A 10-Point Plan to Cut Oil Use

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International Energy Agency



INTERNATIONAL ENERGY AGENCY

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Immediate actions in advanced economies can **cut oil demand by 2.7 million barrels a day in the next 4 months.**

Action 1



Reduce speed limits on highways by at least 10 km/h

Impact: Saves around 290 kb/d of oil use from cars, and an additional 140 kb/d from trucks.

Action 2



Work from home up to three days a week where possible

Impact: One day a week saves around 170 kb/d; three days saves around 500 kb/d.

Action 3



Car-free Sundays in cities

Impact: Every Sunday saves around 380 kb/d; one Sunday a month saves 95 kb/d.

Action 4



Make the use of public transport cheaper and incentivise micro-mobility, walking and cycling

Impact: Saves around 330 kb/d.

Action 5



Alternate private car access to roads in large cities

Impact: Saves around 210 kb/d.

Action 6



Increase car sharing and adopt practices to reduce fuel use

Impact: Saves around 470 kb/d.

Action 7



Promote efficient driving for freight trucks and delivery of goods

Impact: Saves around 320 kb/d.

Action 8



Using high-speed and night trains instead of planes where possible

Impact: Saves around 40 kb/d.

Action 9



Avoid business air travel where alternative options exist

Impact: Saves around 260 kb/d.

Action 10



Reinforce the adoption of electric and more efficient vehicles

Impact: Saves around 100 kb/d.

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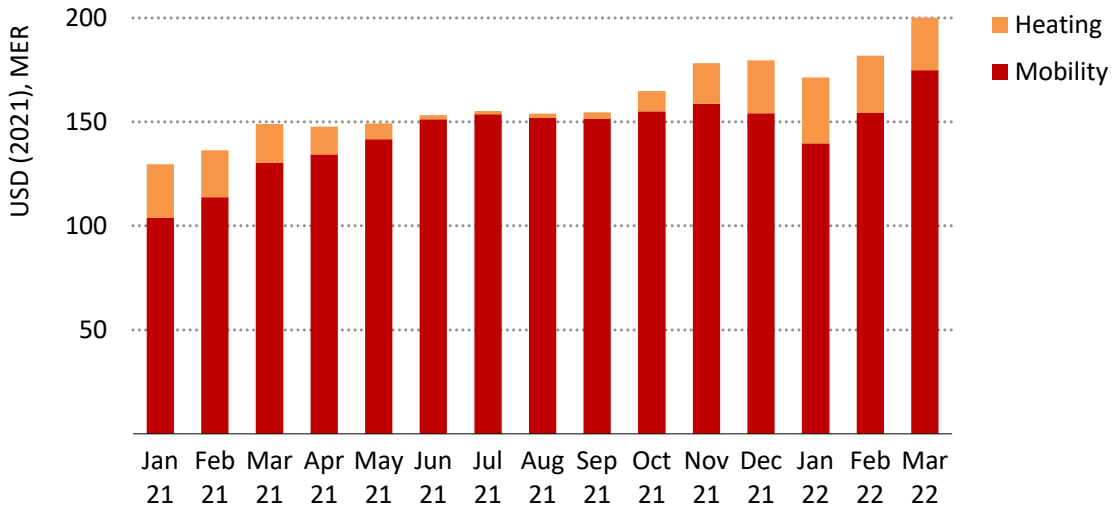
Immediate actions in advanced economies can cut oil demand by 2.7 million barrels a day in the next 4 months

Russia's invasion of Ukraine has thrown global commodity markets into turmoil. The global oil market – in which Russia is a major force – is one of the most heavily affected. Russia is the world's third largest oil producer and the largest oil exporter.

