJunction – Khon Kaen ★
6. Hua Hin - Prachuap Khiri Khan ★
3. Mab Kabao - ChiraJunction — 2023
4. Lopburi - Pak Nam Pho — 2023
5. Nakhon Pathom - Hua Hin — 2023
7. Prachuap Khiri Khan – Chumphon — 2024

993 km

Phase 02 (2022-2026)

1. Paknampho – Denchai
2. Denchai - Chiang Mai
3. KhonKaen - Nong Khai
4. Chira - Ubon Ratchathani
5. Chumphon – Surat Thani
6. Surat Thani -Hat Yai – Songkhla
7. Hat Yai - Padang Besar

1,479 km

Phase 03 (2027-2036)

1. Khlong Sip KaoJunction – Aranyaprathet
2. Hat YaiJunction – Sungai Kolok

391 km

New lines

Phase 01 (2017-2021)

1. Denchai Chiang Rai - Chiang Khong — 2028
2. Ban Phai - Mukdahan - Nakhon Phanom ●

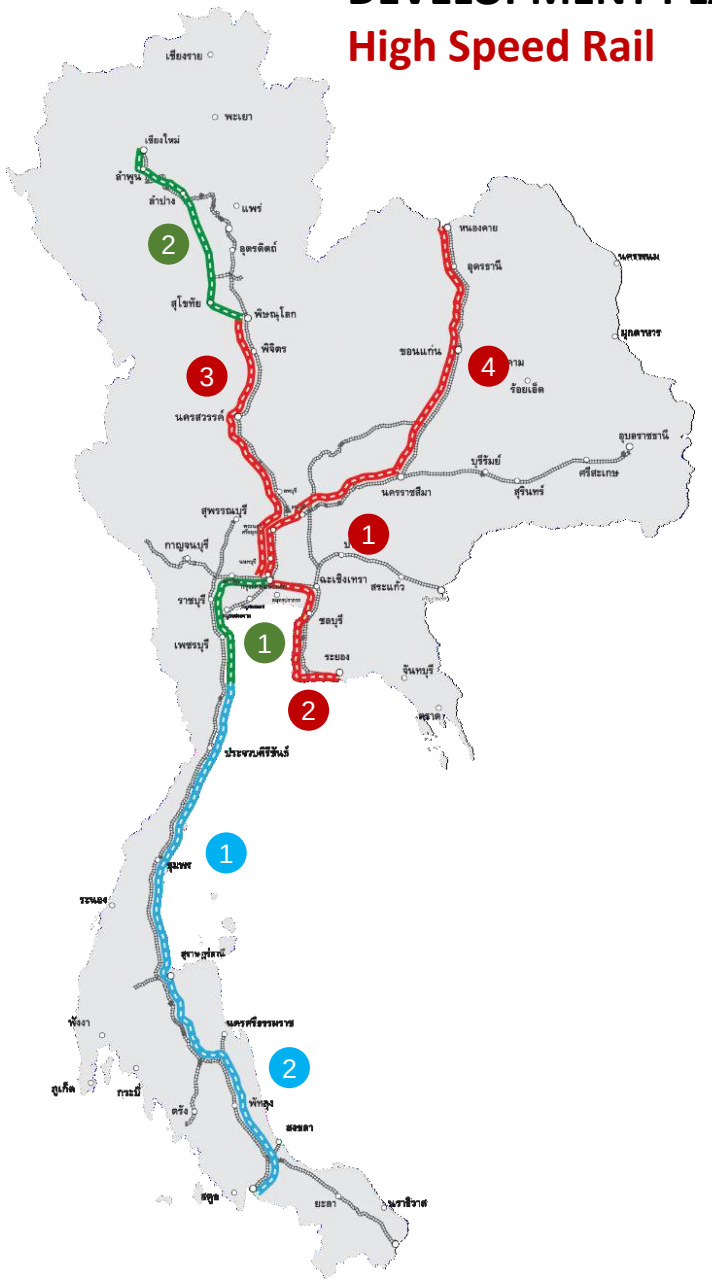
677 km

Phase XX

1. KanchanaburiKanchanaburi-Suphan Buri Ban Phachi Junction
2. Si Racha - Rayong
3. Map Ta Phut - Rayong - Chanthaburi - Trat
4. Chumphon - Ranong
5. Surat Thani - Phang Nga - Tha Nun
6. Surat Thani - Don Sak
7. Thap Put - Krabi
8. Mukdahan - Amnat Charoen - Ubon Ratchathani

★ Completed
● Contract signed

DEVELOPMENT PLAN:
High Speed Rail



URGENT PLAN (2017-2021)

