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Consideration of technical regulations

to be listed in the Compendium of Candidate

global technical regulations – United States of America

2012–2016 light-duty vehicle corporate Average Fuel Economy

(CAFE) and Greenhouse Gas (GHS) standards

Request to list in the Compendium of candidate global technical regulations (compendium of candidates) the United States of America Environmental Protection Agency and the Department of Transportation programmes for Light-duty vehicle greenhouse gas emission standards and Corporate Average Fuel Economy Standards

Submitted by the representative of the United States of America*

The document reproduced below is submitted by the United States of America to the Executive Committee (AC.3) for consideration. It is a request to include in the Compendium of Candidates the joint rulemaking related to the Light-duty Greenhouse Gas and Corporate Average Fuel Economy (CAFE) Programmes. The document is based on informal document No. WP.29–151–05. In order to be considered by AC.3, this request is accompanied by a copy of the regulations mentioned (see Article 5, paras. 5.2.1., 5.2.1.1. and 5.2.2. of the 1998 Agreement).

* In accordance with the programme of work of the Inland Transport Committee for 2006–2010 (ECE/TRANS/166/Add.1, programme activity 02.4), the World Forum will develop, harmonize and update Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.

United States of America Environmental Protection Agency and Department of Transportation Programmes for Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards

1. The United States Department of Transportation's National Highway Traffic Safety Administration (NHTSA) and the United States Environmental Protection Agency (EPA) in April 2010 finalized a joint rule to establish a national programme consisting of new standards for model year 2012 through 2016 light-duty vehicles that will reduce greenhouse gas emissions and improve fuel economy. EPA is finalizing the first-ever national greenhouse gas (GHG) emissions standards under the Clean Air Act, and NHTSA is finalizing Corporate Average Fuel Economy (CAFE) standards under the Energy Policy and Conservation Act.

2. The new standards apply to new passenger cars, light-duty trucks, and medium-duty passenger vehicles, covering model years 2012 through 2016. The EPA GHG standards require these vehicles to meet an estimated combined average emissions level of 250 grams of carbon dioxide (CO₂) per mile in model year 2016, equivalent to 35.5 miles per gallon (mpg) if the automotive industry were to meet this CO₂ level all through fuel economy improvements.

3. The national programme allows automobile manufacturers to build a single light-duty national fleet that satisfies all requirements under both Federal programmes and the standards of the State of California and other states that have adopted the California standards. The national programme therefore provides critical nationwide environmental and energy benefits while ensuring that consumers have a full range of vehicle choices.

Need to Reduce Greenhouse Gas (GHG) Emissions and Improve Fuel Economy from Passenger Cars and Light Trucks

4. The rules will simultaneously reduce greenhouse gas emissions, improve energy security, increase fuel savings, and provide clarity and predictability for manufacturers.

5. Climate change is one of the most significant long-term threats to public health and the global environment. It is caused by an excess of greenhouse gases in the atmosphere which effectively trap some of the Earth's heat that would otherwise escape into space. Greenhouse gases are both naturally occurring and anthropogenic. Greenhouse gases emitted as a result of human activities include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

6. The key effects of climate change observed to date and projected to occur in the future include, but are not limited to, more frequent and intense heat waves, more severe wildfires, degraded air quality, heavier and more frequent downpours and flooding, increased drought, greater sea level rise, more intense storms, harm to water resources, continued ocean acidification, harm to agriculture, and harm to wildlife and ecosystems.

7. Improving energy security by reducing our dependence on oil has been a national objective since the first oil price shocks in the 1970s. Tight global oil markets led to prices over US \$100 per barrel in 2008, with gasoline reaching as high as \$4 per gallon in many parts of the U.S., causing financial hardship for many families. The light-duty vehicles subject to this national programme account for about 40 % of all U.S. oil consumption.

8. Mobile sources emitted 31 per cent of all U.S. GHG emissions in 2007 (transportation sources, which do not include certain off-highway sources, account for 28 per cent) and have been the fastest-growing source of U.S. GHG emissions since 1990. Mobile sources addressed in the recent endangerment and contribution findings under CAA section 202(a) – light-duty vehicles, heavy-duty trucks, buses, and motorcycles – accounted for 23 % of all U.S. GHG in 2007. Heavy-duty trucks, buses, and motorcycles – accounted for 23 per cent of all U.S. GHG in 2007. Light-duty vehicles emit four GHGs – CO₂, methane, nitrous oxide, and hydrofluorocarbons--and are responsible for nearly 60 per cent of all mobile source GHGs and over 70 per cent of Section 202(a) mobile source GHGs. For light-duty vehicles in 2007, CO₂ emissions represent about 94 per cent of total greenhouse emissions (including HFCs), and the CO₂ emissions measured by EPA fuel economy compliance tests represent about 90 per cent of all greenhouse gas emissions