Significant strains are showing in the global oil market, compounding difficulties in natural gas markets and creating a looming emergency for global energy security. Oil prices have swung violently since the Russian invasion, with the global benchmark nearing the all-time high of USD 150 per barrel at times, putting the still fragile and uneven global economic recovery at risk. The United States and Canada are banning imports of Russian oil while the United Kingdom has announced plans to do so by the end of the year. The IEA's latest *Oil Market Report* on 16 March identified the potential for a shut-in of 2.5 million barrels a day of Russian oil exports starting from April; but losses could increase should restrictions or public condemnation escalate. A prolonged period of volatility for markets appears likely.

More than half of Russia's oil exports go to Europe and around 20% go to China, but the market is global, meaning changes in supply and prices affect everyone. The increases in prices are being felt everywhere. Even if the price of oil on international markets has not so far risen as high as the all-time record reached in 2008, currency exchange rates mean that the price at the pump is at the highest level ever in some countries. On average, monthly spending on oil products for transport and heating in January and February rose by more than USD 40 per household (nearly 35%) in advanced economies, and nearly USD 20 per household (over 55%) in emerging and developing economies compared with last year's levels. With the potential loss of large amounts of Russian supplies looming, there is a real risk that markets tighten further and oil prices escalate significantly in the coming months as the world enters the peak demand season of July and August. The risks are most acute – and already being felt in some cases – in market segments where Russia is a major supplier, such as diesel.

Average monthly expenditures by households for oil products in advanced economies



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Several governments are introducing measures to help consumers by reducing prices at the pump. Wherever possible, pricing measures should be designed carefully, prioritising the poorest parts of the population and those for whom cars are an indispensable part of their economic activity. Governments have a variety of tools that could be used, depending on the country context. For example, where taxes represent a large portion of prices for consumers, a temporary reduction in those levies or VAT can alleviate the extra burden on households. Direct payments are a means to target the poorest parts of the population.

Such measures, however, do not address the broader strains affecting the market. One way to do so is to increase supply. Spare capacity is available in some major producers outside Russia, but the disappointing outcome of recent OPEC+ discussions suggests limited willingness to provide immediate relief to the market. IEA member countries, as part of their collective response, unanimously agreed this month to draw on emergency stocks for an initial release of 62.7 million barrels, the largest stock release in IEA history. New oil production projects could increase liquidity in the market in the medium term but would not be able to ease the current strains. The oil industry's stocks typically help balance the market when demand outweighs supply. But even before Russia's invasion, the industry's oil inventories were depleting rapidly. At the end of January, inventories in advanced economies were 335 million barrels below their five-year average and at eight-year lows.

Another way to help balance the market and reduce the pain caused by high oil prices is to bring down demand. Following Russia's invasion of Ukraine, the IEA's March *Oil Market Report* lowered its forecast for global oil demand in 2022 by 950 thousand barrels a day (kb/d) because of the expected impacts of higher prices and weaker GDP growth. But this would still leave the oil market very tight, with upward pressure on prices likely to remain in an uncertain geopolitical environment.

Further reductions in demand are possible in the near term, however, through actions by governments and citizens. The world's advanced economies together account for around 45% of global oil demand, and most of them are members of the IEA. Demand restraint (see annex) is one of the emergency response measures that all IEA member countries are required to have ready as a contingency at all times – and that they can use to contribute to an IEA collective action in the event of an emergency.

In view of this and the potential emergency the world is facing, the IEA is proposing 10 immediate actions that can be taken in advanced economies to reduce oil demand before the peak demand season. We estimate that the full implementation of these measures in advanced economies alone can cut oil demand by 2.7 million barrels a day within the next four months, relative to current levels.[1] The analysis in this report focuses on the potential effect of these measures in advanced

[1] The assessed impacts on oil savings in the remainder of the document are presented for each individual measure in isolation. The total savings of 2.7 million barrels a day are calculated in a way that avoids double-counting of oil savings from different measures when their impacts may overlap.