4 Routes 1,249 KM

1. Bangkok–Nakhon Ratchasima ▲
2. Bangkok–Rayong
   - Phase 1 The High-Speed Rail Linked 3 Airport Project (Don Mueang International Airport, Suvarnabhumi Airport, and U-TapaoAirport)
   - Phase 2 U-Tapao-Rayong
3. Bangkok –Phitsanulok
4. Nakhon Ratchasima -Nong Khai

INTERMEDIATE PLAN (2022-2026)

2 Routes 499 KM

1. Bangkok–Hua Hin
2. Phitsanulok–Chiang Mai

LONG-TERM PLAN (2027-2036)

2 Routes759 KM

1. Hua Hin–Suratthani
2. Suratthani–Padang Besar

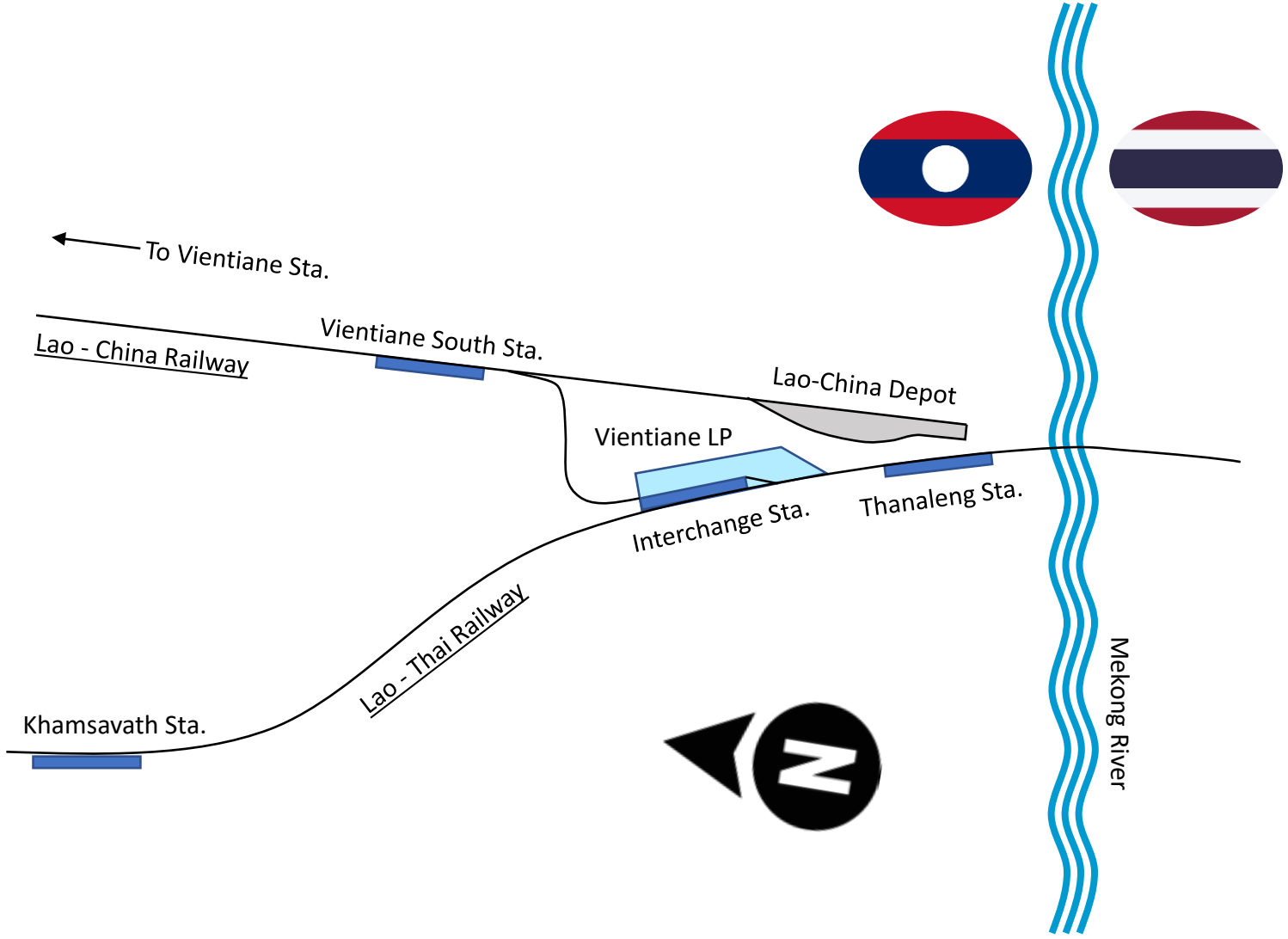
▲ In progress

KRUNGTHEP APHIWAT

New Bangkok Central Station

- MRT Blue Line (underground)
- Long Distance Train
- Red Line Commuter Train (2nd floor)
- Future HSR Platform (3rd floor)

Laos – Thai Railway Connection



Nongkhai – Thanaleng – Khamsavath Sta. on the meter-gauge single track. The 7.5-km railway extension from Thanaleng to Khamsavath Station is completed.

