

BRIEFING

APRIL 2019

Hainan's Clean Energy Vehicle Development Plan (2019-2030)

On March 6, 2019, China's southernmost island province of Hainan announced a plan to progressively shift to all clean energy vehicles, including in all its 19 cities and towns, by 2030. Leveraging the clean grid in the region¹, the "Development Plan of Clean Energy Vehicles in Hainan Province,"² promotes clean energy vehicles as a core strategy toward achieving world-class air quality in Hainan. As of today, Hainan has deployed 37 thousand electric vehicles, thanks to the decade-long new energy vehicle demonstration pilot program³ and associated incentives introduced in major cities in the region. The Plan is a dramatic step forward, compared with the past policies. However, it does not specify responsible authorities for implementation or enforcement measures.

1 Currently, electricity generation is 56% from coal, 11% by natural gas, and 23% from renewables. By 2020, 80% of electricity generation will be from non-coal, clean sources.

2 Hainan Provincial People's Government, "Development plan of clean energy vehicles in Hainan Province" (Qiongfu No. 11, March 4, 2019). Retrieved from <http://www.hainan.gov.cn/hainan/szfwj/201903/51856f7e3b3d4fa6b4efc4a0ffdf98e8.shtml>

3 For more information about the new energy vehicle demonstration pilot program, see Gong, Huiming, Michael Q. Wang, and Hewu Wang. "New energy vehicles in China: policies, demonstration, and progress." *Mitigation and Adaptation Strategies for Global Change* 18.2 (2013): 207-228. <https://link.springer.com/article/10.1007/s11027-012-9358-6>

Staff contact: Hongyang Cui, Hui He

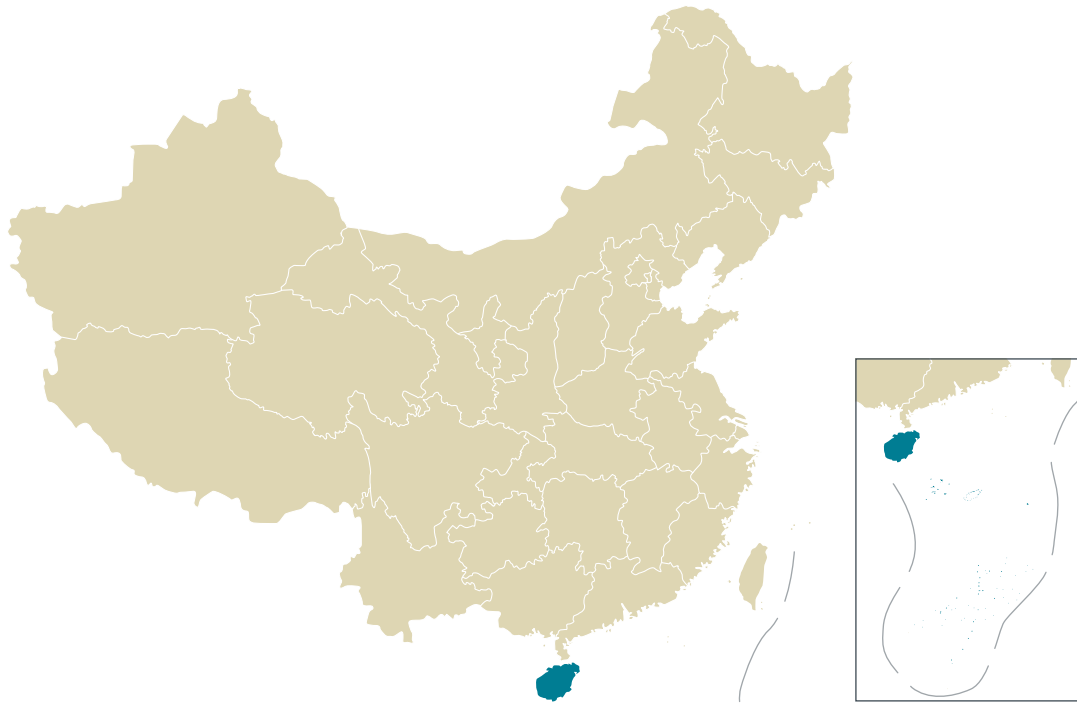


Figure 1 Map of China and location of Hainan province (Hainan highlighted in blue)