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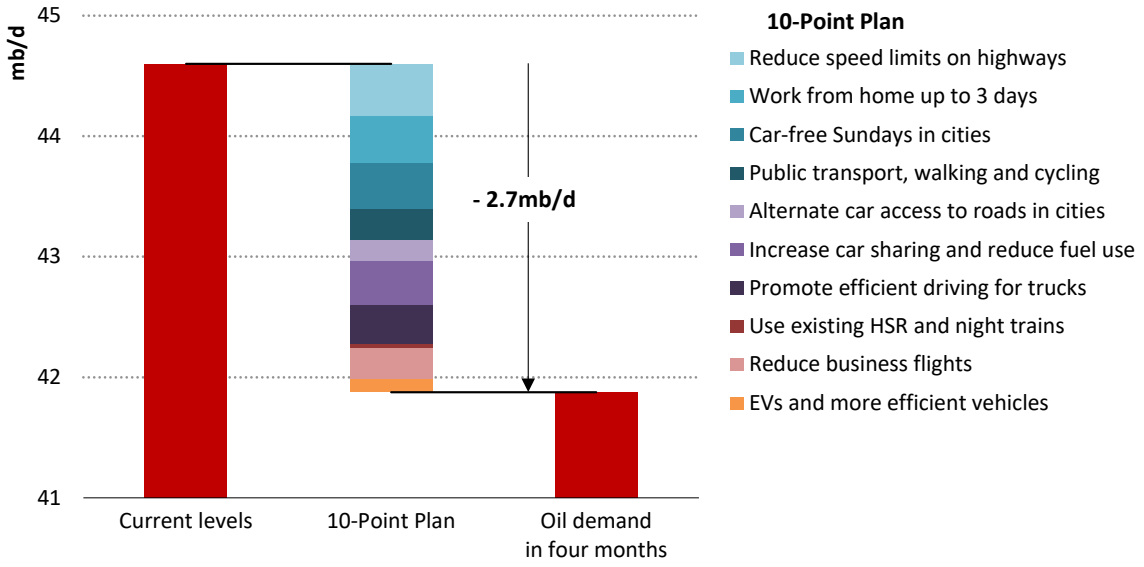
economies, but their adoption in more countries would further increase their impact. Ensuring local and regional coordination of their implementation would maximise the impact.

Looking further ahead, this report also suggests a path for countries to put oil demand into structural decline in the medium term, building on measures already included in economic recovery packages introduced to deal with the impacts of the Covid-19 pandemic. Adopting the immediate and longer-term recommendations would put the countries on track for a decline in oil demand consistent with what is required to reach net zero emissions by 2050.

Oil demand reductions in advanced economies within four months in the 10-Point Plan



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The majority of oil demand is in transport, so the proposed measures of the *10-Point Plan* essentially focus on how we get from A to B. How these measures are implemented is subject to each country's own circumstances – in terms of their energy markets, transport infrastructure, social and political dynamics, and other aspects.

The IEA stands ready to support all countries in designing and optimising measures to suit their respective circumstances. Government regulations and mandates have proven to be very effective for successfully implementing these measures in various countries and cities, while public information and awareness campaigns can serve as alternative or complementary measures. Ultimately, however, reducing oil demand does not depend solely on national governments. Several of the measures can be implemented directly by other layers of government – such as state, regional or local – or just voluntarily followed by citizens and companies, enabling them to save money while showing solidarity with the people of Ukraine and reducing greenhouse gas emissions.

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1. Reduce speed limits on highways by at least 10 km/h

- A country-by-country and state-by-state analysis shows that a reduction of speed limits on highways by 10 km/h relative to current levels can significantly reduce fuel consumption for cars, light commercial vehicles and trucks.
- Speed limits on highways vary widely among countries but are typically in the range of 100 km/h to 135 km/h. For example, average speed limits on urban and rural interstate highways in the United States are around 110 km/h. In the European Union, speed limits vary between 100 km/h and 140 km/h – except in Germany, which has no speed limit on some highways.
- A reduction in speed limits can be implemented by national governments; many countries did so during the 1973 oil crisis, including the United States and several European countries. Today, many countries use temporary speed limit reductions on highways, mostly to reduce congestion and/or air pollution and to improve road safety. They are also frequently adopted within cities to combat local air pollution.