Benefits and Costs of the National Program

9. Over the lifetime of the vehicles sold during 2012–2016, this national programme is projected to reduce U.S. greenhouse gas emissions by 960 million metric tons and save 1.8 billion barrels of oil. In total, the combined EPA and NHTSA 2012–2016 standards will reduce GHG emissions from the U.S. light-duty fleet by approximately 21 per cent by 2030 over the level that would occur in the absence of the national program.

10. EPA estimates that the lifetime cost of 2012-2016 model year vehicles under the national programme are less than \$52 billion, well below the expected benefits, which are expected to be approximately \$240 billion. The monetized benefits include the effects of the programme on fuel savings, CO₂ reductions, particulate matter (PM_{2.5}) benefits, improved energy security, and other impacts such as the value of less frequent refueling, the value of increased driving, and the monetized impact of increased traffic congestion, motor vehicle crashes, and noise. There are also potential impacts of the rule that are not quantified and monetized in the model year analysis, including the health and environmental impacts associated with changes in ambient exposures to toxic air pollutants and ozone, and the benefits associated with avoided non-CO₂GHGs (methane, nitrous oxide, HFCs). The national programme is comprised of the two agencies' standards, and this discussion of costs and benefits of EPA's GHG standards does not change the fact that both the CAFE and greenhouse gas standards, jointly, are the source of the majority of the programme benefits and costs.

Benefits to Consumers

11. Together, EPA and NHTSA estimate that the average cost increase for a model year 2016 vehicle due to the national programme will be approximately \$950. U.S. consumers who pay for their vehicle in cash will save enough in lower fuel costs over the first three years, on average, to offset these higher vehicle costs. However, most U.S. consumers purchase a new vehicle using credit rather than paying cash. Consumers using an average 5-year, 60-month loan would see immediate savings due to their vehicle's lower fuel consumption in the form of reduced annual costs of \$130-\$180 a year throughout the duration of the loan (that is, the fuel savings will outweigh the increase in loan payments by \$130-\$180 per year).

12. Whether a consumer takes out a loan or pays for their vehicle in cash, consumers would save more than \$3,000 over the lifetime of a model year 2016 vehicle (that is, the \$4,000 saved on fuel easily offsets the increased cost of the vehicle). To calculate these fuel savings, fuel prices (including taxes) were estimated to range from \$2.61/gallon in 2012, to \$3.60/gallon in 2030, to \$4.49/gallon in 2050, based on Department of Energy projections.

Programme Flexibilities

13. NHTSA's and EPA's programmes provide compliance flexibility to manufacturers, especially in the early years of the national programme. This flexibility is expected to provide sufficient lead time for manufacturers to make necessary technological improvements and reduce the overall cost of the programme, without compromising overall environmental and fuel economy objectives.

14. EPA established a system of averaging, banking, and trading (ABT) of credits integral to the fleet averaging approach, based on a manufacturer's fleet average CO₂ performance. This approach would allow credit trading among all vehicles a manufacturer produces, both cars and light trucks. Credit trading between companies will also be permitted. This programme is similar to ABT programmes EPA has established in other programmes for motor vehicles. EPA is also including credits for improved air conditioning performance (both reduced leakage of refrigerant and improved air conditioner efficiency).

15. EPA is also finalizing several additional credit provisions. These include credits based on the use of advanced technologies, and generation of credits for superior greenhouse gas emission reduction performance prior to model year 2012. These credit programmes will provide flexibility to manufacturers, which may be especially important during the early transition years of the programme. In addition, both NHTSA and EPA are continuing to offer credits for vehicles designed to operate on alternative fuels, although these credits will no longer be available after model year 2015 under the EPA greenhouse gas programme.

Preamble and Regulatory Text

16. The preamble and regulatory text for this programme can be found in the files below. They are also accessible through the web site shown in the "For More Information" section below.

www.regulations.gov/search/Regs/home.html#documentDetail?R=0900006480ae8a

38

For More Information

17. The final rule and related documents can be accessed electronically on NHTSA's web site and on EPA's web site at:

www.nhtsa.gov/fuel-economy

www.epa.gov/otaq/climate/regulations.htm