THE TARGETS

In the Plan, clean energy vehicles refer to both electric vehicles and clean alternative fuel vehicles.⁴ By the end of 2018, Hainan had a total of 1.27 million vehicles registered, of which 37,100 (2.9%) are clean energy vehicles, including 22,800 (1.8%) electric vehicles and 14,300 (1.1%) clean alternative fuel vehicles. The Plan sets clean energy vehicle targets for new sales or all vehicles in the market by vehicle sector in three phases—2020, 2025 and 2030 (Table 1). The goals initially target public fleets, such as government vehicles and buses, and will apply to private passenger and commercial fleets in proceeding years. In principle, electric technologies will apply in most urban fleet sectors, while other clean energy technologies will remain in a few commercial fleets such as inter-city and tour coaches that are technologically less ready for electrification.

⁴ Specifically, electric vehicles include battery electric vehicles (BEVs), plug-in hybrid electric vehicles (PHEVs, extended-range electric vehicles included), and fuel cell electric vehicles (FCVs). Clean alternative fuel vehicles are primarily compressed natural gas (CNG) vehicles and liquefied natural gas (LNG) vehicles.

Table 1 Hainan's near-to-long term targets on clean energy vehicle deployment by sector

Sector	Subsector	Targets							
		2019		2020		2025		2030	
		New	Stock	New	Stock	New	Stock	New	Stock
Government		100%		100%		100%	100%	100%	100%
Bus		100%		100%	80%		100%		100%
Taxi	Conventional	100%			100%		100%		100%
	Ride-hailing	80%		100%		100%	90%		100%
Urban freight	Postal, logistics	100%		100%		100%	60%	100%	100%
Sanitation		50%		50%		50%	60%		100%
Rental	Car-sharing	100%		100%		100%	80%	100%	100%
	Conventional	20%		40%		100%	60%		100%
Tour coach				20%		100%	50%		100%
Inter-city coach				20%		100%	45%		100%
Private		10%		40%		80%		100%	

Electric Vehicles
 Clean Energy Vehicles

Notes: New refers to new vehicle sales. Stock refers to all vehicles in the corresponding sector.

The plan prioritizes the transition to clean energy vehicles by different regions of the province based on social economic and transportation development levels. As shown in Figure 2, clean energy vehicle deployment will initially be prioritized in Zone 1, which includes the province's capital city of Haikou in addition to four other cities. Next, clean energy vehicles will be encouraged as widely as feasible in Zone 2, which includes five cities and towns along the coast, and lastly encouraged in the more inland Zone 3.