Impact: Around 290 kb/d of oil use can be saved in the short term through a speed limit reduction of just 10 km/h on motorways for cars. A further 140 kb/d (predominantly diesel) can be saved if heavy trucks reduce their speed by 10 km/h.

2. Work from home up to three days a week where possible

- Before the pandemic, the use of private vehicles to commute to work in advanced economies was responsible for around 2.7 million barrels of oil use a day. Yet, around one-third of the jobs in advanced economies can be done from home, opening up the possibility of reducing oil demand while maintaining productivity.
- The impact of working from home on oil consumption varies widely by region, depending on the distance of the commute and average fuel consumption of the car. In the United States, the average one-way commute by car is around 18 kilometres, and over three-quarters of car commuters travel alone, according to the US Census Bureau. In Europe, the average one-way car commute is around 15 kilometres. Differences in the fuel economy of vehicles further affect the variations among countries. For example, a new car in the United States consumes around 40% more fuel than one sold in Europe for a trip of the same length.
- There is an additional seasonal element to the impacts of working from home due to the use of air conditioning in cars (see Point 6). As the weather gets warmer, air conditioning systems increase the amount of fuel used by cars. Therefore, working from home tends to save more oil during the summer months.
- During confinement periods triggered by the pandemic, many countries implemented requirements for people to work from home for activities where it is possible. While most of those requirements have been lifted, some governments such as France are encouraging working from home without a minimum weekly

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quota. The employer has the flexibility to set the terms and conditions while keeping an eye on preventing social isolation. Working from home up to three days per week would cut oil demand and could reduce fuel bills. We estimate that avoiding an average daily commute by car currently saves around USD 2 to USD 3 each time in advanded economies.

Impact: One day of working from home can avoid around 170 kb/d of oil use. Three days of working from home avoids around 500 kb/d in the short term.

3. Car-free Sundays in cities

- Car-free Sundays were introduced in countries such as Switzerland, the Netherlands and West Germany during the 1973 oil crisis. Brussels, Edinburgh, Vancouver, parts of Tokyo and other cities have used them more recently to promote public health, community-oriented spaces and cultural events. More than 3 000 towns and cities registered for the European Mobility Week in 2021, which included a commitment to a car-free day.
- Car-free Sundays help support the uptake of walking and cycling, which can generate a positive spillover effect throughout the week. This can in turn be supported by fare reductions or the provision of free public transport.
- Banning the use of private cars on Sundays brings a number of additional benefits to public health and well-being, including cleaner air, reduced noise pollution and improved road safety. In warmer climates, reduced traffic can also reduce urban "heat-island" effects. The measure is also relatively straightforward to enforce using spot fines and road closures.

Impact: Avoids around 380 kb/d of oil use in the short term if implemented in large cities every Sunday. If only one Sunday per month, the amount drops to 95 kb/d.

4. Make the use of public transport cheaper and incentivise micro-mobility, walking and cycling

- An effective way to reduce oil demand is to shift travel demand away from private cars to public transport, micro-mobility options, walking or cycling wherever practical.
- Where public transport exists, a short-term temporary response can be to reduce fares for public buses, metro and light rail. Trial initiatives, including in some US cities, have shown that reduced or free public transport fares result in increased ridership. New Zealand, for instance, is halving public transport fares

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for the next three months in response to high fuel prices. Public transport systems' available spare capacity during peak travel periods differs by country and city. However, there is typically spare capacity available in off-peak periods that can be used to "spread" the peak if employers simultaneously provide flexibility in working hours.

