

ONE PAGER: DOMESTIC TRANSPORT BEHAVIOUR LEVER

In the base year 2016 in the Malaysia Climate Action Simulator (MCAS), each of us travelled about 17,852km per year, excluding trips abroad. 79% of this was by car or motorcycle, 1% by rail, 13% by bus, 6% by domestic air and 1% walking.

Walking and cycling

Malaysian are willing to walk an average of about 400-500 meters, approximately 183 km per year. For cycling, Malaysians are willing to cycle up to 30 minutes (10km). Assuming that cycling is mainly for recreation on weekends, the total distance traveled is about 960km per year.

For Level 1

Level assumes that by 2050 the annual distance travelled per person will be 13% further than in 2016. Of this, 81% is expected to be done by car.

For Level 2

Level assumes that by 2050 the annual distance travelled per person will be 5% further than in 2016. Of this, 78% is expected to be done by car.

For Level 3

Level assumes that by 2050 the annual distance travelled per person will be 5% further than in 2016. Of this, 73% is expected to be done by car.

For Level 4

Level assumes that by 2050 the annual distance travelled per person will be 5% further than in 2016. Of this, 62% is expected to be done by car.

		2050	2050	2050	2050
	2016	Level 1	Level 2	Level 3	Level 4
km travelled/person/year	17,852	20,148	18,705	18,705	17,852
% of km by:					
Car or motorcycle	79	81	78	73	62
Rail	1	2	3	4	8
Bus	13	9	11	15	22
Walking	1	0.5	0.5	0.6	0.7
Domestic air	6	7	7	7	7
Bicycle	0.5	0.3	0.3	0.4	0.5

ONE PAGER: LIGHT ELECTRIC VEHICLES SHARE

In the base year 2016 in the Malaysia Climate Action Simulator (MCAS), the share of battery electric cars is a small fraction compared to conventional vehicles, with the majority still fueled by fossil fuels.

Level 1

Level 1 assumes that by 2050, the scenario is remain as in 2016, where the share of battery electric vehicles is a small fraction compared to conventional vehicles, with the majority still fuelled by fossil fuels.

Level 2

Level 2 assumes that by 2050, the share of light electric vehicles will be distributed as follows; 1% for electric cars, 1% for electric vans, and 1% for electric small trucks.

Level 3

Level 3 assumes that by 2050, the share of light electric vehicles will be distributed as follows; 40% for electric cars, 5% for electric vans, and 5% for electric small trucks.

Level 4

Level 4 assumes that by 2050, the share of light electric vehicles will be distributed as follows; 80% for electric cars, 10% for electric vans, and 10% for electric small trucks.

ONE PAGER: LIGHT HYDROGEN VEHICLES SHARE

In the base year 2016 in the Malaysia Climate Action Simulator (MCAS), no hydrogen vehicles are used, with the majority still fueled by fossil fuels.

Level 1

Level 1 assumes that by 2050, the scenario is remain as in 2016, where no hydrogen vehicles are used, with the majority still fuelled by fossil fuels.

Level 2

Level 2 assumes that by 2050, the share of light hydrogen vehicles will be distributed as follows; 1% for hydrogen cars, 1% for hydrogen vans, and 1% for hydrogen small trucks.

Level 3

Level 3 assumes that by 2050, the share of light hydrogen vehicles will be distributed as follows; 20% for hydrogen cars, 20% for hydrogen vans, and 20% for hydrogen small trucks.

Level 4

Level 4 assumes that by 2050, the share of light hydrogen vehicles will be distributed as follows; 40% for hydrogen cars, 40% for hydrogen vans, and 40% for hydrogen small trucks.

ONE PAGER: LIGHT PLUG IN HYBRID VEHICLES SHARE

In the base year 2016 in the Malaysia Climate Action Simulator (MCAS), the share of hybrid vehicles is a small fraction compared to conventional vehicles.

Level 1

Level 1 assumes that by 2050, the scenario is remain as in 2016, where the share of hybrid vehicles is a small fraction compared to conventional vehicles.

Level 2

Level 2 assumes that by 2050, the share of light hybrid vehicles will be distributed as follows; 1% for hybrid cars, 1% for hybrid vans, and 1% for hybrid small trucks.

Level 3

Level 3 assumes that by 2050, the share of light hybrid vehicles will be distributed as follows; 60% for hybrid cars, 5% for hybrid vans, and 5% for hybrid small trucks.

Level 4

Level 4 assumes that by 2050, the share of light hybrid vehicles will be distributed as follows; 80% for hybrid cars, 10% for hybrid vans, and 10% for hybrid small trucks.

ONE PAGER: LIGHT BIOFUEL VEHICLES SHARE

In the base year 2016 in the Malaysia Climate Action Simulator (MCAS), the share of light biofuel vehicles is between 0.1% and 5.2%.

