

Fuelling Asia's drivers

Subsidies and weak policy mean Asia's rising economies will dominate demand growth for transport fuels

THE Asia-Pacific region will see the strongest growth in energy demand from transportation compared to any other part of the world over the next decades as its economies continue to boom and car-ownership numbers soar (see Figure 1).

From 1990 to 2010, energy demand from Asia-Pacific's transport sector rose from 1.87 billion to 4.42 billion barrels of oil equivalent (boe), data from ExxonMobil show. And this number is forecast to double, with almost 60% of the expansion driven by light and heavy-duty vehicles, hitting 9 billion boe by 2040.

Gasoline and diesel will fuel most of these vehicles, a trend that is set to continue as oil at the pump remains relatively cheap in Asia. Huge government subsidies, costing billions of dollars per year, discourage fuel efficiency in many developing nations, as consumers are protected from lofty international crude prices.

Low cost

Fuel in Indonesia costs about \$0.46 per litre, making it one of the world's cheapest places to drive. The payoff for these subsidised prices is a government fuel bill of around \$14 billion per year. This is a regional issue. India, China, Malaysia, Indonesia, Taiwan, and Vietnam combined spent about \$80 billion to control pricing in 2011.

These subsidies may be better spent on schemes to boost the take up of alternative fuels, such as electricity and biofuels, or to develop more efficient mass transport systems. But fuel subsidies win votes. Attempts to cut back have been greeted with violent protests in countries across the region.

This unsustainable financial burden is shouldered by many Asian governments, giving them good reasons to speed up the pace of market deregulation.

Yet price reform alone will not curtail the expansion in demand. Millions of young Asians are set to enter the workforce, earning bigger disposable incomes, and putting the dream of owning that first car within reach.

Much of the growth in car ownership, as well as oil demand, stems from China and India. China is projected to have over 300 million cars by



2035, up from 100 million today. India will also see explosive growth, going from 14 million to an estimated 160 million cars over the same period.

China is promoting alternative energy to help curb expanding oil demand, and has introduced a range of mandatory fuel-economy targets. If it pushed ahead with even tougher efficiency measures across its transportation sector, believes the International Energy Agency, China could save almost 1.8 million barrels a day (b/d) of oil by 2035 compared

Fuelling demand: The number of cars in Asia is set for a steep rise

with business-as-usual forecasts (see Figure 2).

India, another transport market forecast to rise quickly, could achieve more modest savings (about 600,000 b/d) if it pushed a similar efficiency agenda. But it has yet to implement any solid policies – or to stick with the ones it has tried. Electric vehicles (EVs) and hybrids have been mooted as the answer to the country's growing oil dependency, forecast to hit 7.5 million barrels per day (b/d) by 2035, up from 3.4 million b/d in 2011. But

Future of transport

only a few thousand have been sold, largely because supporting infrastructure (to keep the batteries charged) is lacking and the government has shown only sporadic interest. A campaign to subsidise EVs started in November 2010, only to end four months later when funds dried up. Another subsidy expired last year. While the higher cost of EVs is one deterrent, blackouts are common in India, leaving customers with little confidence in electricity supplies to top up their battery.

As part of its latest electric mission plan, which promises a \$4 billion stimulus programme, New Delhi is targeting the production of 1 million EVs and 5 million electric scooters by 2020. So far, there are no financial incentives or any plans to develop power-charging infrastructure.

The same is true in Indonesia, Southeast Asia's biggest oil consumer at around 1.4 million b/d, where hybrids are rare. High prices and a lack of incentives leave little room for penetration in Southeast Asia's fastest-growing car market, where sales are forecast to double to around 2 million cars per year by the end of the decade. Jakarta talks of pushing the expansion of EVs, but there is no obvious policy in sight.

Japanese trends

Electric and hybrid cars have started to catch on in Japan, where hybrids made up roughly 20% of the 3 million new cars sold last year. More EVs will be seen in China and South Korea, but they will remain a novelty in the rest of Asia.

Elsewhere the use of liquefied natural gas (LNG) in transport will balloon. By 2040, natural gas as a transport fuel will account for 8 billion cubic feet per day (cf/d) in Asia Pacific, or 50% of global demand, up from virtually nothing in 2000, according to ExxonMobil. The shift towards LNG, particularly for trucks and buses, is driven by its competitive pricing and lower carbon emissions.

Hee Jip Kim, managing director of Accenture's South Korean energy business, tips the next generation of South Koreans to be driving CNG or even LNG-powered cars.