- In countries where it is culturally acceptable, cycle lanes and pavement-widening strategies exist or can be made available quickly. And where distances are sufficiently short, encouraging people to walk or cycle can be a complementary measure. In cities with available public transport, this can help make public transport less crowded and therefore more attractive and accessible. Rolling out programmes to incentivise the purchase of electric bikes can also be effective, particularly in cities where journeys involve larger distances. Belgium, France and Italy offer residents an allowance to buy a bicycle, with the amount depending on bicycle type. Boosting shared micro-mobility options such as electric kick scooter or electric bicycles can also help – Lime, Bird or Dott are some examples of app-based providers that already provide this service in major cities.
- Investment in public transport and infrastructure to support walking and cycling has been boosted by sustainable economic recovery packages introduced in response to the Covid crisis. For example, the French government allocated EUR 500 million to an "active mobility fund" to build cycling itineraries, and Italy supports the design and development of cycle highways (EUR 50 million per year for the next three years). New Zealand enacted a nationwide cycle lane investment drive in 2020 of over USD 140 million in direct government spending by 2024. In 2021, Milan repurposed 35 kilometres of road previously used for motor traffic into cycling lanes and aims at achieving 750 kilometres of segregated lanes by 2035. Several cities – such as Paris, London and Brussels – created very low speed zones (30 km/h) to discourage car use. When the summer months approach, cycling becomes more popular and can be further encouraged.
- Overall, governments in advanced economies are set to spend around USD 2.5 billion in the next two years on cycle lanes and pedestrian walkways, and a further USD 33 billion in urban transport infrastructure as part of economic recovery packages.

Impact: Short-term measures where feasible and culturally acceptable can avoid around 330 kb/d of oil use.

5. Alternate private car access to roads in large cities

- Restricting private cars' use of roads in large cities to those with even number-plates some weekdays and to those with odd-numbered plates on other weekdays is a measure with a long track record of successful implementation. During the first oil shock, the Italian government substituted car-free Sundays with an

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odd/even number plate policy. Since the 1980s, such schemes have been deployed in many cities to tackle congestion and air pollution peaks, including Athens, Madrid, Paris, Milan and Mexico City.

- Implementation of restrictions based on number plates typically hinges on the availability of other options to satisfy travel demand. They can pose logistical or fairness concerns, especially as they are most disruptive for less wealthy single-car households. These concerns can be mitigated by the other measures that we propose, such as reducing the price of public transport or promoting carpooling. Exceptions can be made for electric vehicles. The measure's effectiveness in reducing car activity may fall in the longer term if wealthier households buy additional internal-combustion engine cars to circumvent it.
- Households that own multiple cars may be able to circumvent the restrictions, but this effect and others (such as the remaining cars allowed on roads making longer multipurpose trips) are factored into our estimates of the potential reduction in oil demand.

Impact: A reduction of around 210 kb/d of oil in the short term if alternate car access is applied on two days per week in large cities with good public transport options.

6. Increase car sharing and adopt practices to reduce fuel use

- Car users from different households can choose to carpool for non-urban trips, reducing oil demand and saving money at the same time. Governments can provide additional incentives by designating dedicated traffic lanes and parking spots next to public transport hubs and by reducing road tolls on higher occupancy vehicles. Such measures are in force in suburban areas of cities like Madrid and Houston, among others.
- Non-urban car trips are responsible for over 4 million barrels a day of oil use in advanced economies. Currently, very few of these trips involve the pooling of people from different households, which results in lower levels of car occupancy. The average car occupancy in Japan is 1.3 people per car; in the United States, it is around 1.5 per car; in Europe, it is between 1.4 and 1.6 per car. Across advanced economies, the average is around 1.5.
- Organising carpooling is more practical today than it was in the past. Several smartphone apps are available, including BlaBlaCar, Liftshare, Scoop, TripBuddy, ecov and GoKid. The carpooling market has grown by over 10% annually in recent years, although the Covid pandemic has reversed this trend since 2020 due to health concerns.
- A higher average car occupancy rate can be interpreted either as an indication that carpooling in certain regions is more viable (e.g. culturally, technically, habitually) or as an indication of lower capacity for additional carpooling.