Level 1

Level 1 assumes that by 2050, the share of light biofuel vehicles will be distributed as follows; 10% for biofuel cars, 10% for biofuel vans, and 10% for biofuel small trucks.

Level 2

Level 2 assumes that by 2050, the share of light biofuel vehicles will be distributed as follows; 20% for biofuel cars, 20% for biofuel vans, and 1% for biofuel small trucks.

Level 3

Level 3 assumes that by 2050, the share of light biofuel vehicles will be distributed as follows; 30% for biofuel cars, 30% for biofuel vans, and 30% for biofuel small trucks.

Level 4

Level 4 assumes that by 2050, the share of light biofuel vehicles will be distributed as follows; 50% for biofuel cars, 50% for biofuel vans, and 50% for biofuel small trucks.

ONE PAGER: HEAVY ELECTRIC VEHICLES SHARE

In the base year 2016 in the Malaysia Climate Action Simulator (MCAS), the share of heavy electric vehicles is as follows; 80% for rail passenger and 2% for electric bus.

Level 1

Level 1 assumes that by 2050, the scenario is remain as in 2016, except for rail freight will increase to 20%.

Level 2

Level 2 assumes that by 2050, the share of heavy electric vehicles will be distributed as follows; 1% for electric large trucks, 1% for electric buses, and 90% for electric passenger trains.

Level 3

Level 3 assumes that by 2050, the share of heavy electric vehicles will be distributed as follows; 5% for electric large trucks, 5% for electric buses, and 95% for electric passenger trains.

Level 4

Level 4 assumes that by 2050, the share of heavy electric vehicles will be distributed as follows; 10% for electric large trucks, 10% for electric buses, and 100% for electric passenger trains.

ONE PAGER: HEAVY HYDROGEN VEHICLES SHARE

In the base year 2016 in the Malaysia Climate Action Simulator (MCAS), no heavy hydrogen vehicles are used, with the majority still fueled by fossil fuels.

Level 1

Level 1 assumes that by 2050, the scenario is remain as in 2016, where no heavy hydrogen vehicles are used, with the majority still fuelled by fossil fuels.

Level 2

Level 2 assumes that by 2050, the share of heavy hydrogen vehicles will be distributed as follows; 1% for hydrogen large trucks and no change for other types of heavy vehicles.

Level 3

Level 3 assumes that by 2050, the share of heavy hydrogen vehicles will be distributed as follows; 5% for hydrogen large trucks, and 60% of hydrogen buses.

Level 4

Level 4 assumes that by 2050, the share of heavy hydrogen vehicles will be distributed as follows; 10% for hydrogen large trucks and 80% of hydrogen buses.

ONE PAGER: HEAVY PLUG-IN HYBRID VEHICLES SHARE

In the base year 2016 in the Malaysia Climate Action Simulator (MCAS), no heavy plug-in hybrid vehicles are used, with the majority still fueled by fossil fuels.

Level 1

Level 1 assumes that by 2050, the scenario is remain as in 2016.

Level 2

Level 2 assumes that by 2050, the share of heavy hybrid vehicles will be distributed as follows; 1% for hybrid large trucks, and 1% for hybrid buses.

Level 3

Level 3 assumes that by 2050, the share of heavy hybrid vehicles will be distributed as follows; 5% for hybrid large trucks, and 5% for hybrid buses.

Level 4

Level 4 assumes that by 2050, the share of heavy hybrid vehicles will be distributed as follows; 10% for hybrid large trucks, and 10% for hybrid buses.

ONE PAGER: AVIATION

In the Malaysia Climate Action Simulator (MCAS), the lever for aviation consists of aviation efficiency and aviation biofuel. Aviation efficiency encompasses the energy intensity of aircraft travel and the share of hybrid electric aircraft. Meanwhile, aviation biofuel represents the proportion of biofuel used in conventional aircrafts.

Level 1

Level 1 assumes that by 2050, the aircraft will be 18% more efficient than in 2016 and no introduction of hybrid electric aircraft. Additionally, 1% of liquid fuel used in aircraft is assumed to be biofuel.

Level 2

Level 2 assumes that by 2050, the aircraft will be 43% more efficient than in 2016 and no introduction of hybrid electric aircraft. Additionally, 2% of liquid fuel used in aircraft is assumed to be biofuel.

Level 3

Level 3 assumes that by 2050, the aircraft will be 54% more efficient than in 2016 and 50% are hybrid electric aircraft. Additionally, 5% of liquid fuel used in aircraft is assumed to be biofuel.

Level 4

Level 4 assumes that by 2050, the aircraft will be 67% more efficient than in 2016 and 100% are hybrid electric aircraft. Additionally, 10% of liquid fuel used in aircraft is assumed to be biofuel.