Lao - China Railway runs on the standard-gauge track with direct connection to Vientiane (City) Station

Statistics (3 Dec 2021 – 30 June 2022)

Passenger:	922 trains	522,400 passengers
Freight:	1,355 trains	798,044 tons

Located at Vientiane Logistic Park, the interchange station was opened at on 1st July 2022.

The roadway bridge opened in 1991 with the railway track installed in the middle. A new railway exclusive bridge is planned to be constructed 30 meters apart with both meter and standard gauge tracks

Mass Rapid Transit Master Plan in Bangkok Metropolitan Region

Light Green	55 Stations	66.5 km	★
Dark Green	20 Stations	22.5 km	★
Blue	42 Stations	55.0 km	★
Purple	32 Stations	42.8 km	☾
Orange	30 Stations	35.4 km	
Pink	30 Stations	36.0 km	
Yellow	23 Stations	30.4 km	
Brown	23 Stations	21.0 km	
Gold	4 Stations	2.7 km	★
Grey	39 Stations	26.0 km	
Light Blue	19 Stations	30.0 km	
Light Red	55 Stations	58.5 km	☾
Dark Red	20 Stations	80.8 km	☾
Airport Link	14 Stations	49.5 km	★
Total		**504 km**	

★ Complete ☾ Partially complete

Opportunities for Growth and Development

Key 2022 Transport Action Plan Projects

- Train tracking and freight management system
- Eastern HSR connecting 3 airports
- Bangkok urban transit development
  - Orange (East), Yellow, Pink and Purple (South) Lines
- Rail Technology Research and Development Agency
- Nakhon Phanom Truck Center
- Chiang Khong Intermodal Facility
- Hybrid or battery locomotive development (Study)
- Transit-oriented development for HSR stations (Study)

Future Plan

- Provincial Mass Transit
  - Chiang Mai, Phitsanulok, Nakhon Ratchasima, Phuket and Hat Yai
- Dry Port Development
- Container Yard Development Plan
- Surat Thani Truck Center

Container Yard Master Plan

In 2020 The average world's logistics cost is 10.1% of GDP, While Thailand's is at 14.1%.

Container yard must be developed along the mainline network to facilitate seamless freight transport and to reduce logistics costs.

CYs will be developed as double track and new lines are constructed.

Chiang Khong Intermodal Facility

Wiang, Chiang Khong, Chiang Rai

Directly Accessed from the 4th Mitraphap Bridge (Chiang Khong – Huai Sai)

Accommodates international freight on R3A connecting Thailand – PDR Laos - China

The facility is designed to accommodate collection and distribution activities and comprises:

- Import Area
- Export Area
- Common Area for Administration

State Enterprise Policy Office (SEPO) approved the **PPP Net Cost** investment form.

- The government invests in land and infrastructure.
- The private party invests in equipment and M&E.
- Suggested contract period = 15 years.

Dry Port Development

In 2018, Office of Traffic and Transport Policy and Planning (OTP) created Dry Port Development Master Plan and set Thailand role as the logistics center of ASEAN. The master plan identified and prioritized four dry port locations:

- Don Sai and Nong Teen Nok, Ban Pho, Chachoengsao (expected 2024)
- Muang Wan, Nam Phong, Khon Kaen (expected 2025)
- Kut Chik, Sung Noen, Nakhon Ratchasima (expected 2025)
- Khao Thong, Phayuha Khiri, Nakhon Sawan (Expected 2027)

Port Authority of Thailand has developed the action plan for the dry port and will put the project into PPP investment program.

Eastern High Speed Rail

3-Airport Connection

Standard Gauge 1.435 m

Express Train 1 hr

Regular Train 1 hr 40 min

TOD

Makkasan 150 Rai

Sri Racha 25 Rai

Extension to Trat +160 km

PPP Net Cost Concession

Rail Infrasructure

- Build-transfer-operate (BOT)

Transit-oriented Development

- Build-operate-transfer (BTO)

Commercial Development

- Build-transfer-operate (BOT)