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Governments will need to take this into account when deciding upon the measures to take to incentivise carpooling.

- Cars can also be used more fuel efficiently by adopting best practices both in driving and maintenance. For example, regular tyre pressure monitoring can save up to 1.5% of fuel use. In addition, air conditioning in cars typically accounts for 4% to 10% of total fuel consumption in advanced economies, depending on the local climate and comfort preferences. For those car users who can, we therefore propose a temporary 3 °C increase in the temperature setting to give an immediate improvement in fuel economy and cut fuel bills.

Impact: An increase of around 50% in the average car occupancy across advanced economies in 1-in-10 trips and adopting best-practices to decrease car fuel use can save around 470 kb/d of oil in the short term.

7. Promote efficient driving for freight trucks and delivery of goods

- Vehicles can be driven to optimise fuel use. The possible measures span a wide range and can include improved vehicle maintenance (such as regular checks of tyre pressure) as well as driving habits. Governments can introduce so-called eco-driving techniques as part of the tuition and examination processes required to receive a driving license and advanced driving certificates, as has been done in France and other countries. Broader public information campaigns can supplement these targeted efforts.
- Companies with vehicle fleets – such as for the delivery of goods – are particularly well placed to provide training and awareness campaigns to promote eco-driving of commercial vehicles, cutting into diesel use in particular, given the structure of their fleets. Additionally, lower demand for very short delivery times can contribute to increasing the overall fuel efficiency of logistics during last-mile delivery. Besides reducing diesel use, eco-driving can also help reduce fuel bills and vehicle maintenance costs.
- Trucks are major consumers of diesel, and so improving the efficiency of their operations can be an important contributor to reducing oil use. Readily accessible measures for the next four months can be in improving logistics: truck companies can optimise vehicle loads and reduce empty travelling. Cooperation between companies and widespread use of digital technologies can help achieve these goals.

Impact: These measures can avoid around 320 kb/d of oil use in the short term.

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8. Using high-speed and night trains instead of planes where possible

- Where high-speed rail lines connect major cities at distances under 1 000 km, trains provide a high-quality substitute for short-distance flights. High-speed rail can substantially replace short-haul air travel on routes that offer affordable, reliable and convenient train journeys. The use of night trains can be a means to cross wider distances in particular and spread traffic across different times of the day.
- Based on existing high-speed rail infrastructure, around 2% of aviation activity in advanced economies could be shifted to high-speed rail, including for leisure as well as business travel. Almost all of this involves flights of less than 800 km.
- Rail services must be operated and serviced efficiently to get widespread acceptance as an alternative to flights. In that case, high-speed rail can not only reduce oil demand and emissions from short-haul flights – it can also be faster and more comfortable, reliable and affordable. Rail stations are often located in or near city centres, making them more convenient and sustainable than airports.
- In France, the recent Climate and Resilience law requires the cancellation of flights if alternatives exist to reach the destination within two-and-a-half hours. Companies have already started to cut some flights, including between Paris and cities such as Nantes, Lyon and Bordeaux.

Impact: Avoids around 40 kb/d oil use in the short term.

9. Avoid business air travel where alternative options exist

- Given the space requirements in planes, the journeys of passengers in premium classes consume three times more oil than those in economy class. Although not all business travel by plane can be avoided, in many cases the use of virtual meetings can be an effective substitute. A significant reduction of around two out of every five flights taken for business purposes is feasible in the short term, based on the notable changes witnessed during the Covid pandemic.
- In response to the pandemic, virtual business interactions have become more common. Many companies have invested heavily in enhancing the experience of remote meetings, making this a more effective, acceptable and viable substitute to business flights and direct human engagement. Businesses continued operations – and in some cases thrived – despite having to make this major adjustment.
- Several major corporations – such as HSBC, Zurich Insurance, Bain & Company and S&P Global – have already announced targets to cut their business travel emissions by as much as 70%. Reducing business travel can play a role in meeting ESG goals and help reduce corporate carbon footprints.

