



HARMONIZED SYSTEM
COMMITTEE

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O. Eng.

Brussels, 6 April 2001.

CLASSIFICATION OF MOTOR VEHICLES WITH A "HYBRID" POWER SYSTEM

(Item IX.7 on Agenda)

I. BACKGROUND

1. On 19 February 2001, the Secretariat received a letter from the Maltese Administration, concerning the classification of the "Toyota Prius" motor vehicle.
2. According to the description given in the Maltese letter and the technical documentation attached thereto, the vehicle at issue is equipped with a "hybrid" power system which allows a gasoline engine and an electric motor to work in combination. This hybrid system is described in the technical documentation as follows (Technical documentation provided by Malta will be made available (English only) during the Session) :

"In the Toyota Hybrid System (THS), a sophisticated controller allows the gasoline engine and electric motor to work together in concert. When the engine demand is low (starting, travelling at low speed or stopping), Prius is powered by the electric motor. Then, during normal travelling, the gasoline engine engages, and serves a dual purpose : running the generator that powers the electric motor that drives the wheels and supplementing the electric motor to also drive the wheels; this ratio is controlled for maximum efficiency. Next, at full acceleration the normal travelling mode is boosted by additional power flowing to the motor from the battery. Finally, when decelerating or braking, the wheels drive the electric motor which acts as a generator and recharges the battery. When the vehicle is stopped, the engine stops automatically. However, when it is necessary to charge the battery and/or to run the air conditioner compressor, the engine will continue to run. And, battery charging continues while the vehicle is stopped or when engine demand is low. The gasoline engine runs the generator as needed to charge the battery back to full strength.

Gasoline engine : L4 1.5 litre (1497 cc) aluminium cylinder, 16 valve, with a maximum output (kW/rpm) of 53 (72 DIN hp)/4500.
Electric motor : Permanent magnet (2CM) with a maximum output (kW/rpm) of 33 (45 DIN hp)/1040-5600.
Battery : Nickel-metal hydride (Ni-MH) Hybrid Vehicle Battery with an output of 273.6 volts.
Fuel consumption : 5.9 l/100 km in urban conditions; 4.6 l/100 km in extra urban conditions; 5.1 l/100 km combined".

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3. While the importer contended that the motor vehicle in question should be classified in subheading 8703.90, the Maltese Administration considered the merits of subheadings 8703.22 and 8703.90, since the vehicle was powered by both types of engines covered by these two subheadings.
4. The Maltese Administration noted that, under General Interpretative Rule 3, it would seem that in the case of this motor car, subheading 8703.90 was applicable, but one could not ignore the importance of the gasoline engine since its role also includes the supplementing of the electric motor to drive the wheels.

II. SECRETARIAT COMMENTS

5. The vehicle at issue is a “motor car” to be classified in heading 87.03. The question involved here is the application of General Interpretative Rule 6.
6. Motor cars for the transport of persons should fall in subheading 8703.2 if they are equipped with a spark-ignition internal combustion reciprocating piston (or “gasoline”) engine. A motor car equipped with an electric motor should be classified in the residual subheading 8703.90.
7. Under a strict interpretation of the text of subheading 8703.2, one could say that the “Toyota Prius” motor car should be classified in subheading 8703.2 by application of General Interpretative Rules 1 and 6, since the car is a vehicle “with a spark ignition internal combustion reciprocating piston engine”.
8. However, the motor car in question is equipped with a “hybrid” power system which allows a gasoline engine and an electric motor to work in combination.
9. This leads to the argument that the application of the first part of GIR 3 (a) should be considered in this particular case. Under this argument, the “Toyota Prius” motor car should be classified in subheading 8703.2; this subheading being regarded as more specific than the residual subheading 8703.90.
10. Nevertheless, the description of the “hybrid” system given (in paragraph 2) above explains that the motor car under consideration is principally powered by its electrical motor for starting, travelling at low speed or stopping and is supported, during high load and/or high speed driving, by the gasoline engine, which also serves to run the generator that powers the electric motor. This suggests that the electric motor keeps running during all stages of driving and the gasoline engine only engages in certain special circumstances.
11. On this basis, a counter-argument could be made that, under the provisions of the second part of GIR 3 (a), subheadings 8703.2 and 8703.90 should be regarded as equally specific and thus the “Toyota Prius” motor car should be classified in subheading 8703.90 by application of GIR 3 (b), because the essential character of the hybrid power system is given by the electric motor.
12. Finally, in case of doubt about whether the essential character of the “Toyota Prius” motor car is given by the electric motor or the gasoline engine, GIR 3 (c) would apply. Thus, the motor car at issue would again fall in subheading 8703.90, as this subheading occurs last in numerical order.

13. In addition, another point relevant to the classification of the vehicle in question is that the Secretariat believes that, by 2007, production and trade in such vehicles (with “hybrid” power system) are likely to increase sharply. It might be worthwhile, in respect of updating the HS, to discuss whether such vehicles should be separately identified in the HS by Article 16 procedure.
14. Therefore, the intention of the Secretariat in bringing this question to the attention of the Secretariat is twofold :
- (a) the classification of the motor vehicles with “hybrid” power systems; and the
 - (b) desirability of the separate identification of such vehicles in the HS.

III. CONCLUSIONS

15. On the basis of the information and comments provided above, the Committee is invited to :
- (a) examine the classification of the “Toyota Prius” in particular and the motor vehicles with “hybrid” power systems in general; and
 - (b) express its views as to whether such motor vehicles should be separately identified in the HS 2007.
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