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Cost, safety, infrastructure constraints deter rural petrol stations from EV charging rollout

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KUALA LUMPUR: The lack of electric vehicle (EV) charging stations at petrol stations, particularly in rural and outlying areas, is largely due to infrastructure, cost, space and safety constraints, the Petroleum Dealers Association of Malaysia (PDAM) said.

Its president Datuk Khairul Annuar Abdul Aziz said almost 70 per cent of petrol stations in Malaysia were owned by the brands themselves, with individual operators accounting for the rest.

He said while individual dealers could push for EV charging facilities, their ability to make such decisions was limited by oil companies' broader plans and practical considerations such as infrastructure and cost, particularly at smaller stations.

"The dealer doesn't have much of a say in this. They can push for it, but the oil company has its own nationwide plan."

Khairul Annuar said the installation of EV chargers was also a "chicken and egg" situation, with charging operators reluctant to invest in areas where EV is low.

"EV operators don't want to invest in places where they know there's not much EV use and so it's not economical for them," he said.

He said operators had to consider the type of charging facility, including fast, normal, slow, AC and DC chargers, as well as the demographics and demand in an area.

This, he said, created a cycle in which charging infrastructure was concentrated in densely populated areas, while rural locations remained under-served.

"But what we need is to have infrastructure in places where there aren't enough people having EVs. If the infrastructure is there, people will start to adopt EVs. So, it's a chicken and egg situation," he said.

TOO COSTLY

Khairul Annuar said the cost of installing chargers was another major consideration, particularly for fast-charging facilities.

While AC chargers, including

BROADER PLANNING

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7kW, 11kW and 22kW units, were cheaper, they could take several hours to charge an EV, making them less attractive to motorists seeking faster charging.

"People want fast charging, half an hour, 100 per cent. But unfortunately, fast chargers require substantially higher investment. That one is expensive," he said, estimating the cost at hundreds of thousands of ringgit.

The cost could increase significantly depending on the existing electricity infrastructure at a petrol station.

"Sometimes Tenaga Nasional Berhad's grid is also not suitable. To fix or install fast chargers, it has to be connected at medium voltage, 11kV, 33kV."

"That one alone would cost hundreds of thousands of ringgit, including payments to TNB for designing the infrastructure, wiring works and so on," he said.

Khairul Annuar said location and the physical size of a petrol station also played an important role.

"Petrol dealers want it, but they don't want to invest themselves. And the operators don't want to invest."

"A lot of operators go to the heavily populated areas because that is where they can make their money," he said.

The challenge is particularly acute at smaller stations, where space could already be limited.

Apart from the physical space required for EV charging bays, operators also had to comply with safety requirements governing the distance between charging facilities and existing petrol pumps and underground fuel tanks.

"In other words, it's not that it cannot be done, but it's difficult. Some cannot do it because they are simply too small. Some are difficult," he said.

He said EV charging was also not necessarily an attractive business for petrol station operators.

"Initially, there was profit, but then it was overtaken by home installation of chargers. Then they have to invest more in fast chargers."

Khairul Annuar suggested that greater government involvement might therefore be needed to address the infrastructure gap, particularly in underserved areas where private charging operators might not see sufficient commercial returns.

"The government might need to lead in that sense. The infrastructure needs to come, and the initial EV station charger needs to come first, before more EVs come."

"Then the other businesses can calculate their profit and loss. Otherwise, it will be loss only, no profit," he said.

SAFETY CONCERNS

He said safety considerations were particularly important because petrol stations handled highly flammable fuel.

He said petrol stations also had to take into account petrol vapour released during refuelling.

"Our underground tank and our pump should be okay because they're underground. But there will be vapour."

"When people fill up with petrol, vapour comes out. There is a fear that under certain circumstances, a spark could ignite it. That's why there is a certain distance that the Fire Department will impose. It's a requirement," he said.

Khairul Annuar also raised concerns about the availability of fire-



safety equipment and trained personnel in the event of an EV fire.

Khairul Annuar said the issue was not merely about installing charging equipment, but also ensuring stations had adequate safety measures and trained personnel to respond to emergencies.

Another consideration was the length of time EVs occupied charging bays.

He said petrol stations traditionally operated on a quick-turnaround model, with motorists expected to refuel and leave.

"Traditionally, operations at a petrol station are fast. We want people to come in and out quickly. Otherwise, people will park there, and others won't be able to fill up."

"So, space is an issue. We are afraid they will hog the parking," he said, adding that petrol stations would therefore need complementary businesses or facilities to give EV owners something to do while their

vehicles are being charged.

GOVERNMENT'S ROLE

Khairul Annuar said the government's role could be particularly important in breaking the cycle in which low EV ownership discouraged investment in charging infrastructure, while inadequate charging infrastructure discouraged EV adoption.

"Who is going to go if there are not enough EVs? Who is going to put (chargers) there if there's no infrastructure?"

"The infrastructure needs to come first," he said.

He said this was especially relevant for rural and outlying petrol stations, where physical limitations, electricity supply, safety requirements and low EV utilisation could make private investment difficult.

"So, it's not that they don't want to. It's just difficult," he added.