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- Before the outbreak of the pandemic, about one-fifth of passenger trips by plane in advanced economies were for business purposes. Business travel was hit harder than other categories of passenger air travel during the pandemic, dropping to historic lows. High oil prices may disincentivise airlines to operate underutilised routes in response to reduced business travel. But, to maximise the impact, governments can provide flexibility on flight slot allocations so as to minimise the occurrence of ghost flights.

Impact: Avoids 260 kb/d of oil use in the short term.

10. Reinforce the adoption of electric and more efficient vehicles

- By the end of 2021, 8.4 million electric cars were on the roads in advanced economies, building on record sales in Europe in particular. Demand for electric cars continues to be strong, on the back of plummeting costs of batteries in recent years and government support. However, supply chain bottlenecks in semiconductors, vehicle raw materials, and battery materials and manufacturing are putting strains on the market. The impacts are likely to be felt longer term, but facilitating logistical coordination to shore up flows of materials and components is a near-term priority so that disruptions in some parts of the automotive supply chain can be absorbed by less-affected manufacturing capabilities elsewhere in the global market.
- The near-term priority is to ensure successful delivery of car orders to consumers. Where possible, fleet orders may be prioritised, as their impact on moderating oil demand is larger than for households with multiple cars.
- Actions taken now to hasten the adoption of electric vehicles will have a sustained effect in the future. Similarly, new conventional vehicles sold must be fuel-efficient; fuel economy targets as well as taxes that penalise high-emissions vehicles are key for supporting further fuel economy improvements. Enforcing existing regulation and supporting them via awareness campaigns is central to reaping benefits in the near term.

Impact: Avoids more than 100 kb/d of oil use in the short term, building on expected sales of electric and more fuel-efficient cars over the next four months. Sustained action on supply chains and policy support can help secure further savings.

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Elements of this *10-Point Plan*, combined with structural measures, can help put oil demand on a more sustainable path in the longer term

Reducing oil use must not remain a temporary measure. Sustained reductions are desirable in order not only to improve energy security but also to tackle climate change and reduce air pollution. Governments have all the necessary tools at their disposal to put oil demand into decline in the coming years, which would support efforts to both strengthen energy security and achieve vital climate goals.

Retaining those elements of this *10-Point Plan* to which societies can more easily adapt and that consumers can integrate into their daily habits can help temper oil demand growth beyond the peak demand season. But governments must also consider accelerating their clean energy transitions and building on their net zero emissions strategies. To reach net zero emissions by 2050, oil demand in advanced economies in 2030 must be more than 15 million barrels a day lower than in 2021.

Many measures that accelerate clean energy transitions in oil-consuming sectors can have a material impact on oil use already over the next two to three years, even if their impact will be felt more strongly a few more years down the road. But decisions need to be taken now for them to materialise. We identify a set of key actions that can be taken now, prioritising those that can help advanced economies to put oil demand into a noticeable decline in the medium-term. The measures are lasting: more oil demand reductions can be expected for years to come, in line with the need to cut global oil use to reach net zero emissions by 2050. Key actions include:

- **Prioritise support to electric vehicles and unblock supply chains:** Most of the new EVs sold between now and the summer have already been ordered, but sales can be further boosted in the subsequent months and years by providing targeted government support to car sales and the roll-out of the necessary infrastructure. Electric car sales in the IEA's Net Zero by 2050 scenario reach 28 million in 2030 in advanced economies, up from 3.2 million in 2021. There is also large untapped potential for increased sales of electric buses and short-haul electric freight trucks. Accelerating long-term investment in supply resiliency will be critical to ease supply chain constraints for key inputs to electric cars.
- **Significantly raising the ambition of fuel economy standards for road vehicles:** Sales of electric cars are rising and ambitious fuel economy and/or CO_2 emissions standards are in place in many countries. Yet sales of SUVs also keep increasing, with the vehicles accounting for nearly 10% of oil use in advanced economies. Policies to address the rise in sales of such vehicles – such as specific registration and road taxes – are key to achieve steady overall fuel economy progress and oil savings. The fuel economy of trucks must also be improved further; policy is critical even if many measures (such as aerodynamic devices installed at the rear of trailers to reduce drag) can be cost-effective at current oil prices.

