

# Bangchak's Low Carbon Products Y2024



Bangchak was certified to register the Carbon Label Products according to the PCR standard (Product Category Rule: PCR) by the Greenhouse Gas Management Organization (TGO) under collaboration with Thailand National Metal and Materials Technology Center (MTEC) and the National Science and Technology Development Agency (NSTDA)



Gasoline Base



High speed diesel



Fuel Oil

		Average Emission of Thailand		Bangchak's Emission	
Products	2024 sale volume <sup>(1)</sup> (Million liters)	Emission factors <sup>(3)</sup> (kgCO <sub>2</sub> /L)	GHG emissions (tCO <sub>2</sub> e)	Emission factors <sup>(2)</sup> (kgCO <sub>2</sub> /kg)	GHG emissions (tCO <sub>2</sub> e)
Gasohol	3,718	0.4124	1,149,977	0.344	959,244
Diesel	7,244	0.3522	2,143,123	0.237	1,442,136
Fuel oil	757	0.3743	274,845	0.276	202,664
Total			3,567,945	Total	2,604,044

Bangchak improves refining process management continuously both operational stability and operational efficiency. This helped to **reduce GHG emission 963,901 tCO<sub>2</sub>e per year** compared to Average Emission of Thailand with same volumes in 2024

(1) 2024 sale volumes from Bangchak's Annual Report 2024, PDF page 121, <https://investor.bangchak.co.th/en/document/viewer/stream/138264/form-56-1-one-report-2024>

(2) Emission factors for Bangchak's product from carbon label products according to the PCR standard (Product Category Rule: PCR) by the Greenhouse Gas Management Organization (TGO)

(3) Emission factors for normal oil product from IPCC 2006, Vol.2, table 3.2.1, 3.2.2, and the Department of Alternative Energy Development and Efficiency (DEDE)

# Avoided emission at 3<sup>rd</sup> party (Scope 3 emission) Y2024



- Bangchak was the first oil company in Thailand which produced and sold biofuel products at Bangchak gas service stations to customers.
- All oil products of Bangchak are biofuels which helps avoid GHG emissions compared to gasoline and diesel.
- Gasohol oil products are the mixture of bioethanol and gasoline.
- Biodiesel oil products are the mixture of biodiesel (B100) from palm oil and diesel.
- Various gasohol and biodiesel oil products are available for customers at Bangchak service stations.

## Total GHG emission from the used of sold products (Scope 3 emission)

Normal Oil Products		Bangchak’s Oil Products	
Group of Product	GHG emissions <sup>[4]</sup> (tCO <sub>2</sub> e)	Group of Product	GHG emissions <sup>[3]</sup> (tCO <sub>2</sub> e)
Diesel	8,472,102	Biodiesel products	7,878,972
Gasoline	4,041,917	Gasohol products	3,531,312
Total	12,514,019	Total	11,410,284

Bangchak’s gasohol and biodiesel oil products helped avoid emissions for third-parties by 1,103,735 tCO<sub>2</sub>e compared to normal oil products with the same volumes in 2024

[3] 2024 scope 3 GHG emissions for the use of sold products through Bangchak service stations was verified as one of scope 3 emissions sources by a third party.

[4] Emission factors for normal oil product from IPCC 2006, Vol.2, table 3.2.1, 3.2.2, and the Department of Alternative Energy Development and Efficiency (DEDE) were used for the calculation.