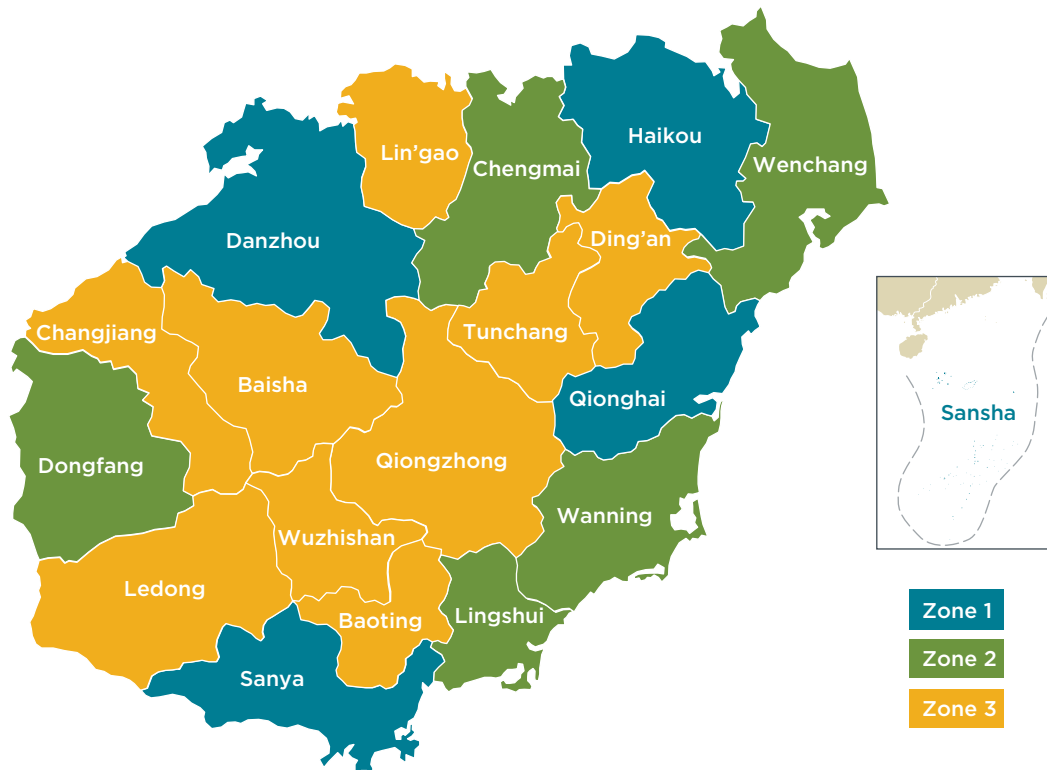


Figure 2 Clean Vehicle Development Zones in Hainan

Beyond the vehicle targets, the Plan also sets development goals for charging infrastructure—the overall charger-to-EV ratio is required to meet 3-to-1 by 2020, and 2-to-1 by 2025, compared with today’s level of 4.5-to-1. That ratio for public chargers needs to be 7-to-1, and chargers need to be available for every 50-km on the provincial freeways. The charging network shall be able to cover, on average, every 1, 2 or 3 kilometers in distance in the above three clean energy vehicle development zones, respectively.

SUPPORTIVE POLICIES UNDER CONSIDERATION

Several local-level policies were implemented in major cities of Hainan to support the deployment of electric vehicles in the past decade. These include vehicle purchase subsidies, exemption from vehicle and vessel tax, exemption from vehicle purchase tax, differentiated utility rates, charging fee reductions, vehicle registration privilege, as well as building and parking codes. Besides these, Hainan is also considering a new set of policies and actions to remove barriers, financial and institutional, from implementation (Table 2). The policies support the adoption of both electric and natural gas vehicles.

Table 2 New policies proposed in the Plan to support clean energy vehicle development targets in Hainan.

Vehicle type	Category	New policies proposed
Electric vehicles	Production policies	Attract clean energy vehicle manufacturers, part suppliers and facilitating service platforms
		Tariff incentive for import clean energy vehicles
	Fiscal incentives	Vehicle operating subsidies
		Vehicle loan reductions
		Vehicle insurance incentives
	Non-fiscal incentives	Road access privilege
		Reserved parking space
		Zero carbon emission zones
		Banning conventional fuel vehicles
		Enhance public outreach
	Charging infrastructure	Charging infrastructure development plan
		Streamlining permitting process
		Public charger availability
		Home charger availability
Hydrogen refueling infrastructure	Hydrogen refueling infrastructure development plan	
	Hydrogen refueling station availability	
Natural gas vehicles	Fiscal incentives	Vehicle purchase subsidies
		Exemption from vehicle purchase tax
	Refueling infrastructure	Natural gas refueling infrastructure development plan
		Streamlining permitting process
		Natural gas refueling station availability

CONCLUSION

With the Plan, Hainan becomes the first province in China to announce official targets for a transition to clean energy vehicles. The Plan is expected to deliver huge environmental benefits and contribute to Hainan's long-term economic development plan to be China's pioneering free trade zone. The next step and real challenge is to turn targets into detailed and effective policies and actions and make sure they are well implemented.