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- **Boosting the supply of alternative fuels:** Availability of sustainable feedstock is a key constraint on the additional amount of biofuels that could be blended into the oil product pools in the near-term without harming food markets. But there is potential for increased use of waste cooking oil and animal fat for biodiesel production by maximising industrial output and non-food feedstock collection. Synthetic fuels (such as hydrogen and ammonia) are not expected to reduce oil use noticeably in the near-term, but RD&D programs should be accelerated to help diversify future supply. Cleaner fuels account for around one-sixth of road transport use by 2030 in advanced economies in a scenario compatible with IEA's Net Zero roadmap; additional needs are in shipping and aviation.
- **Accelerate the replacement of oil boilers with heat pumps and ban installation of new ones:** In advanced economies alone, more than 3.5 million barrels a day of oil are used today to heat homes, shops and offices, and to meet heat demand and run engines in light industries such as food and beverages, machinery, and mining. Most of these uses of oil can be replaced by heat pumps and renewables. An additional 5.5 mb/d of such uses are in emerging economies and developing countries.
- **Increase plastic waste collection, re-use and recycling:** Many products made from plastic are 'single use' – some for good reason (e.g. certain medical supplies) and some more for convenience (e.g. plastic bottles, cutlery and food containers). Measures targeting their reduction have a relatively modest impact on oil demand in the short term, but they lay the groundwork for larger reductions and can make an important contribution to addressing the problem of mismanaged plastic waste. Existing plastic recycling facilities can be further utilised to boost recycling rates, supported by enhanced waste management infrastructure. We also estimate that collection rates can be increased by around one percentage point per year in advanced economies in the coming years, alongside incremental increases in yield and substitution rates, which increase the extent to which plastics recycling reduces oil demand.

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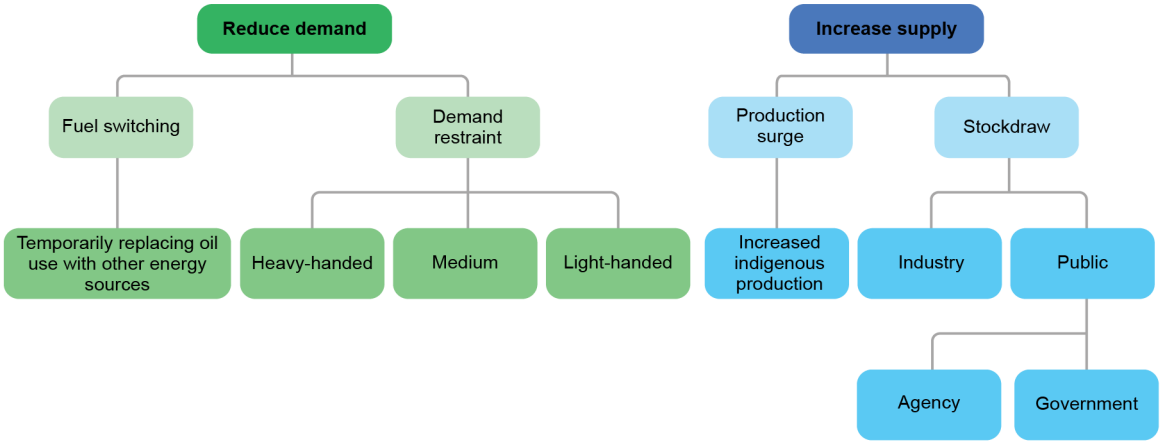
Annex

IEA Emergency Response System



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