Indeed, gas-powered cars may see faster market pick up than electric cars, which were previously considered the most viable alternative to oil. With greater LNG imports expected in future at stable or lower prices, gas will be favoured for trucking, shipping, and even cars, says Kim. LNG offers savings of up to 60% against premium

Figure 1: increase in number of passenger cars 2009-2035

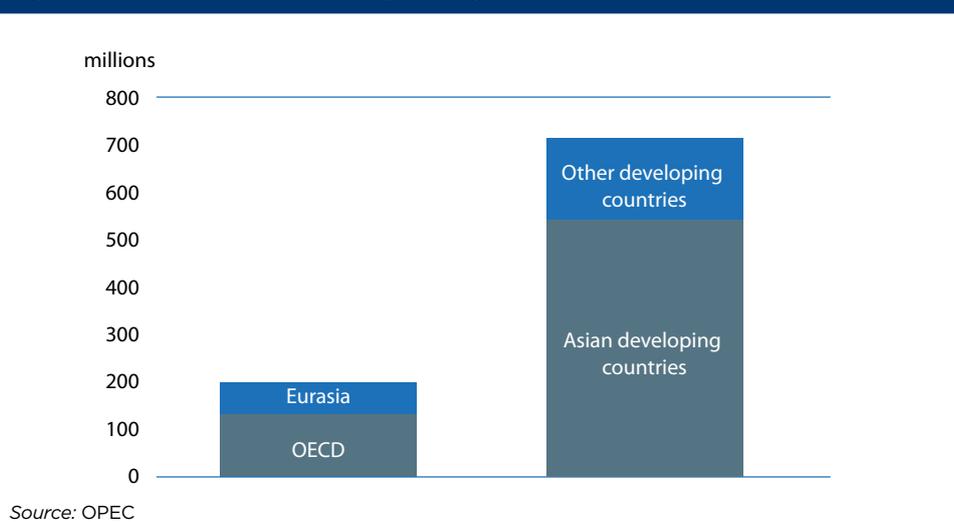
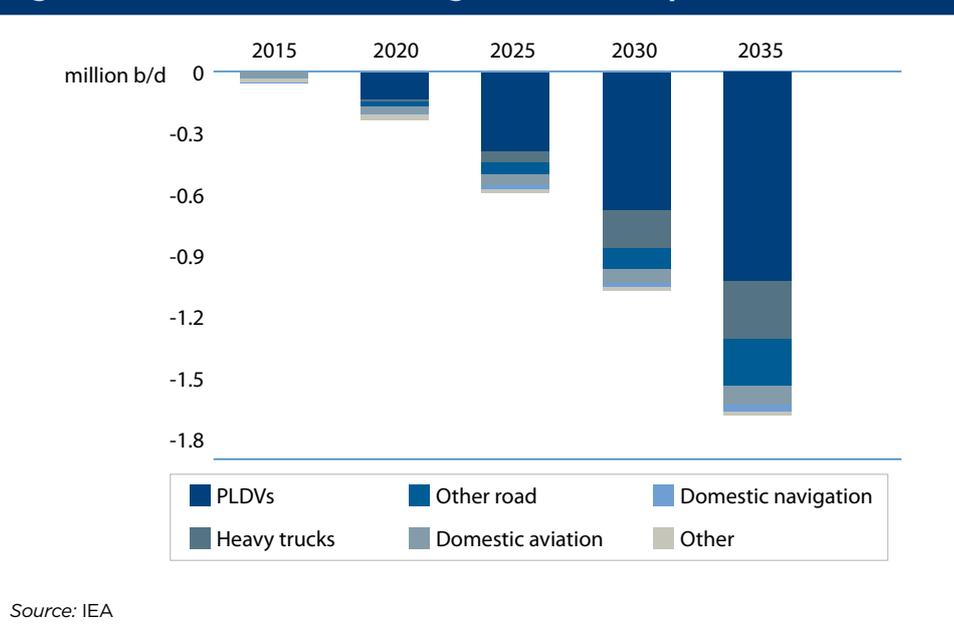


Figure 2: Potential for demand savings in China's transport sector



gasoline, which retails at about \$1.88/litre in Seoul.

About 13% of South Korea's cars, or 2.4 million, already run on liquefied petroleum gas (LPG). LPG and LNG tanks similarly take up considerable storage space in a car's boot, making the switch less painful for South Koreans, while conventional car owner's elsewhere are less inclined to forgo precious space to make way for the cumbersome bottles. If demand for LNG, which is much cleaner and far more economic than LPG, takes off it would be easy to add LNG pumps to retail filling stations.

China leads the transition to LNG, having built 160 filling stations, 10 times more than operate in the US, and 3,000 are expected online by 2015, according to Bernstein

Research. But it makes sense for Australia's long-haul trucks, which pull three or more trailers, and should catch on in Thailand too. Bangkok is pushing compressed natural gas (CNG) in trucking, but LNG offers better economics, greater range and needs only one tank compared with six for CNG. This has the advantage of longer driving ranges without affecting tractor weight and incremental costs.

Despite the inroads made by LNG, gasoline and diesel, demand for transportation in Asia-Pacific will more than double from 7 million to around 15 million b/d by 2040. Rapid motorisation in Asia's fast-expanding economies, combined with scant policy direction to encourage alternative energy is largely to blame. **DE**